The effect of camels on the growth of bank stock prices listed on the Indonesian Stock Exchange

Check for updates

[1]*Muh. Fauzan Arlan, [2]Farah Margaretha Leon

[1,2]Program Studi Manajemen, Fakultas Ekonomi dan Bisnis,
Universitas Trisakti - Indonesia

e-mail:
[1]*122012411038@std.trisakti.ac.id *(corresponding author)*
[2]farahmargaretha@trisakti.ac.id

ABSTRACT

The purpose of this study is to investigate how the stock price growth of banks listed on the Indonesia Stock Exchange (IDX) is impacted by the CAMELS components (capital adequacy ratio, non-performing assets, current and savings account ratio, return on capital employed, net interest margin, and liquid assets to total assets), leverage as a novel variable, and bank size as a control variable between 2020 and 2024. Purposive sampling produced 160 observations from the 32 banks that made up the research sample. In order to address heteroscedasticity, autocorrelation, and cross-sectional dependence, the analysis used panel data regression utilizing the Random Effects Model technique using EViews 0.9 software, along with diagnostic tests. The findings show that while the net interest margin has a large negative impact on stock price growth, the capital adequacy ratio and the current and savings account ratio have a positive and considerable impact. In the meanwhile, there is no discernible impact from non-performing assets, return on capital employed, liquid assets relative to total assets, or bank size. Furthermore, it has been discovered that leverage significantly and favourably affects the growth of stock prices. These results imply that while evaluating the prospects of banking stocks, investors should pay particular attention to solid capitalization, effective funding through low-cost deposits, and the efficient use of leverage. On the other hand, as they can point to underlying issues that could have a detrimental impact on market valuations, increases in net interest margins should be closely watching. The study's practical ramifications include suggestions for financial managers on how to best balance leverage levels, low-cost funding management, and capitalization measures. Investors are also urged to take these signs into account when choosing which investments to make.

Keywords: *Bank Size; Capital Adequacy Ratio; Current and Saving Account Ratio; Leverage; Liquid Asset to Total Asset; Net Interest Margin; Non Performing Asset; Return on Capital Employed*

©2026 Copyright : Authors
Published by : Program Studi Manajemen, Universitas Nusa Cendana, Kupang – Indonesia.
This is an open access article under license:
CC BY (https://creativecommons.org/licenses/by/4.0/)

INTRODUCTION

Banking is a primary economic sector that serves an intermediary function (Wuryani et al., 2021). Changes in market structure, the acceleration of digitalization, and post-pandemic macroeconomic fluctuations have created new dynamics in banks' financial performance and capital market behavior. In their study, Sar and Panigrahi (2025) argue that internal banking factors measured using CAMELS indicators explain only part of the variation in stock price growth. Consequently, market volatility is often driven by external and structural factors that may be temporary or systemic in nature.

The use of appropriate control variables and econometric methods is important for reducing potential bias and obtaining reliable estimates when examining the relationship between financial performance and stock price growth (Curado et al., 2024; Sar & Panigrahi, 2025). Curado et al. (2024) emphasize the importance of appropriately selecting and reporting control variables to eliminate alternative explanations and reduce statistical noise, particularly in cross-country or cross-bank studies that are susceptible to heterogeneity and endogeneity. Therefore, empirical studies investigating the impact of financial ratios on stock prices should carefully consider the design and selection of control variables, as well as the application of appropriate econometric techniques (Curado et al., 2024).

Contemporary empirical evidence shows heterogeneous findings across countries and time periods. In the context of emerging markets, Ikechukwu and Owualah (2022) report that certain CAMELS components may exert different effects on bank stock prices depending on local market conditions and data quality. Their findings confirm that results from one jurisdiction (e.g., India or Nigeria) cannot be generalized to other contexts without appropriate adaptation. These variations underscore the need for research that tailors the CAMELS framework to the specific characteristics of domestic capital markets, particularly in the post-pandemic environment (Ikechukwu & Owualah, 2022).

Several empirical studies in Indonesia document inconsistent relationships between financial indicators and stock prices, with variations observed across sectors and time periods. Agustyawati and Rais (2023) find that certain financial performance ratios remain relevant in explaining stock price movements in the Indonesian market; however, their significance and direction may change over time due to macroeconomic conditions, regulatory developments, and shifts in industrial structure. Accordingly, adapting the CAMELS framework and employing relevant observation periods such as the post-pandemic era is essential to generate accurate and practically applicable findings for financial managers and domestic investors (Agustyawati & Rais, 2023).

In addition to the internal banking variables captured by the CAMELS framework, this study introduces leverage (LEV) as a novel variable to extend prior research. The inclusion of leverage is motivated by Odoemelam, et al (2025), who find that leverage does not consistently exert a significant effect on stock prices in Nigerian public companies, suggesting the need for further testing in different market contexts, including Indonesia. Leverage reflects a firm's funding structure and degree of reliance on debt (Altman et al., 2019). Higher leverage may increase financial risk and influence investor perceptions of stock performance and valuation (Altman et al., 2019). Under certain conditions, excessive debt can reduce financial flexibility and heighten the probability of financial distress, leading investors to respond more cautiously to stock performance (Altman et al., 2019). By incorporating leverage as a control variable, this study captures variations in funding risk that are not fully represented by CAMELS indicators, thereby providing greater analytical depth in explaining stock price growth.

This study applies and modifies Sar and Panigrahi's (2025) CAMELS model to the context of banks listed on the Indonesia Stock Exchange in accordance with the conceptual framework and current empirical findings. The main goal is to determine how much the CAMELS components Capital Adequacy Ratio (CAR), Non-Performing Assets (NPA), Current and Savings Account Ratio (CASA), Return on Capital Employed (ROCE), Net Interest Margin (NIM), and Liquid Assets to Total Assets (LATA) along with pertinent control variables, account for the recent increase in bank stock prices in Indonesia. The study uses an adjusted panel data approach that takes into account any problems with heteroscedasticity, autocorrelation, and cross-sectional dependence in order to guarantee robust estimate. Policymakers, bank management, and investors should be able to better grasp the factors influencing stock price rise in Indonesia's banking industry thanks to the findings (Sar & Panigrahi, 2025; Curado et al., 2024).

To produce more reliable and contextually appropriate estimates for the Indonesian banking sector, the study includes bank size, measured by total assets, as a control variable and leverage (LEV) as a novel variable. The findings are expected to provide empirical insights for investors, bank management, and policymakers regarding the primary factors influencing stock price growth in Indonesia's banking industry.

LITERATURE REVIEW, RESEARCH FRAMEWORK, AND HYPOTHESES

Financial performance reflects a financial institution's ability to generate profits, maintain capital stability, and manage risk efficiently (Al Zaidanin, 2020; Banu & Vepa, 2021). It can be assessed through profitability, efficiency, and solvency ratios, which indicate the effectiveness of resource management in achieving organizational objectives. According to Sar and Panigrahi (2025), the CAMELS framework which includes the Capital Adequacy Ratio (CAR), Non-Performing Assets (NPA), Current and Savings Account Ratio (CASA), Return on Capital Employed (ROCE), Net Interest Margin (NIM), and Liquid Assets to Total Assets (LATA) can be used to assess bank financial performance in a thorough manner. Numerous empirical research evaluating the performance and soundness of banks in different nations have extensively verified this paradigm (Banu & Vepa, 2021; Nguyen, Tran, & Le, 2020). Furthermore, it has been demonstrated that a firm's market valuation and overall banking performance are influenced by bank health indicators like capitalization, asset quality, and risk management (Lestari & Margaretha, 2024).

The CAMELS model is widely regarded as a comprehensive framework for evaluating a bank's overall financial condition, as it assesses six key dimensions of performance and stability. Capital Adequacy Ratio (CAR) measures a bank's capacity to absorb potential losses, while Non-Performing Assets (NPA) reflect the quality of its earning assets. The Current and Savings Account Ratio (CASA) evaluates the efficiency of low cost fund management, and Return on Capital Employed (ROCE) indicates profitability. Net Interest Margin (NIM) captures the effectiveness of interest income generation, whereas Liquid Assets to Total Assets (LATA) measure the bank's ability to meet short-term obligations (Sar & Panigrahi, 2025). Accordingly, CAMELS serves as an essential tool in bank supervision and financial performance analysis.

Market performance represents how the capital market evaluates a firm's value, as reflected in movements in its stock price (Sar & Panigrahi, 2025). Stock prices are influenced by both internal factors such as financial performance and external factors, including macroeconomic conditions and market sentiment (Sar & Panigrahi, 2025). Consequently, fluctuations in stock prices signal the market's assessment of a company's prospects and risk profile (Sar & Panigrahi, 2025). Sar and Panigrahi (2025)

operationalize market performance using stock price growth as the primary indicator, as it captures investors' perceptions of bank value and future performance.

In developing countries such as Indonesia and India, bank stock prices often reflect not only financial fundamentals but also fluctuations in investor confidence and regulatory dynamics within the industry (Ikechukwu & Owualah, 2022; Wuryani et al., 2021). Therefore, understanding market behavior requires an empirical and quantitative approach that links financial performance indicators to stock price growth.

Return on Assets (ROA) and Net Profit Margin (NPM) have a major positive impact on the stock prices of companies listed on the London Stock Exchange, according to Anwaar (2016). On the other hand, Sar and Panigrahi (2025) claim that the rise of Indian banks' stock prices is significantly impacted negatively by Non-Performing Assets (NPA), Return on Capital Employed (ROCE), and Net Interest Margin (NIM). These contradictory results imply that increases in profitability ratios do not always result in higher stock prices, especially when they are coupled with increased capital expenses and credit risk.

In Indonesia, empirical research has yielded conflicting results. The Capital Adequacy Ratio (CAR), Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM) all have a favorable impact on bank stock prices, according to Sarjono and Suprapto (2020). This suggests that improved financial performance boosts investor confidence in banking stocks. However, Rusdiyanto et al. (2019) discover that other financial parameters have no discernible influence, with the exception of the Capital Adequacy Ratio (CAR) and Non-Performing Loans (NPL). Similarly, Agustyawati and Rais (2023) show that while the Debt-to-Equity Ratio (DER) and Price-to-Earnings Ratio (PER) are not important factors that influence stock prices, other indicators like Earnings per Share (EPS) and Net Profit Margin (NPM) are. Overall, these results show that the influence of financial indicators on stock prices is dependent on macroeconomic conditions and industry peculiarities rather than being universal.

Signalling theory and market efficiency theory are two ways to look at the connection between market and financial performance (Sar & Panigrahi, 2025). Market efficiency theory contends that stock prices take into account all pertinent and publicly available information, while signalling theory holds that financial data serves as a signal that helps investors determine a company's worth (Sar & Panigrahi, 2025). As a result, combining the CAMELS framework with stock price growth as a gauge of market success offers a more thorough understanding of the factors influencing bank stock value.

Building on previous theories and empirical findings, this study uses Sar and Panigrahi's (2025) CAMELS model to construct a conceptual framework to investigate how financial performance affects the growth of banking stock values in Indonesia. The independent variables are the Current and Savings Account Ratio (CASA), which shows the effectiveness of low-cost fund management; Non-Performing Assets (NPA), which show asset quality and credit risk exposure; and Capital Adequacy Ratio (CAR), which shows a bank's ability to absorb risk. Additionally, Liquid Assets to Total Assets (LATA) indicates liquidity capability, Net Interest Margin (NIM) quantifies the bank's ability to produce money from interest differentials, and Return on Capital Employed (ROCE) gauges how well capital use generates profits.

The Effect of Capital Adequacy Ratio (CAR) on Stock Price Growth

A high Capital Adequacy Ratio (CAR) indicates strong capitalization and enhances investor confidence in a bank's ability to absorb potential losses and manage risk effectively (Nguyen et al., 2020). A well-capitalized bank is generally perceived as more stable and resilient to economic shocks (Sarjono & Suprapto, 2020; Banu & Vepa, 2021).

Empirical studies support this relationship (Sarjono & Suprapto, 2020; Banu & Vepa, 2021; Ikechukwu & Owualah, 2022). Sarjono & Suprapto (2020) and Banu & Vepa (2021) find that CAR has a positive effect on bank stock prices, as investors tend to value banks with strong capital positions more highly. Similarly, Ikechukwu & Owualah (2022) report that increases in CAR contribute to higher bank stock valuations in Nigeria. In addition, Nguyen et al. (2020) emphasize that strong capital adequacy strengthens investor trust and improves market perception. From the perspective of signaling theory, a higher CAR serves as a positive signal of financial soundness, leading to a more favorable market response (Sar & Panigrahi, 2025). Therefore, the higher the Capital Adequacy Ratio (CAR), the more positive the market response to banking stocks. Based on the previous findings, the first hypothesis of this study is formulated as follows:

H_1: Capital Adequacy Ratio (CAR) has a positive effect on the stock price growth of conventional banks listed on the Indonesia Stock Exchange (IDX).

The Effect of Non-Performing Assets (NPA) on Stock Price Growth

High Non-Performing Assets (NPA) indicate elevated credit risk and deteriorating asset quality, which may weaken investor confidence. Empirical evidence supports this negative relationship. Sar & Panigrahi (2025) report that NPA has a significant negative effect on bank stock price growth in India. Similarly, Wuryani et al., (2021) find that increases in non-performing loans reduce bank market value, as investors interpret rising credit risk as a signal of declining financial soundness. Consistent with these findings, Agustyawati & Rais (2023) argue that a high ratio of non-performing loans generates negative expectations regarding a firm's future profitability. From a signaling perspective, rising NPA levels may signal weakened financial hiealth, prompting adverse market reactions. Therefore, the higher the level of Non-Performing Assets (NPA), the lower the bank's stock price growth. Based on the previous findings, the second hypothesis is formulated as follows:

H_2: Non-Performing Assets (NPA) have a negative effect on the stock price growth of conventional banks listed on the Indonesia Stock Exchange (IDX).

The Effect of the CASA Ratio on Stock Price Growth

A high CASA Ratio indicates efficient fund management and lower interest costs, which may lead to higher profit margins (Sar & Panigrahi, 2025). Research by Curado et al. (2024) confirms the importance of operational efficiency as a control variable in explaining profitability and market perception in the banking sector. Furthermore, Rahman and Ayumi (2020) demonstrate that efficient fund management through an increase in the CASA Ratio can enhance bank stock value, as it strengthens investor confidence in management efficiency. Therefore, an increase in the CASA Ratio has the potential to improve market performance in the banking sector. Based on these previous findings, the third hypothesis of this study is formulated as follows:

H_3: The CASA Ratio has a positive effect on the stock price growth of conventional banks listed on the Indonesia Stock Exchange (IDX).

The Effect of Return on Capital Employed (ROCE) on Stock Price Growth

Return on Capital Employed (ROCE), which measures the effectiveness of capital management, is a crucial measure of profitability, according to Sar and Panigrahi (2025). Nonetheless, their results show that ROCE significantly lowers bank stock values in India, presumably as a result of the high leverage (LEV) risk. Anwaar (2016), on the other hand, reports the opposite outcome, demonstrating that ROCE positively impacts stock returns

in the European market. According to Agustyawati and Rais (2023), profitability ratios like Return on Equity (ROE) and Return on Assets (ROA) typically have a favorable impact on stock prices in the Indonesian setting, indicating that profitability is a powerful signal for investors. As a result, the direction of ROCE's impact on stock price growth might change based on the state of the economy and the capital structure of the bank. The following is the formulation of the fourth hypothesis for this study based on these earlier findings:

H_4: Return on Capital Employed (ROCE) affects the stock price growth of conventional banks listed on the Indonesia Stock Exchange (IDX).

The Effect of Net Interest Margin (NIM) on Stock Price Growth

A large Net Interest Margin (NIM) indicates effective management of productive assets, which could draw in investors, claim Banu and Vepa (2021). Sar and Panigrahi (2025), however, discover that NIM has a negative impact on the growth of bank stock prices in India, indicating that overly large interest margins can be a warning of elevated market risk. In a similar vein, NIM and stock returns in Nigeria have a negative correlation, according to Ikechukwu and Owualah (2022). On the other hand, Wuryani et al. (2021) discover that NIM has a favourable impact on Indonesian stock prices. These contradictory results suggest that there is a highly contextual relationship between NIM and stock price performance. The following formulation of the study's fifth hypothesis is based on these earlier findings:

H_5: Net Interest Margin (NIM) affects the stock price growth of conventional banks listed on the Indonesia Stock Exchange (IDX).

The Effect of Liquid Assets to Total Assets (LATA) on Stock Price Growth

A high Liquid Assets to Total Assets (LATA) ratio reflects financial stability and management's ability to manage cash flow (Nguyen et al., 2020). However, an excessively high LATA ratio may indicate inefficiency in the allocation of productive funds, which could ultimately reduce profitability (Sar and Panigrahi, 2025). Agustyawati and Rais (2023) suggest that investors tend to respond positively to banks that maintain a balance between liquidity and profitability. Therefore, LATA may have either a positive or negative effect on stock prices, depending on how effectively banks utilize their liquid assets. Based on these previous findings, the sixth hypothesis of this study is formulated as follows:

H_6: Liquid Assets to Total Assets (LATA) affects the stock price growth of conventional banks listed on the Indonesia Stock Exchange (IDX).

The Effect of Leverage on Stock Price Growth

Several studies suggest that higher leverage (LEV) tends to reduce firm value and stock prices due to increased financial risk and the potential for financial distress (Altman et al., 2019). However, empirical findings by Odoemelam et al. (2025) indicate that LEV is not a primary determinant of stock prices, suggesting that investors in emerging markets may prioritize other fundamental indicators such as profitability and firm size over capital structure. In contrast, Fajar et al. (2025) report that internal firm factors, including LEV, firm size, and profitability, significantly influence stock prices in Indonesia. Nevertheless, high leverage may still reduce a company's market value, as excessive debt burdens can weaken investor confidence, particularly in sectors that are sensitive to financial risk. Based on these previous findings, the seventh hypothesis of this study is formulated as follows:

H_7: Leverage (LEV) affects the stock price growth of conventional banks listed on the Indonesia Stock Exchange (IDX).

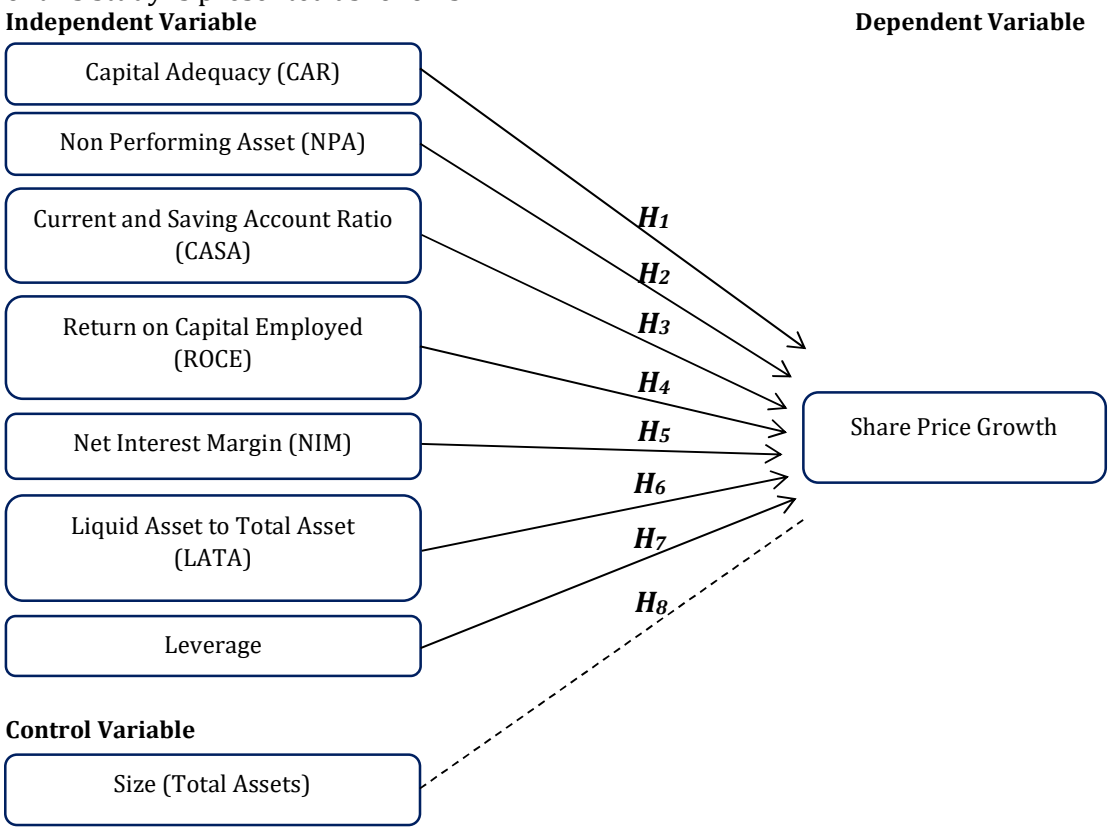
The Effect of Bank Size (Total Assets) as a Control Variable on Stock Price Growth

In general, larger banks gain from more public trust, better access to capital, and greater diversification. But according to a number of studies (e.g., Sakawa et al., 2020; Avramidis et al., 2018), operational complexity and higher expenses may result in lower market valuations for major banks. To take into consideration the possible impact of company scale on stock price increase, bank size (as determined by total assets) is included in this analysis as a control variable. This strategy is in line with research by Laeven et al. (2016), which demonstrates how larger banks may result in diseconomies of scale and have a detrimental impact on market valuation.

H_8: Bank size (total assets), as a control variable, affects the stock price growth of conventional banks listed on the Indonesia Stock Exchange (IDX).

Research Framework

The dependent variable in this study is stock price growth (SPG), which serves as a proxy for market performance. Prior studies suggest that CAMELS variables may influence stock prices either positively or negatively, depending on economic conditions and risk management practices (Sar & Panigrahi, 2025; Ikechukwu & Owualah, 2022; Wuryani et al., 2021). Based on the relationships among these variables, the conceptual framework of this study is presented as follows:



Source : Author's elaboration based on previous literature, 2025

Figure 1
Research Framework Model

METHOD

The secondary data used in this investigation came from publicly accessible sources. The Indonesia Stock Exchange's (IDX) official website served as the source of the quantitative data. The sample was selected using a purposive sampling technique to identify banking companies that meet predetermined criteria (Fajar et al., 2025). Stated otherwise, the sample comprises banking companies that meet particular criteria pertinent to this research. The following are the selection criteria for the sample:

1. Conventional banks listed on the IDX consecutively during the 2020–2024 period.
2. Conventional banks that published complete annual financial reports consecutively during the 2020–2024 period.
3. Conventional banks with complete stock price data for the 2020–2024 period.

Table 1
Results of sampling using purposive sampling

Description	Number
Banking population listed on the IDX during the 2020-2024 period	47
Incomplete bank financial report data	(3)
Sharia banking	(4)
Regional banks	(3)
Incomplete stock data	(5)
Number of research analysis units	32
Number of observations over 5 years	160

The purpose of measuring each variable in this study is to investigate how the independent and dependent variables relate to one another in order to explain the growth performance of banking stock prices. The CAMELS framework is used to measure financial performance indicators, including Capital Adequacy Ratio (CAR), Non-Performing Assets (NPA), CASA Ratio, Return on Capital Employed (ROCE), Net Interest Margin (NIM), and Liquid Assets to Total Assets (LATA). The dependent variable is Stock Price Growth (SPG). Leverage (LEV) is another innovation variable.

The following lists each variable's operational definitions and measurements:

Table 2
Variables and Measurements

Variable Type	Variable Name	Proxy	Symbol	Formula	References
Dependent Variable	Market Performance	Share Price Growth	SPG	$\frac{Pt - Pt - 1}{Pt}$	Sar and Panigrahi (2025); Wuryani et al. (2021)
Independent Variables	Capital Adequacy	Capital Adequacy Ratio	CAR	$\frac{Modal}{ATMR}$	Sar and Panigrahi (2025); Nguyen et al. (2020)
	Asset Quality	Non-Performing Asset	NPA	$\frac{Non\ performing\ loans}{Total\ Loans}$	Nugroho et al. (2020);

Variable Type	Variable Name	Proxy	Symbol	Formula	References
					Wuryani et al. (2021)
	Management Efficiency	CASA Ratio	CASA	$\frac{Current\ Account + Savings\ Account}{Total\ Deposits}$	Nugroho et al. (2020); Sar and Panigrahi (2025)
	Earnings Ability	Return on Capital Employed	ROCE	$\frac{EBIT}{Capital\ Employed}$	Sar and Panigrahi (2025); Agustyawati and Rais (2023)
	Earnings Ability	Net Interest Margin	NIM	$\frac{Net\ Interest}{Productive\ Assets}$	Banu and Vepa (2021); Sar and Panigrahi (2025)
	Liquidity	Liquid Asset to Total Asset	LATA	$\frac{Current\ Assets}{Total\ Assets}$	Nguyen et al. (2020); Sar and Panigrahi (2025)
	Leverage	Total Debt to Total Assets	LEV	$\frac{Total\ Debt}{Total\ Assets}$	Odoemelam et al. (2025)
Control Variable	Bank Size	Total Assets	ASSET	$Total\ Assets$	Odoemelam et al. (2025); Wuryani et al. (2021)

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

The results of the descriptive statistical analysis of the Share Price Growth (SPG) variable indicate a maximum value of 15.686320, achieved by PT Allo Bank Indonesia Tbk (BBHI) in 2021, and a minimum value of -0.913730, recorded by PT Bank Mayapada (MAYA) in 2021. The average SPG value of 0.262819 is lower than the standard deviation of 1.659117, suggesting that the data distribution is relatively dispersed. This implies inconsistency in stock price growth performance among the sampled companies, where some issuers experienced substantial price increases while others recorded declines, reflecting the volatile market conditions during the research period.

The results of the descriptive statistical analysis of the Capital Adequacy Ratio (CAR) variable indicate a maximum value of 1.061038, recorded by PT Bank Ganesha Tbk (BGTG) in 2022, and a minimum value of 0.104952, recorded by PT Bank Mayapada (MAYA) in 2024. The average CAR value of 0.314850 is higher than the standard deviation of 0.164576, suggesting a relatively low level of variation in the data. This indicates that the distribution tends to be homogeneous among the sampled banks,

implying that most banks maintained capital levels within a relatively similar range throughout the research period.

The results of the descriptive statistical analysis of the Non-Performing Asset (NPA) variable indicate that the maximum value of 0.099410 was recorded by PT Bank KB Indonesia Tbk (BBKP) in 2021, while the minimum value of 0.000125 was recorded by PT Allo Bank Indonesia Tbk (BBHI) in 2022. The average NPA value of 0.026387 is higher than the standard deviation of 0.016178, suggesting relatively low dispersion in the data. This implies that the asset quality of most sampled banks remained at a relatively low level of risk and tended to be stable throughout the research period.

According to the findings of the descriptive statistical analysis of the CASA Ratio (Current and Saving Account Ratio) variable, PT Bank Central Asia Tbk (BBCA) recorded the highest value in 2022 at 0.815550, while PT Allo Bank Indonesia Tbk (BBHI) recorded the lowest value at 0.079030. Indicating substantial volatility in the data, the average CASA ratio of 0.388820 is more than the standard deviation of 0.191344. Given that the majority of banks maintained a somewhat stable CASA ratio during the course of the study, this suggests that the distribution of low-cost funds ratios among the studied banks is generally consistent.

PT Bank Mega Tbk (MEGA) recorded the highest value of 0.236205 in 2021, while PT Bank Raya Indonesia Tbk (AGRO) recorded the lowest value of -1.109788, according to the results of the descriptive statistical analysis of the Return on Capital Employed (ROCE) variable. The standard deviation of 0.129668 is higher than the average ROCE value of 0.026751, indicating that the sampled banks' performance varies greatly. This reveals a sizable discrepancy between banks that can produce the best returns on capital and those that are under pressure to increase profitability, which reflects fluctuations in capital utilization during the study period.

According to the Net Interest Margin (NIM) variable's descriptive statistical analysis, PT Bank Neo Commerce Tbk (BBYB) recorded the highest value of 0.178943 in 2023, while PT Bank JTrust Indonesia Tbk (BCIC) recorded the lowest value of 0.002308 in 2020. The standard deviation of 0.023157 is lower than the average NIM value of 0.041092, indicating that the sampled institutions' net interest margin variability is minimal. This illustrates how most banks have consistently been able to provide steady interest income from their productive assets during the course of the study.

According to the findings of the descriptive statistical analysis of the Liquid Assets to Total Assets (LATA) variable, PT Bank Raya Indonesia Tbk (AGRO) recorded a maximum value of 1.066430 in 2021 and PT Bank JTrust Indonesia Tbk (BCIC) recorded a minimum value of 0.698930 in 2020. The standard deviation of 0.056910 is less than the average LATA value of 0.944032, indicating that the studied banks' liquidity volatility is minimal. This suggests that during the course of the study, the ratio of liquid assets to total assets did not change significantly.

According to the asset size (Total Assets) variable's descriptive statistical analysis, PT Bank Mandiri (Persero) Tbk (BMRI) recorded a maximum value of 35.425524 in 2024, while PT Allo Bank Indonesia Tbk (BBHI) recorded a minimum value of 28.581390 in 2020. The standard deviation of 1.688726 is less than the average asset value of 31.81672, indicating a relatively modest variation in asset size among the sampled banks. This suggests that the banks' operating scale and capital structure stayed within a comparatively comparable range over the course of the study.

According to the findings of the descriptive statistical analysis of the Leverage (LEV) variable, PT Bank Tabungan Negara (Persero) Tbk (BBTN) recorded a maximum value of 0.944660 in 2020, while PT Allo Bank Indonesia Tbk (BBHI) recorded a minimum

value of 0.420260 in 2022. The standard deviation of 0.091567 is less than the average LEV value of 0.807703, indicating that there is comparatively less variance in LEV across the sampled banks. This suggests that during the course of the study, the liability-based funding structure stayed consistent and did not show any notable changes.

Table 3
Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std. Dev.
SPG	0.262819	-0.057225	15.68632	-0.91373	1.659117
CAR	0.314850	0.266762	1.061038	0.104952	0.164576
NPA	0.026387	0.025631	0.099410	0.000125	0.016178
CASA	0.388820	0.350995	0.815550	0.079030	0.191344
ROCE	0.026751	0.038600	0.236205	-1.109788	0.129668
NIM	0.041092	0.038585	0.178943	0.002308	0.023157
LATA	0.944032	0.962465	1.066430	0.698930	0.056910
ASET	31.81672	31.32635	35.42552	28.58139	1.688726
LEV	0.807703	0.836465	0.944660	0.420260	0.091567

Source: Data Analyzed, 2025

Individual Test (T-test)

The purpose of this test is to ascertain whether each independent variable significantly affects the dependent variable (Agustyawati & Rais, 2023). Acceptance criteria include rejecting Ho, which indicates that the independent variable affects the dependent variable, if the sig of the T-test is less than 0.05. The independent variable has no effect on the dependent variable if the sig of the T-test is greater than 0.05 (Agustyawati & Rais, 2023).

The Effect of Capital Adequacy Ratio (CAR) on Stock Price Growth

The investigation of the relationship between the Capital Adequacy Ratio (CAR) variable and stock price growth yielded a significant effect, with a probability value of 0.0073 < 0.05 (alpha 5%). 1.135214 is the coefficient. The Capital Adequacy Ratio and Stock Price Growth have a favorable and significant relationship, according to the study's findings. According to this finding, a bank's capacity to sustain financial stability and absorb possible losses increases with its capital adequacy ratio, which in turn boosts investor confidence and propels stock price growth.

These findings align with the empirical study by Sarjono and Suprapto (2020), which reported a positive effect of CAR on bank stock prices in Indonesia, as strong capital is considered an indicator of financial health and the bank's capacity to manage credit risk and economic fluctuations. However, the results differ from Sar and Panigrahi (2025), who found a positive but insignificant effect of CAR on bank stock price growth in India. The insignificance in their study suggests that, although capital adequacy is an important regulatory requirement, CAR tends to be relatively homogeneous among banks, making it a less distinguishing factor in the market's assessment of banking stock performance.

The Effect of Non-Performing Assets (NPA) on Stock Price Growth

Based on the results of the analysis, the effect of the Non-Performing Asset (NPA) variable has a probability value of 0.6770 > 0.05 (alpha 5%), which indicates an insignificant effect. This study concludes that NPA does not have a significant effect on Stock Price

Growth. This finding suggests that, although NPA is an indicator of bank asset quality, fluctuations in its value are not strong enough to influence investors' decisions regarding stock price growth during the study period. Investors appear to pay limited attention to changes in NPA, possibly because the market expects banks to manage credit risk effectively, making variations in NPA less threatening to future performance.

These results differ from the findings of Sar and Panigrahi (2025), who reported that NPAs have a negative and significant effect on stock price growth in the Indian banking context. In India, an increase in NPA is considered a signal of weak asset quality, directly lowering market perceptions of a bank's prospects and implying a decline in stock prices. This illustrates that the Indian capital market is highly sensitive to credit risk and reacts strongly to changes in the quality of banks' loan portfolios.

The Effect of CASA Ratio on Stock Price Growth

According to the analysis's findings, there is a significant impact of the CASA ratio variable on stock price increase, with a probability value of 0.0465 < 0.05 (alpha 5%). 0.343116 is the coefficient. The study's findings indicate that the CASA ratio and stock price increase are positively and significantly correlated. These findings suggest that banks can lower financing costs, increase profitability, and eventually spur stock price growth by holding a larger percentage of low-cost funds (current and savings accounts). Investors appear to view the CASA ratio as an indicator of funding efficiency, which strengthens bank performance and signals positive prospects for future profit growth.

This finding aligns with Sarjono and Suprapto (2020), who reported a positive relationship between CASA ratio and bank stock prices, as it reflects efficient management of third-party funds and stable funding costs. However, the results differ from Sar and Panigrahi (2025), who found a positive but insignificant effect of CASA ratio on bank stock price growth in India. The insignificance in their study suggests that while CASA ratio contributes to cost reduction and profitability, the market does not always respond directly to changes in CASA ratio, particularly when other factors such as asset quality and earnings capacity are more influential in stock price movements.

The Effect of Return on Capital Employed (ROCE) on Stock Price Growth

The analysis's findings show that the Return on Capital Employed (ROCE) variable's impact on stock price growth has a probability value of 0.7818 > 0.05 (alpha 5%), indicating an inconsequential influence. According to the study's findings, ROCE has no discernible impact on stock price growth. According to this research, investors do not primarily take the rate of return on capital invested into account when assessing possible stock price increases. Although ROCE conceptually measures a bank's efficiency in utilizing capital to generate profits, changes in its value were not strong enough to influence market perceptions. Investors appear to focus more on factors such as credit risk, long-term profitability, and funding stability when making investment decisions.

These results align with Das (2017), who found that ROCE does not always significantly affect market value, particularly in highly regulated sectors such as banking. However, the findings differ from Sar and Panigrahi (2025), who reported a negative and significant effect of ROCE on bank stock price growth in India. In their context, an increase in ROCE may reflect aggressive capital utilization, short-term efficiency pressures, or the effects of restructuring and macroeconomic conditions, which could raise investor concerns. These contrasting results indicate that market sensitivity to ROCE depends heavily on the structural context of the banking industry and the economic environment

in each country. Therefore, ROCE is not always a consistent predictor of banking stock price movements.

The Effect of Net Interest Margin (NIM) on Stock Price Growth

According to the analysis's findings, there is a significant impact of the Net Interest Margin (NIM) variable on stock price growth, with a probability value of 0.0134 < 0.05 (alpha 5%). The coefficient, which is -10.49197, indicates a substantial and negative correlation between NIM and stock price growth. This result suggests that the market views an increase in NIM unfavorably, which slows the growth of the stock price. Such a situation may occur when the increase in NIM does not result from improved operational efficiency but rather from higher credit interest rate adjustments or reduced intermediation activities. In these cases, investors may view the increase in NIM as stemming from factors that could suppress credit demand or indicate higher risks in the banking sector.

These results align with Sar and Panigrahi (2025), who also found a negative and significant effect of NIM on bank stock price growth in India. In their study, the decline in stock prices associated with higher NIM was attributed to structural factors such as bank mergers, pressures on asset quality, and economic uncertainty, which make the market more sensitive to potential unsustainable income risks. This confirms that, under certain conditions, an increase in NIM is not always perceived as a positive signal by investors.

The Effect of Liquid Assets to Total Assets (LATA) on Stock Price Growth

The analysis's findings show that the Liquid Assets to Total Assets (LATA) variable has a modest impact on stock price growth, with a probability value of 0.4749 > 0.05 (alpha 5%). According to the study's findings, LATA has no discernible impact on stock price growth. This result implies that investors do not prioritize liquidity levels, as represented by LATA, when assessing the chances for stock price rise. The market might give profitability and asset quality factors more weight than immediate liquidity efficiency. Furthermore, an overabundance of liquidity could indicate that banks are keeping an excessive amount of liquid assets, which would restrict the channeling of credit and possibly limit revenue and market performance.

These findings are in line with those of Sar and Panigrahi (2025), who likewise discovered that LATA had no discernible impact on the increase of Indian banks' stock prices. Liquidity was not a significant factor in that study since investors were more interested in credit risk (Non-Performing Assets, or NPA) and profit-generating potential (ROCE and NIM). As a result, liquidity does not seem to be a reliable indication for influencing changes in stock prices, either in our study or in the Indian context.

The Effect of Leverage on Stock Price Growth

The analysis's findings show that there is a significant impact of the Leverage (LEV) variable on Stock Price Growth, with a probability value of 0.0016 < 0.05 (alpha 5%). Here is the coefficient: 11.93657. According to the study's findings, leverage (LEV) and stock price increase are positively and significantly correlated. This result demonstrates that the market gains momentum for stock price increase in proportion to a bank's level of leverage (LEV). This circumstance suggests that investors see using more debt as a way to boost the bank's ability to distribute credit and enhance its potential profitability. In a certain context, increased leverage (LEV) is perceived as a form of aggressive expansion and a signal of increased intermediation activity, so that the market responds positively to the increase in the amount of financing managed by banks.

This is in line with research conducted by Wuryani et al. (2021) and Benyamin and Endri (2019), which shows that leverage (LEV) has a positive and significant effect on stock prices, because a more aggressive funding structure can increase returns for shareholders when credit risk management is carried out properly.

The Effect of Bank Size (Assets) as a Control Variable on Stock Price Growth

The analysis's findings show that the Bank Size (Total Assets) variable has an insignificant impact on Stock Price Growth, with a probability value of 0.3858 > 0.05 (alpha 5%). According to the study's findings, bank size has no discernible impact on the growth of stock prices. As a gauge of bank size, total assets appear to be less of a determining factor for investors when it comes to stock price growth. The market does not seem to regard size to be a significant factor in stock valuation, despite the fact that larger banks are frequently thought to have a better ability to manage risk. It appears that factors that indicate profitability, asset quality, and operational efficiency are of greater interest to investors.

These results align with Sar and Panigrahi (2025), who also found that bank size as a control variable had no significant effect on stock price growth in Indian banks. In their study, although large banks are often considered more stable, size alone was not viewed as a strong signal of stock performance because factors such as Non-Performing Assets (NPA), Return on Capital Employed (ROCE), and Net Interest Margin (NIM) were more decisive for investors. These consistent findings reinforce that bank size is not a dominant factor in market valuation, both in this study and in the context of the Indian banking industry.

Thus, the following are the findings of each individual test.

Table 4
Regression t-Test Results

Independent Variable	Dependent Variable		
	Share Price Growth		
	Coefficient	Probability	Conclusion
Konstanta	-11.08562	-	-
CAR	1.135214	0.0073	Significant Positive
NPA	-0.039325	0.6770	Not Significant
CASA	0.343116	0.0465	Significant Positive
ROCE	0.257862	0.7818	Not Significant
NIM	-10.49197	0.0134	Significant Negative
LATA	-2.237377	0.4749	Not Significant
ASET	0.185348	0.3858	Not Significant
LEV	11.93657	0.0016	Significant Positive

Source: Data Analyzed, 2025

Research Regression Model

Sar and Panigrahi (2025) employed the following panel data regression model in their earlier study:

SPG = - 11.08562 + 1.135214CAR - 0.039325NPA + 0.343116CASA + 0.257862ROCE - 10.49197NIM - 2.237377LATA + 0.185348ASET + 11.93657LEV

Description:
β = Constant
β_(1-8) = Coefficient

CAR = Capital Adequacy Ratio
NNPA = Net Non Performing Asset
CASA = CASA Ratio
ROCE = Return on Capital Employed
NIM = Net Interest Margin
LATA = Liquid Asset to Total Asset
ASET = Ukuran bank
LEV = Leverage

CONCLUSION AND SUGGESTION

The test results indicate that while Net Interest Margin (NIM) has a negative and significant impact on stock price growth, the Capital Adequacy Ratio (CAR), CASA Ratio (CASA), and Leverage (LEV) have a positive and significant impact. Conversely, there is no discernible impact from Non-Performing Assets (NPA), Return on Capital Employed (ROCE), Liquid Assets to Total Assets (LATA), or Bank Size (Total Assets).

It is advised that future studies broaden the scope to encompass different financial industries, geographical areas, or longer time periods. This would make it possible for the outcomes to more accurately depict market circumstances and the dynamics of different economic cycles. Furthermore, since these variables may have a substantial impact on market performance, researchers are urged to include external variables like macroeconomic indicators (inflation, interest rates, exchange rates), market risk factors, and non-financial variables like corporate governance and banking digitization.

Future studies could also consider adding variables related to interest rate risk, exchange rate risk, and exposure to financial instruments sensitive to market volatility, as suggested by Sar and Panigrahi (2025). These variables are likely to provide additional insights into market responses to economic and global fluctuations. By incorporating these recommendations, future research is expected to offer a broader and deeper understanding of the determinants of market performance in the banking industry.

REFERENCES

Agustyawati, D., & Rais, M. (2023). The effect of financial performance on stock price (case study of food company listed on Indonesia Stock Exchange). *International Journal of Management Progress*, 5(1), 37–52.

Altman, E. I., Iwanicz-Drozdowska, M., Laitinen, E. K., & Suvas, A. (2019). Financial distress prediction in an international context: A review and empirical analysis of Altman's Z-score model. *Journal of International Financial Management & Accounting, 30*(2), 131–171. https://doi.org/10.1111/jifm.12090.

Al Zaidanin, J. (2020). A study on financial performance of the Jordanian commercial banks using the CAMEL model and panel data approach. *International Journal of Financial and Banking Studies, 9*(4), 111–130.

Anwaar, M. (2016). Impact of firms' performance on stock returns (evidence from listed companies of FTSE-100 Index London, UK). *Global Journal of Management and Business Research: Accounting and Auditing*, 16(1), 678–685.

Avramidis, P., Cabolis, C., & Serfes, K. (2018). Bank size, market power, and efficiency. *Journal of Financial Stability, 36*, 37–50. https://doi.org/10.1016/j.jfs.2018.01.002.

Banu, M., & Vepa, S. (2021). A financial performance of Indian banks using CAMELS rating system. *Journal of Contemporary Issues in Business and Government*, 27(1), 2135–2153.

Benyamin, A., & Endri, E. (2019). Determinants of stock price in Indonesian banking sector. *International Journal of Economics and Financial Issues, 9*(5), 80–87

Curado, C., Oliveira, M., Schniederjans, D. G., et al. (2024). Control variable use and reporting in operations management: A systematic literature review and revisit. *Management Review Quarterly*. https://doi.org/10.1007/s11301-024-00384-7

Christianto, Winarto, Fahar, Lestari, & Margaretha. The impact of company size, interest income and risk taking on bank performance in Indonesia. *Indonesian Interdisciplinary Journal of Sharia Economics*.

Das, S. (2017). Determinants of stock price movements: Evidence from Indian banking sector. *Asian Journal of Finance & Accounting, 9*(1), 131–147. https://doi.org/10.5296/ajfa.v9i1.10767

Fajar, Yudo, & Leon. (2025). Determinants of stock prices infrastructure on the Indonesia Stock Exchange. *Indonesian Interdisciplinary Journal of Sharia Economics*.

Ikechukwu, O. H., & Owualah, S. I. (2022). Evaluating the impact of CAMEL variables on the share price of banks in Nigeria. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 1(3), 295–308.

Karim, A., Hassan, S., & Rashid, M. (2024). Credit risk management and bank performance: Evidence from emerging markets. *Asian Economic and Financial Review*, 14(2), 112–128.

Kyere, M., & Ausloos, M. (2021). On the relationship between stock prices and return on assets: Evidence from international banks. *Physica A: Statistical Mechanics and Its Applications*, 563, 125405.

Laeven, L., Ratnovski, L., & Tong, H. (2016). Bank size, capital, and systemic risk: Some international evidence. *Journal of Banking & Finance, 69* (Suppl. 1), S25–S34.

Nguyen, A. H., Nguyen, H. T., & Pham, H. T. (2020). Applying the CAMEL model to assess performance of commercial banks: Empirical evidence from Vietnam. *Banks and Bank Systems*, 15(2), 177–186.

Nugroho, M., Halik, A., & Arif, D. (2020). Effect of CAMELS ratio on Indonesia banking share prices. *Journal of Asian Finance, Economics and Business*, 7(11), 101–106.

Odoemelam, N., Wobo, B., & Horsfall, E. (2025). Financial leverage and stock price performance of listed firms in Nigeria. *Journal of African Business, 26*(1), 88–104. https://doi.org/10.1080/15228916.2024.2301123

Rahma, A., & Ayumi, N. (2020). Leverage and bank size as determinants of financial performance in Indonesian banking industry. *Jurnal Akuntansi dan Keuangan Indonesia*, 17(2), 211–223.

Rusdiyanto, R., Hidayat, W., & Tjahjono, H. (2019). Financial ratios and stock prices: Evidence from Indonesian banking sector. *Journal of Accounting and Investment, 20*(2), 110–125.

Sar, A., & Panigrahi, K. (2025). The dynamics of financial performance and market performance in the context of Indian banking industry. *F1000Research*, 13:657.

Sarjono, H., & Suprapto, W. (2020). Capital adequacy and bank soundness: An empirical study on Indonesian banks. *Jurnal Manajemen dan Keuangan*, 9(3), 145–156.

Sakawa, H., Moriyama, K., & Watanabel, N. (2020). Bank size, efficiency, and market valuation: Evidence from Japan. *Pacific-Basin Finance Journal, 60*, 101287. https://doi.org/10.1016/j.pacfin.2020.101287

Siffin, A. (2025). Liquidity management and its impact on bank profitability: Evidence from Asian emerging economies. *International Journal of Banking and Finance Research*, 8(1), 44–59.

Wuryani, E., Handayani, S., & Mariana. (2021). The effect of financial performance and bank size on banking stock prices. *In Proceeding of International Joint Conference on Arts and Humanities* (IJCAH), 618, 975–979.