

MARKET SENTIMENT MODERATING ON BANK STOCK PRICES: COMPARATIVE EVIDENCE FROM INDONESIA AND MALAYSIA

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Abstract

This study examines the influence of volatility and interest rates on stock prices, with market sentiment as a moderating variable, in banking companies listed on the Indonesia Stock Exchange and Bursa Malaysia during the 2021–2025 period. The research employs a quantitative approach with panel data regression analysis using the Random Effect Model on 25 banking companies with 125 observations. Secondary data were collected from the Indonesia Stock Exchange, Bank Indonesia, Bursa Malaysia, and Bank Negara Malaysia. The results indicate that volatility has a positive and significant effect on stock prices, suggesting that increased market uncertainty drives investors to adjust return expectations, thereby affecting stock prices. Interest rates do not significantly affect stock prices, indicating that banks have the ability to adjust their asset and liability structures to mitigate the impact of monetary policy changes. Market sentiment does not significantly affect stock prices, suggesting that investors in the banking sector prioritize fundamental factors over short-term psychological factors. Furthermore, market sentiment does not moderate the relationships between volatility and stock prices, nor between interest rates and stock prices. Comparative analysis reveals significant differences in the relationships between volatility, interest rates, stock prices, and market sentiment conditions between Indonesia and Malaysia. These findings highlight the dominance of volatility as a key determinant of banking stock prices and the limited role of market sentiment in moderating these relationships.

Keywords: Stock Price, Volatility, Interest Rate, Market Sentiment, Banking Sector

1. Introduction

The stock market serves as one of the primary indicators reflecting a country's economic health (Bimenyimana, 2025), as stock movements provide a clear picture of investor sentiment and confidence toward broader economic conditions and future trends. When the stock market experiences an upward trend, it is often considered a positive sign that investors are optimistic about future economic growth (Bogati, 2024). Conversely, declining stock prices can trigger concern and uncertainty among investors (Faisal et al., 2021), which can subsequently influence investment decisions. Stock price movements are frequently influenced by various interrelated factors, including macroeconomic conditions (Yao, 2024), political stability (Ma et al., 2024), and global dynamics such as commodity price fluctuations (Lin & Chiang, 2025), central bank interest rate shifts (Kitsul et al., 2025), and external factors like geopolitical tensions (Gong et al., 2025).

In the Southeast Asian region, Indonesia and Malaysia are recognized as two countries with strong and diverse banking sectors. Both countries possess unique characteristics in their financial systems and bank operations, shaped by distinct histories, regulations, and investment cultures. The banking sector in Indonesia is heavily influenced by rapid



economic growth and a large population (Sari et al., 2022), while Malaysia's banking sector enjoys a more stable and internationally integrated reputation (Arifin, 2023). Data from the World Bank indicates that in 2024, the banking sectors in both countries contributed significantly to infrastructure development and access to financial services, which are essential in supporting overall economic growth (Worldbank.org, 2024). The banking sector in both countries not only plays a role in providing financial services to individuals and corporations but also has a substantial contribution to national economic development, creating employment opportunities and contributing to increased investment, both domestic and foreign. This is reflected in reports from the Investment and Down streaming Ministry/BKPM showing that during the 2020–2024 period, Foreign Direct Investment (FDI) in Indonesia's banking sector increased by an average of 20% per year, demonstrating high interest from international investors.

Figure 1 shows the Gross Domestic Product (GDP) of Indonesia and Malaysia during the 2021–2025 period. The figure illustrates the economic growth trajectory of both countries, reflecting the overall macroeconomic conditions that serve as the context for analyzing banking stock price determinants. Indonesia's GDP shows a steady increasing trend, driven by rapid economic growth and a large population, while Malaysia's GDP demonstrates more stable growth with a smaller base. This comparison highlights the distinct economic environments in which the banking sectors of both countries operate, providing the foundation for understanding how volatility, interest rates, and market sentiment influence banking stock prices. Further data indicates that the banking sector's contribution to Indonesia's Gross Domestic Product (GDP) reached approximately 6.39% in 2025, while in Malaysia it reached nearly 5.2% during the same period. This demonstrates that the banking sector plays an indispensable role in the economic growth context of both countries.

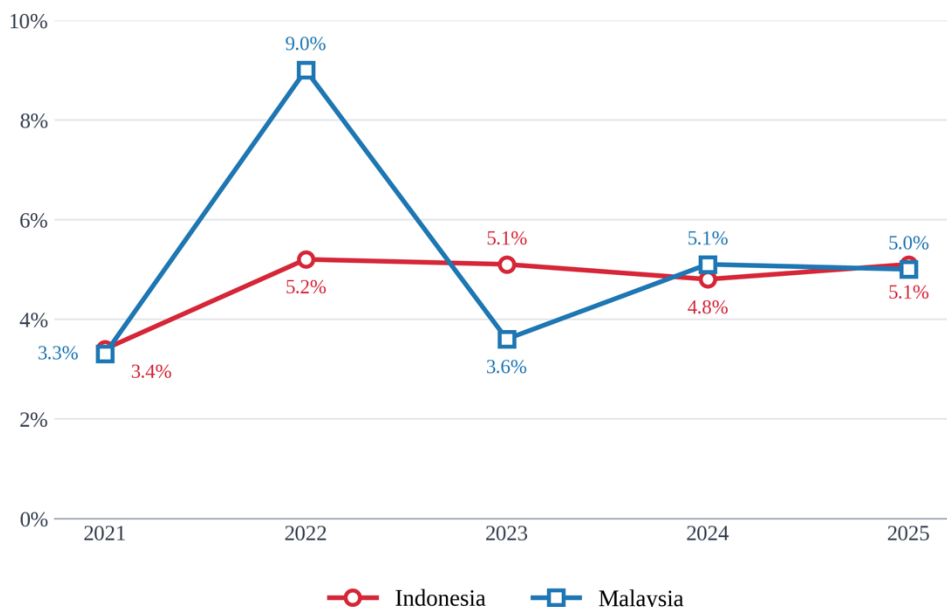


Figure 1. GDP of Indonesia and Malaysia (2021–2025)

Source: World Bank (processed data, 2025)

However, the Composite Stock Price Index throughout 2024 recorded a decline of 4.47% (Rohmah, 2025). This decline was caused by decreases in big-cap stocks, including three major bank stocks that experienced significant year-to-date price drops. These three big bank stocks are included in the top 10 market capitalization of the

Indonesia Stock Exchange, and their declines impacted the IHSG. Throughout 2024, BBRI experienced a 23% decline, BBNI fell 14%, and BMRI dropped 1%, while BBKA only rose slightly by 1%. Furthermore, generally throughout 2024, state-owned bank stock prices tended to weaken. Bank Mandiri (BMRI), BNI (BBNI), BRI (BBRI), and BTN (BBTN) recorded year-on-year stock price declines until February 2025. This decline was influenced by external sentiment such as US dollar strengthening, global economic uncertainty, trade war policies, and projections of The Fed's interest rate policy not being aggressive in monetary easing. Banking stock price declines also occurred on April 25, 2024, where BBTN weakened 1.82%, BBKA 1.76%, and BBRI 1.44% following the increase in Bank Indonesia's benchmark interest rate. Meanwhile, the development of stock prices in Malaysia's banking sector is dominated by Maybank (Malayan Banking Berhad), CIMB (CIMB Group Holdings Berhad), Public Bank (Public Bank Berhad), and Bank Islam Malaysia Berhad.

The decline in stock prices is partially influenced by volatility. Stock price volatility, often affected by various factors such as interest rates and market sentiment, is a primary concern for investors and analysts. According to Singh and Vishal (2025), stock price volatility can be influenced by external and internal factors, including interest rate changes that can affect borrowing costs and investment decisions. The stock market is not merely a place for buying and selling shares but also reflects public confidence in the economy. In the Indonesian and Malaysian context, the banking sector is often considered an economic barometer because of its role in providing liquidity and supporting economic growth. When the banking sector performs well, it can be interpreted as an indication that the overall economy is also in a stable condition.

Over the past several years, both Indonesia and Malaysia have experienced various economic changes that have affected the stock market. Megaritis et al. (2021) noted that this uncertainty often causes volatility spikes, which in turn can influence investment decisions in the banking sector. In crisis situations, many investors tend to withdraw from the stock market, which can cause drastic stock price declines, systemic risk, and financial interconnectedness in the stock market (Ça et al., 2025). Interest rates are one of the important instruments that also affect stock prices, having a significant impact on a country's economy. When interest rates change, this not only affects borrowing costs for individuals and corporations but can also impact stock market values (Kasnelly et al., 2025). Higher interest rates generally increase borrowing costs for companies (Alafif, 2023), which in turn can reduce net profits (Ardian & Sari, 2022). Interest rate increases can therefore pressure corporate profitability, which potentially lowers stock prices (Singh & Vishal, 2025). Conversely, lower interest rates can encourage economic growth by facilitating access to financing (Mohsen, 2022). Thus, the relationship between interest rates and stock prices can be viewed as two sides of the same coin.

Market sentiment plays a crucial role in influencing stock prices, as it reflects investor attitudes and perceptions toward economic conditions, politics, and company performance (Mukhsin et al., 2025). When market sentiment is positive, investors tend to be optimistic and invest more, driving stock demand. This increased demand often causes stock prices to rise, creating a snowball effect for greater investment. Conversely, negative sentiment can cause uncertainty. Bad news, such as disappointing financial reports or political instability, can cause investors to panic and sell shares (Alim et al., 2024), causing decreased demand and, consequently, lower stock prices. Additionally, investor behavior is often influenced by mass psychology or the tendency to follow what others are doing (Ahmad & Wu, 2022). If many investors are seen selling shares, others



may follow, worsening the price decline. External factors, such as global market movements, can also affect sentiment. If major stock exchanges abroad experience sharp declines, it can create uncertainty in the domestic market, even if there are no significant fundamental changes. Thus, market sentiment has a direct and substantial impact on stock prices, making it a critical component for investors to monitor.

The urgency of this research is driven by several critical factors. First, the stock market serves as a barometer of economic health, and understanding the determinants of stock prices is essential for investors, policymakers, and regulators. Second, the significant contribution of the banking sector to GDP in both Indonesia (6.39%) and Malaysia (5.2%) underscores the importance of analyzing factors affecting banking stock prices. Third, the inconsistency of previous research findings regarding the influence of volatility and interest rates on stock prices indicates a research gap that needs to be addressed. Some studies found that volatility negatively affects stock prices (Akin, 2024; Megaritis et al., 2021; Larasati et al., 2021), while others reported positive effects (Rahman et al., 2020; Zidane, 2025). Similarly, interest rates have been found to have negative effects in some studies (Mohammed, 2025; Alzoubi, 2022; Manurung & Syah, 2021) but positive effects in others (Fu & Zhang, 2025; Mishra & Pokhrel, 2020; Herdini, 2021). Fourth, the role of market sentiment as a moderating variable has not been extensively studied, particularly in the comparative context of Indonesian and Malaysian banking sectors. Fifth, the post-pandemic period (2021–2025) represents a unique context characterized by economic recovery, global uncertainty, and differing monetary policy approaches in both countries.

Previous research has shown significant but fragmented findings regarding the determinants of stock prices. Studies have demonstrated that volatility negatively affects stock prices, as volatile earnings can make it difficult for companies to obtain external funding because they are considered unstable (Akin, 2024; Megaritis et al., 2021; Larasati et al., 2021; Sadraoni, 2025; Liu et al., 2023). However, other studies have reported contradictory findings, indicating that volatility positively affects stock prices (Rahman et al., 2020; Zidane, 2025; Shlonchak, 2025). Similarly, research on interest rates has also yielded inconsistent findings. Some studies found that interest rate increases negatively impact stock markets (Mohammed, 2025; Alzoubi, 2022; Manurung & Syah, 2021; Conrad, 2021), while others reported that interest rates have a positive effect on stock prices (Fu & Zhang, 2025; Mishra & Pokhrel, 2020; Santini et al., 2025; Herdini, 2021). Furthermore, research on market sentiment has demonstrated that investor sentiment significantly influences price trends, with higher investor sentiment correlating with stock price increases (Lu, 2025; Shaukat, 2023; Chen et al., 2021). Market sentiment can also moderate stock prices, as evidenced by Bunga et al. (2024), who found that market sentiment mediates the effect of interest rates, inflation, and oil prices on stock prices. These inconsistencies suggest that the relationships among volatility, interest rates, market sentiment, and stock prices remain underexplored, particularly in the comparative context of Indonesian and Malaysian banking sectors.

The research gap in this study lies in the limited understanding of how volatility and interest rates influence stock prices with market sentiment as a moderating variable, particularly in the banking sector of Indonesia and Malaysia. While individual studies have examined the direct effects of volatility and interest rates on stock prices, the role of market sentiment as a moderating mechanism remains underexplored. Additionally, most previous studies have focused on developed markets or single-country contexts, leaving a significant gap in knowledge regarding the comparative dynamics of stock price



determinants in emerging markets such as Indonesia and Malaysia. The inconsistent findings from previous research indicate that the influence of volatility and interest rates on stock prices may be contingent on contextual factors such as market sentiment. Furthermore, empirical evidence on the determinants of banking stock prices in Indonesia and Malaysia during the post-pandemic period (2021–2025) remains limited, particularly in the context of differing monetary policy approaches and global uncertainty.

The novelty of this research lies in several aspects. First, this study focuses on the banking sector in Indonesia and Malaysia during the 2021–2025 period, representing a unique context characterized by post-pandemic economic recovery, global uncertainty, and differing monetary policy approaches. Second, this study develops an integrative model that simultaneously examines the influence of volatility and interest rates on stock prices, with market sentiment as a moderating variable, providing a more comprehensive understanding of the determinants of stock prices in the banking sector. Third, this study positions market sentiment as a moderating variable, enabling the examination of whether market sentiment strengthens or weakens the relationship between volatility, interest rates, and stock prices. Fourth, this study contributes to the limited comparative empirical evidence on stock price determinants in the banking sector of Indonesia and Malaysia, providing insights into how volatility, interest rates, and market sentiment influence banking stock prices in two emerging markets. Fifth, this study extends the application of behavioral finance theory to the context of banking stock price formation in emerging markets, validating theoretical predictions in an under-researched institutional context.

The purpose of this study is to examine the influence of volatility and interest rates on stock prices, with market sentiment as a moderating variable, in banking companies listed on the Indonesia Stock Exchange and Bursa Malaysia during the 2021–2025 period. Specifically, this research aims to analyze the effect of volatility on stock prices, analyze the effect of interest rates on stock prices, and analyze the moderating role of market sentiment in the relationships between volatility, interest rates, and stock prices. The choice of this goal was driven by the limited understanding of how volatility and interest rates collectively influence stock prices and the need for empirical evidence that can inform investors, banking institutions, policymakers, and regulators in designing effective strategies to manage stock price determinants in the banking sector.

The contribution of this research is multifaceted. From a theoretical perspective, this research contributes to the enrichment of literature on stock price determinants by extending the application of behavioral finance theory to the context of banking stock price formation in emerging markets. The findings contribute to the understanding of how volatility and interest rates influence stock prices and how market sentiment moderates these relationships, providing a more nuanced theoretical framework for analyzing stock price behavior in the banking sector. From a practical perspective, this study provides actionable insights for investors, banking institutions, policymakers, and regulators in assessing and managing stock price determinants. For investors, the findings provide guidance on which factors should be considered in making informed investment decisions. For banking institutions, the results offer insights into the factors affecting their stock valuations and the importance of managing volatility and interest rate exposure. For regulators, this study provides empirical evidence to support the development of policies to maintain market stability and protect investor interests. For policymakers, the results offer insights into the importance of monetary and fiscal policy coordination in managing stock price stability and promoting sustainable economic growth.



2. Theoretical Background

2.1 Arbitrage Pricing Theory (APT)

Arbitrage Pricing Theory (APT) is a theory developed by Stephen A. Ross in 1976. APT states that the price or return of an asset is influenced by various systematic risk factors, such as inflation rates, interest rates, and other macroeconomic factors, not just a single market factor. This theory is based on the concept of arbitrage, which is the opportunity to obtain risk-free profits by exploiting price differences of identical assets in the market (Yadav & Hegde, 2021). APT uses a factorial model that links asset returns with a number of risk factors that influence them linearly. This theory assumes that two assets with the same risk characteristics must have the same price so that there is no arbitrage opportunity that lasts long in the market. Thus, APT provides a more flexible and realistic framework in explaining the relationship between risk and asset returns in the capital market (Xiang, 2025). In this study, APT serves as the foundation for identifying and measuring various factors that potentially influence stock prices, including market volatility and interest rates. The APT model is used to select relevant factors in the analysis of their influence on stock prices. Volatility is considered as one of the factors that can affect stock returns, so APT can explore stock price fluctuations in creating additional risk for investors, and the risk that is integrated into stock prices. Interest rates are also an important factor in APT that can influence investment decisions. When interest rates rise, borrowing costs increase, and this can suppress investment and company growth, which in turn has a negative impact on stock prices. In addition, APT can help reveal how investor sentiment can strengthen or reduce the impact of volatility and interest rates on stock prices.

2.2 Stock Price

Stock price is the value formed in the capital market as a result of the interaction between demand and supply of shares by investors. Stock price becomes an indicator of assessment of the company's performance and prospects in the eyes of investors, so it is very important to study in the context of financial analysis and investment (Gunawan & Elshinta, 2025). Stock price is a very important factor and must be considered by investors in investing because the stock price shows the issuer's performance, stock price movements are in line with the issuer's performance. If the issuer has better performance, the profits that can be generated from business operations are greater, then the stock price of the issuer tends to rise. Meanwhile, according to Warisman and P (2022), stock price is a unit of value or bookkeeping in various financial instruments that refers to a share of ownership in a company or a form of company ownership in the capital market. There are two types of shares issued by companies (Brigham & Houston, 2021): common stock and preference stock. The main indicator of the dependent variable in this study is the stock closing price, because this indicator is most commonly used in empirical research and is easily accessible from historical capital market data. Closing price represents the value of the stock at the end of the trading period and is often used as a proxy to measure stock performance in the market.

2.3 Volatility

Stock price volatility is generally defined as the magnitude of stock price changes within a certain period, both in positive and negative directions (Shikder et al., 2025). High volatility indicates significant risk and uncertainty in the market, so investors tend to be more cautious in making investment decisions (Karanasos et al., 2022). Volatility



is an indicator of uncertainty associated with asset returns (Megaritis et al., 2021), plays an important role in various financial fields as a measure of uncertainty, and is a key factor in investment portfolios, derivative pricing, and risk management (Salisu, 2022; So et al., 2022). Volatility has four common characteristics: (1) variance of the series differs between high and low at different periods, creating "volatility clusters"; (2) volatility spikes are rare because volatility evolves continuously; (3) volatility varies within some fixed range and does not diverge to infinity; and (4) large price declines appear to have a greater impact on volatility than price increases of the same magnitude, indicating an asymmetric effect. In the context of the banking sector on the Indonesia Stock Exchange (IDX) and Bursa Malaysia, stock price volatility is influenced by various internal and external factors, such as company financial performance, dividend policy, company size, as well as macroeconomic factors such as interest rates, exchange rates, and global economic conditions (Lasut et al., 2025). Stock price volatility is generally measured using the standard deviation of daily or monthly returns, or using statistical models such as GARCH.

2.4 Interest Rates

Interest rate is the rate of return that must be paid by the borrower for the use of funds borrowed within a certain period (Solikha Puji Astuti et al., 2022). In the context of the capital market, interest rates play a role as one of the main macroeconomic factors that affect stock prices (Wijianto & Hartono, 2023). Changes in interest rates can affect the company's cost of capital, consumer purchasing power, and investor expectations, thus having a direct impact on stock price movements. In the banking sector which is highly dependent on credit and funding activities, interest rates have a complex influence on stock prices. An increase in interest rates usually increases bank interest income from loans provided, but on the other hand can suppress credit demand and increase funding costs, thus creating uncertainty and stock price volatility. Conversely, a decrease in interest rates can encourage credit growth and increase positive investor sentiment towards banking stocks. Interest rates are usually measured using the benchmark interest rate of Bank Indonesia (BI Rate) or the interbank money market interest rate (SBI). In Malaysia, interest rates are usually measured using the Overnight Policy Rate (OPR) from Bank Negara Malaysia (BNM) as the main reference rate.

2.5 Market Sentiment

Market sentiment is a moderating variable in this study, which serves to strengthen or weaken the relationship between volatility, interest rates, and stock prices. Market sentiment is defined as the collective attitude of investors towards the market or a particular stock, reflected in market psychology (optimism/pessimism) and trading activity (Wang, 2023). Positive sentiment (optimism) tends to increase stock demand, while negative sentiment (pessimism) triggers mass selling, thus affecting stock prices. In modern capital markets, investor sentiment is one of the important variables that influence stock market price fluctuations, stock price changes, and stock returns (Wang, 2023). Stock market sentiment reflects investors' views and feelings about market conditions. Common market sentiments include: (1) Bullish, where investors are optimistic, confident that stock prices will rise, encouraging buying and high trading volume; (2) Bearish, where investors are pessimistic, fearful, tend to sell, causing prices to fall; and (3) Neutral, where the market does not show a clear direction (Hu et al., 2021; Liu et al., 2023).



2.6 Hypothesis Development

2.6.1 The Influence of Volatility on Stock Prices

Stock price volatility is widely considered as one of the factors that erode investor confidence in world money markets. Stock prices fluctuate dramatically depending on various factors. Knowledge of these factors and their potential impact on stock prices is valuable because it allows investors to make informed investment decisions and companies to increase their market value. Akin (2024), Megaritis et al. (2021), Sadraoni (2025), Liu et al. (2023), and Larasati et al. (2021) found that volatility has a negative effect on stock prices. Investors tend to avoid high risk, especially in conditions where product price volatility and stock returns are minimal. When risk is not comparable to potential returns, investors tend to focus on more stable assets, creating a downward price cycle. Based on this description, the following hypothesis is proposed: *H1: Volatility affects Stock Prices*

2.6.2 The Influence of Interest Rates on Stock Prices

Interest rates can affect a company's cost of capital; when interest rates rise, borrowing costs also increase, which can hinder expansion and investment. This has the potential to reduce profits and, in turn, put pressure on stock prices. In addition, stock prices are often valued based on the present value of future cash flows. When interest rates rise, the discount rate used to calculate the value will also increase, resulting in a decrease in the value of expected cash flows. Mohammed (2025), Manurung and Syah (2021), Alafif (2023), Singh and Vishal (2025), and Alzoubi (2022) argue that interest rate increases negatively impact stock indices. Based on this description, the following hypothesis is proposed: *H2: Interest Rates affect Stock Prices*

2.6.3 The Influence of Market Sentiment on Stock Prices

Market sentiment has a significant influence on stock investment decisions, thus can increase stock prices. Market sentiment measured through inflation, rupiah exchange rate against the dollar, and oil prices has a negative relationship with stock prices. Stock prices are formed by demand and supply which are greatly influenced by investor perceptions and expectations. Good performance or positive signals form optimistic sentiment and drive prices up, while negative signals and macro uncertainty weaken sentiment and suppress prices. Based on this description, the following hypothesis is proposed: *H3: Market Sentiment affects Stock Prices*

2.6.4 Market Sentiment Moderates the Influence of Volatility on Stock Prices

Market sentiment has a similar influence on stock market price volatility, and stock price volatility will react to market sentiment and form an interactive impact, which will gradually weaken over time. Market sentiment has a significant impact on stock market returns, and this impact in bullish stock markets is significantly higher than in bearish stock markets, so shocks to stock market returns on investor sentiment and stock market volatility are relatively significant, where shocks to stock market volatility have a significant effect on stock market returns (Hu et al., 2021). Market sentiment provides a significant positive influence on actual, continuous, and jump volatility, where market sentiment can explore the mediating effect of information asymmetry measured by the probability of informed trading synchronized with volume (VPIN), on the path of investor sentiment affecting stock prices. Based on this description, the following hypothesis is proposed: *H4: Market Sentiment moderates the influence of Volatility on Stock Prices*



2.6.5 Market Sentiment Moderates the Influence of Interest Rates on Stock Prices

High interest rates have a negative effect on stock prices in the market. Stock market performance is highly elastic to market sentiment. A 1% increase/decrease causes almost a 4% increase/decrease in stock prices. If the central bank targets price stability by raising interest rates when inflation is high, its actions have a negative impact on the stock market. Central banks should be careful before raising interest rates because of their highly negative relationship with the stock market (Alzoubi, 2022). Real interest rate increases have a negative impact on stock prices due to losses and market sentiment. Conversely, higher consumer confidence tends to positively influence the stock market, driven by herding behavior and optimism. In addition, market volatility shows a negative correlation with changing market sentiment (Akin, 2024). Based on this description, the following hypothesis is proposed:

H5: Market Sentiment moderates the influence of Interest Rates on Stock Prices

2.6.6 Differences in the Influence of Volatility and Interest Rates on Stock Prices Based on Market Sentiment Conditions in Indonesia Compared to Malaysia

In Indonesia, market volatility is often influenced by domestic factors such as changing government policies and regulations. Interest rates set by Bank Indonesia can affect borrowing costs, thus impacting banking performance. Market sentiment tends to be more reactive to political and social news. Meanwhile, in Malaysia, the market tends to be more stable and less volatile. Monetary policy by Bank Negara Malaysia is more consistent, and the influence of interest rates may not be as strong as in Indonesia. Market sentiment in Malaysia is more influenced by international factors, such as commodity prices, given the large economic dependence on exports. Thus, the influence of these three factors shows significant differences between the two countries. In the framework of Arbitrage Pricing Theory (APT), stock prices are influenced by various systematic risk factors such as volatility and interest rates, so the interrelationship between variables in this study can be explained logically. Based on this description, the following hypothesis is proposed:

H6: There are differences in the influence of Volatility and Interest Rates on Stock Prices based on Market Sentiment conditions in Indonesia compared to Malaysia

3. Methods

3.1 Research Design

This study employs a quantitative approach with an associative-causal design to examine the effect of volatility and interest rates on stock prices, with market sentiment as a moderating variable, in banking companies listed on the Indonesia Stock Exchange (IDX) and Bursa Malaysia during the 2021–2025 period. The quantitative approach is considered appropriate because the study aims to empirically test the proposed hypotheses using statistical analysis of numerical data derived from stock price data, interest rate data, and market sentiment indicators. The associative-causal research design enables the examination of causal relationships between independent variables (Volatility and Interest Rates), moderating variable (Market Sentiment), and dependent variable (Stock Prices). This study is descriptive and explanatory in nature, explaining the relationships between variables and the extent to which these variables influence each other. The type of data used is secondary data, including stock prices, interest rates from banks in Indonesia and Malaysia, and market sentiment data obtained from official sources and capital market research institutions.



3.2 Population and Sample

The population in this study consists of all banking companies listed on the Indonesia Stock Exchange (IDX) totaling 47 companies and Bursa Malaysia (KLSE) totaling 10 companies during the 2021–2025 period. The banking sector was selected due to its significant contribution to the economy, its role as an economic barometer, and its sensitivity to macroeconomic factors such as interest rates and market volatility. The sample was selected using purposive sampling with the following criteria: (1) companies consistently listed on the IDX and KLSE during the 2021–2025 period; (2) actively traded without prolonged suspension; (3) complete monthly and annual stock price data available; (4) financial statements available during the 2021–2025 period; (5) market sentiment data available, including trading volume or news-based sentiment indices; (6) no delisting during the observation period; and (7) no extreme corporate actions that could bias stock prices. Based on these criteria, the final sample includes 19 banking companies from Indonesia and 6 banking companies from Malaysia, resulting in 125 observations (25 companies × 5 years).

Table 1. Sample Determination

Description	Indonesia	Malaysia
Consistently listed on the Stock Exchange 2021–2025	47	10
Not fully listed during the research period	(8)	(0)
Incomplete trading data	(5)	(2)
Low liquidity	(4)	(1)
Insufficiently reflecting market sentiment	(7)	(0)
Incomplete moderating variable data	(4)	(1)
Total Sample	19	6

Source: Processed data (2026)

3.3 Data Collection Techniques

This study uses secondary data obtained from various official sources. Data were collected from the Indonesia Stock Exchange (IDX), Bank Indonesia, Central Bureau of Statistics, Financial Services Authority (OJK), Bursa Malaysia, and other relevant official sources. The data collection procedure involved several sequential steps: (1) identification of banking companies listed on the IDX and KLSE during the 2021–2025 period; (2) selection of companies meeting the predetermined purposive sampling criteria; (3) collection of stock price data from historical capital market data; (4) collection of interest rate data from Bank Indonesia and Bank Negara Malaysia; (5) collection of market sentiment data from various sources including Consumer Confidence Index (CCI), trading volume, and media sentiment analysis; and (6) documentation of all extracted data systematically organized into a panel dataset suitable for statistical analysis. The secondary data sources employed in this research are considered reliable as they represent official publications from authorized institutions and established data providers.

3.4 Operational Definition of Variables

Table 2. Operational Definition and Measurement of Variables

Variable	Type	Definition	Measurement	Scale	Source
Stock Price (Y)	Dependent	Market value of shares formed by demand and	$R_t = \ln(P_t/P_{t-1})$	Ratio	IDX, Bursa Malaysia



Variable	Type	Definition	Measurement	Scale	Source
		supply interaction			
Volatility (X ₁)	Independent	Magnitude of stock price changes within a certain period	GARCH model: $\sigma_t^2 = \omega + \sum \alpha_i \varepsilon_{t-i}^2 + \sum \beta_j \sigma_{t-j}^2$	Ratio	Historical data IDX, Bursa Malaysia
Interest Rates (X ₂)	Independent	Rate of return paid by borrower for use of funds	$i = (F - P)/P \times 100\%$	Ratio	Bank Indonesia, Bank Negara Malaysia
Market Sentiment (Z)	Moderating	Collective attitude of investors towards the market	CCI = (Present Situation Index + Expectations Index)/2	Ratio	BPS, BI, BNM, MIER

Source: Developed for this research (2026)

3.5 Data Analysis Techniques

Data analysis in this study was conducted using panel data regression with the assistance of statistical software. The analysis stages included descriptive statistics, panel data model selection, classical assumption tests, multiple linear regression analysis, moderated regression analysis, and hypothesis testing. Descriptive statistics were employed to describe the characteristics of the research data, including mean, median, standard deviation, minimum, and maximum values for all variables examined in the study. The selection of the appropriate panel data regression model was carried out through three main stages. First, the Chow test was conducted to compare whether the Common Effect Model (CEM) or Fixed Effect Model (FEM) was the better model to use; if the probability value was less than 0.05, FEM was selected over CEM. Second, the Hausman test was conducted to determine whether the best model was FEM or Random Effect Model (REM); if the probability value was less than 0.05, FEM was selected over REM. Third, the Lagrange Multiplier test was conducted to confirm whether REM was more appropriate than CEM; if the probability value was less than 0.05, REM was selected over CEM.

Prior to hypothesis testing, classical assumption tests were conducted to ensure that the regression model satisfied the required assumptions so that the estimation results were more reliable. The tests included the normality test using Jarque-Bera to examine whether residuals were normally distributed, where a probability value greater than 0.05 indicated a normal distribution; the multicollinearity test using Variance Inflation Factor (VIF) to detect high correlations among independent variables, where a VIF value less than 10 indicated no multicollinearity; the heteroscedasticity test using the White test to examine whether residuals had constant variance, where a probability value greater than 0.05 indicated no heteroscedasticity; and the autocorrelation test using the Breusch-Godfrey LM test to detect serial correlation, where a probability value greater than 0.05 indicated no autocorrelation.



Multiple linear regression analysis was conducted to examine the effect of volatility and interest rates on stock prices. The regression model used in this study was formulated as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 Z + \varepsilon$$

Where:

Y = Stock Price
α = Constant
β₁–β₃ = Regression coefficients
X₁ = Volatility
X₂ = Interest Rates
Z = Market Sentiment
ε = Error term

Hypothesis testing was conducted using several methods. The F-test was used to examine the simultaneous effect of independent variables on Stock Prices. The t-test was used to determine the partial effect of each independent variable on Stock Prices. The coefficient of determination (R²) was used to determine the model's ability to explain variations in Stock Prices. Additionally, comparative analysis using the t-test or ANOVA was conducted to examine differences in the influence of volatility and interest rates on stock prices based on market sentiment conditions in Indonesia compared to Malaysia. All hypothesis tests were conducted at a significance level of 5% (p < 0.05).

4. Results and Discussion

4.1 Descriptive Statistics

Table 2. Descriptive Statistics of Research Variables

Variable	N	Mean	Median	Maximum	Minimum	Std. Dev.
Stock Price	125	2,014.91	1,340.00	10,150.00	3.71	2,521.25
Volatility	125	20.549	18.6	92.4	1.98	13.977
Interest Rate	125	4.518	5.5	6	1.75	1.403
Market Sentiment	125	122.634	123.8	155	92	11.018

Source: Processed data (2026)

Table 2 presents the descriptive statistics for all research variables. The data shows considerable heterogeneity, particularly in the stock price variable with a mean of 2,014.91, ranging from 3.71 to 10,150.00, and a standard deviation of 2,521.25, indicating differences in characteristics among banking companies in Indonesia and Malaysia. Meanwhile, stock volatility has a mean of 20.549 with a standard deviation of 13.977, indicating relatively large variations in risk levels among banks. In contrast, interest rates show low dispersion (mean 4.518; SD 1.403), suggesting that the impact of monetary policy tends to be uniform across banks. Market sentiment, with a mean of 122.634 and a standard deviation of 11.018, indicates that investor optimism remained relatively stable during the research period.

4.2 Panel Data Model Selection

The selection of the appropriate panel data regression model is carried out through three main stages: the Chow Test, the Hausman Test, and the Lagrange Multiplier (LM) Test.

Table 3. Panel Data Model Selection Test Results

Test	Statistic	d.f.	Prob.	Conclusion
Chow Test	27.734	(24,97)	0.0000	FEM > CEM



Test	Statistic	d.f.	Prob.	Conclusion
Hausman Test	6.004	3	0.111	REM > FEM
LM Test	150.097	-	0.0000	REM > CEM

Source: Processed data (2026)

Table 3 shows the results of a series of panel data model selection tests. The Chow Test produced a probability value of $0.0000 < 0.05$, indicating that the Fixed Effect Model (FEM) is more appropriate than the Common Effect Model (CEM). The Hausman Test produced a probability value of $0.111 > 0.05$, indicating that the Random Effect Model (REM) is more appropriate than FEM. The Lagrange Multiplier Test produced a Breusch-Pagan value of $0.0000 < 0.05$, confirming that REM is more appropriate than CEM. Based on these results, the Random Effect Model (REM) was selected as the most appropriate estimation model for this study.

4.3 Classical Assumption Tests

Table 4. Classical Assumption Test Results

Multicollinearity	Volatility	Interest Rate	Market Sentiment
Volatility	1.000000		
Interest Rate	0.183991	1.000000	
Market Sentiment	-0.058269	0.419774	1.000000
Normality (Jarque-Bera)			0.623
Heteroscedasticity			0.194
Autocorrelation (DW)			1.649

Source: Processed data (2026)

Table 4 shows the results of classical assumption tests. The multicollinearity test results show all correlation values below 0.80, with the highest correlation of 0.420 between interest rates and market sentiment, indicating no multicollinearity problem. The normality test shows a Jarque-Bera probability of 0.623 (> 0.05), indicating that residuals are normally distributed. The heteroscedasticity test shows a probability of 0.194 (> 0.05), indicating no heteroscedasticity problem. The autocorrelation test shows a Durbin-Watson value of 1.649, which is close to 2, indicating no significant autocorrelation problem.

4.4 Hypothesis Testing

Table 5. Panel Data Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Result
C	97.924	1113.471	0.088	0.930	
Volatility	59.465	15.158	3.923	0.000	H1 Accepted
Interest Rate	101.383	103.514	0.979	0.329	H2 Rejected
Market Sentiment	3.529	7.954	0.444	0.658	H3 Rejected
R-squared	0.111				
Adjusted R-squared	0.089				
F-statistic	5.034				
Prob(F-statistic)	0.003				

Source: Processed data (2026)

Based on the panel data regression results presented in Table 5, the regression equation of this study can be formulated as follows:

$$\text{Stock Price} = 97.924 + 59.465 (\text{Volatility}) + 101.383 (\text{Interest Rate}) + 3.529 (\text{Market Sentiment})$$



Based on the regression results presented in Table 5, the analysis was conducted using the Random Effect Model (REM), which was selected as the most appropriate panel estimation model. The results indicate that volatility has a positive and significant effect on stock prices ($t = 3.923$; $p = 0.000$), while interest rates ($p = 0.329$) and market sentiment ($p = 0.658$) do not show significant effects. The Adjusted R-squared value of 0.089 indicates that 8.9% of the variation in stock prices is explained by the independent variables, while the remaining 91.1% is explained by other factors outside the model. The F-statistic probability value of 0.003 confirms that the regression model is statistically significant.

Table 6. Moderated Regression Analysis (MRA) Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15776.152	11674.967	1.351	0.179
Volatility	619.783	408.694	1.516	0.132
Interest Rate	2351.905	3376.729	0.697	0.487
Market Sentiment	111.294	95.086	1.170	0.244
Volatility $\times$ Sentiment	-4.789	3.344	-1.432	0.155
Interest Rate $\times$ Sentiment	-13.115	27.682	-0.474	0.637

Source: Processed data (2026)

Table 6 shows that market sentiment does not moderate the effect of volatility on stock prices ($\beta = -4.789$; $p = 0.155$) nor the effect of interest rates on stock prices ($\beta = -13.115$; $p = 0.637$). Both interaction coefficients are negative and not statistically significant ($p > 0.05$), indicating that market sentiment does not strengthen or weaken the relationships examined.

Table 7. Comparative Analysis Results

Variable	Indonesia	Malaysia	Chi-Square	Sig.
Stock Price	13,678.579	43.263		
Volatility	130.919	93.9		
Interest Rate	26.079	13.5		
Market Sentiment	614.8	608		
Pearson Chi-Square			6510.920	0.000

Source: Processed data (2026)

Table 7 shows the comparative analysis between Indonesia and Malaysia. The Pearson Chi-Square value of 6510.920 ($p < 0.001$) indicates significant differences in the relationships between volatility, interest rates, stock prices, and market sentiment conditions in the banking sectors of Indonesia and Malaysia.

4.5 Discussion

4.5.1 The Effect of Volatility on Stock Prices

The results show that volatility has a positive and significant effect on stock prices ($t = 3.923$; $p = 0.000$). This finding is consistent with recent studies demonstrating that market volatility is a primary determinant of banking stock price movements, particularly in developing countries with relatively dynamic market characteristics. The influence of market volatility on stock prices can be explained through the risk-return trade-off perspective and the Efficient Market Hypothesis (EMH), which states that increased market uncertainty drives investors to adjust return expectations and investment decisions, thereby affecting stock prices. High volatility reflects the intensity of new



information and changes in risk perception, causing stock price fluctuations to become larger. Within the Arbitrage Pricing Theory (APT) framework, volatility is one of the systematic risk factors that affects stock returns. When volatility increases, the risk borne by investors also rises, so stock prices adjust as a reflection of the risk-return trade-off.

4.5.2 The Effect of Interest Rates on Stock Prices

The results show that interest rates do not have a significant effect on stock prices ($p = 0.329$). This finding can be interpreted that banks in Indonesia and Malaysia have the ability to adjust their asset and liability structures, so the impact of interest rate changes on profitability and stock prices is relatively small. This result supports recent research findings that the effect of interest rates on the stock market is sectoral and depends on industry characteristics and ongoing macroeconomic conditions. However, this result differs from studies that found that interest rate increases significantly suppress stock returns due to increased capital costs and changes in investment preferences (Alzoubi, 2022). These differences indicate that the relationship between interest rates and stock prices is contextual and influenced by the market conditions of each country. Within the APT framework, interest rates are a major macroeconomic factor affecting capital costs and company cash flows. The difference in results between Indonesia and Malaysia reinforces the APT view that stock price sensitivity to risk factors depends on market conditions and industry characteristics.

4.5.3 The Effect of Market Sentiment on Stock Prices

The results show that market sentiment does not have a significant effect on stock prices ($p = 0.658$). This finding indicates that investors in the banking sector in Indonesia and Malaysia consider fundamental factors and macroeconomic conditions more than short-term psychological factors. In other words, although market sentiment can influence investment decisions, its influence is not strong enough to directly change stock prices when company characteristics and industry conditions have been accounted for in the model.

4.5.4 The Moderating Role of Market Sentiment on Volatility and Stock Prices

The results show that market sentiment does not moderate the effect of volatility on stock prices ($\beta = -4.789$; $p = 0.155$). This finding indicates that the influence of volatility on banking stock prices in Indonesia and Malaysia is more influenced by fundamental factors and macroeconomic conditions than by psychological factors, consistent with the perspective of efficient markets and recent studies on financial market behavior. This finding differs from research stating that investor sentiment can strengthen price fluctuations and stock volatility through behavioral finance and information asymmetry mechanisms. This difference can be explained by the characteristics of the banking sector, which has strict regulations, prudential supervision, and relatively high information transparency, which can dampen the influence of short-term market sentiment. Theoretically, this finding extends the APT framework, where systematic risk factors such as volatility are more dominant than psychological factors, consistent with the characteristics of the banking sector, which is tightly regulated and transparent.

4.5.5 The Moderating Role of Market Sentiment on Interest Rates and Stock Prices

The results show that market sentiment does not moderate the effect of interest rates on stock prices ($\beta = -13.115$; $p = 0.637$). This finding indicates that the price formation



mechanism of banking stocks is more influenced by fundamental information and macroeconomic conditions than by investor psychological factors, consistent with the view that information transparency can reduce distortions caused by investor sentiment. This finding differs from research showing that investor sentiment can increase market volatility through behavioral finance mechanisms and emotion-based trading, especially during economic uncertainty. This difference can be explained by the characteristics of the banking industry, which has higher levels of regulation, supervision, and information disclosure compared to other sectors, thereby reducing the influence of noise trading and information asymmetry. From a theoretical perspective, these results show that the effectiveness of behavioral finance theory in explaining stock prices is contextual and influenced by industry characteristics and the quality of the information environment.

4.5.6 Differences in the Influence of Volatility and Interest Rates on Stock Prices Based on Market Sentiment Conditions in Indonesia Compared to Malaysia

The comparative analysis results show significant differences in the impact of volatility and interest rates on stock prices based on market sentiment conditions in Indonesia and Malaysia (Pearson $\chi^2 = 6510.920$; $p < 0.001$). This finding indicates that banking market responses in both countries are influenced by different market characteristics and investor behavior, so the effects of macroeconomic variables are not homogeneous. The Indonesian banking market offers higher profit potential but is also accompanied by greater risk levels due to market volatility. In contrast, Malaysian banking stocks show more stable and consistent growth trends, reflecting more mature market characteristics with relatively low risk levels. From an investment perspective, the Indonesian banking market is more attractive to investors with high risk tolerance, while Malaysian banking is more suitable for investors who prioritize stability and long-term growth. These differences also reflect differences in market structure, liquidity levels, and macroeconomic conditions between the two countries.

5. Conclusion

This study examines the influence of volatility and interest rates on stock prices, with market sentiment as a moderating variable, in banking companies listed on the Indonesia Stock Exchange and Bursa Malaysia during the 2021–2025 period. Using panel data regression with the Random Effect Model (REM) on 25 banking companies with 125 observations, the results show that volatility has a positive and significant effect on stock prices, indicating that increased market uncertainty drives investors to adjust return expectations and investment decisions, thereby affecting stock prices. This finding supports the risk-return trade-off perspective and the Efficient Market Hypothesis, confirming that volatility serves as a primary determinant of banking stock price movements. Interest rates do not have a significant effect on stock prices, suggesting that banks in Indonesia and Malaysia possess the ability to adjust their asset and liability structures, making the impact of interest rate changes on profitability and stock prices relatively small. Market sentiment does not significantly affect stock prices, indicating that investors in the banking sector prioritize fundamental factors and macroeconomic conditions over short-term psychological factors. Furthermore, market sentiment does not moderate the relationship between volatility and stock prices, nor between interest rates and stock prices, suggesting that the price formation mechanism of banking stocks is more influenced by fundamental information and macroeconomic conditions than by investor psychological factors. The comparative analysis reveals significant differences in the



relationships between volatility, interest rates, stock prices, and market sentiment conditions between Indonesia and Malaysia, indicating that banking market responses in both countries are influenced by different market characteristics and investor behavior.

The theoretical implications of this study contribute to the enrichment of literature on stock price determinants by extending the application of Arbitrage Pricing Theory (APT) to the context of banking stock price formation in emerging markets. The significant positive effect of volatility on stock prices supports APT, confirming that volatility is a systematic risk factor that affects stock returns and is reflected in stock prices as a risk-return trade-off. The non-significant effect of interest rates on stock prices suggests that the relationship between interest rates and stock prices is contextual and depends on industry characteristics and market conditions, reinforcing the APT view that stock price sensitivity to risk factors varies across contexts. The non-significant effect of market sentiment challenges the behavioral finance perspective, indicating that the banking sector's strict regulations, prudential supervision, and high information transparency dampen the influence of short-term psychological factors. The non-significant moderating role of market sentiment suggests that the effectiveness of behavioral finance theory in explaining stock prices is contextual and influenced by industry characteristics and the quality of the information environment.

From a practical perspective, investors should consider volatility as a key factor in assessing banking stock price movements, particularly in emerging markets where market dynamics are more pronounced. Banking institutions should maintain transparency and information disclosure to reduce information asymmetry and dampen the influence of short-term market sentiment on stock prices. Policymakers, particularly central banks in Indonesia and Malaysia, should recognize that the impact of interest rate changes on banking stock prices may be limited due to banks' ability to adjust their asset and liability structures. Regulators should continue to strengthen prudential supervision and information transparency in the banking sector to maintain market stability and investor confidence. Investors should combine fundamental analysis with market risk assessment when making investment decisions, as volatility plays a more significant role than market sentiment in determining banking stock prices.

This study has several limitations. First, the analysis is limited to the banking sector, which may restrict the generalizability of findings to other sectors with different characteristics and regulatory environments. Second, the observation period of five years (2021–2025) may not capture longer-term trends and structural changes in stock price determinants. Third, the study focuses solely on volatility, interest rates, and market sentiment, without considering other potential determinants of stock prices such as inflation, exchange rates, corporate governance, or company-specific factors. Fourth, the measurement of market sentiment using the Consumer Confidence Index may not fully capture the complexity of investor sentiment, as other dimensions such as media sentiment and trading volume indicators are also important. Fifth, the relatively small sample size of 25 companies may limit the statistical power and generalizability of findings. Sixth, the low explanatory power of the model (Adjusted $R^2 = 8.9\%$) indicates that there are other significant factors affecting stock prices that were not included in this study.

Future research should broaden the scope by including other sectors or cross-country comparisons to enhance generalizability and capture variations in stock price determinants across different economic and regulatory contexts. It would also be valuable to integrate additional variables such as inflation, exchange rates, corporate governance,



profitability, and company-specific factors to provide a more comprehensive understanding of stock price determinants. Employing longer observation periods or higher frequency data could strengthen causal inference and provide deeper insights into the temporal dynamics of stock price movements. Future studies may further examine other moderating variables, such as institutional ownership, regulatory quality, or market maturity, to provide deeper understanding of the relationship between macroeconomic factors, market sentiment, and stock prices in emerging markets. Finally, qualitative research approaches, such as interviews with investors and financial analysts, could provide richer insights into the decision-making processes underlying stock price formation and the practical application of market sentiment in investment decisions.

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