

CHAPTER I

INTRODUCTION

1.1 Research Background

Financial markets play a crucial role in the global economy by facilitating capital allocation and investment. Among various financial institutions, banking holds particular significance due to its direct impact on economic stability and financial intermediation. One of the key factors monitored by investors, regulators, and policymakers in financial markets is volatility, which measures asset price fluctuations over a given period. Accurate volatility forecasting is essential for risk management, portfolio optimization, and economic policy formulation.

Between 2014 and 2024, volatility in Indonesia's stock market was influenced by a blend of domestic political cycles, macroeconomic variables, and global market spillovers (Nurlita & Naomi, 2019). More recently, analysis from 2004 to 2023 showed that general elections typically led to increased stock market activity and price fluctuations, with GARCH models effectively capturing these volatility patterns (Hamdani et al., 2024). From a structural standpoint, macroeconomic factors such as firm size and trading volume significantly influenced stock volatility from 2014 to 2018, while inflation and exchange rates showed less consistent effects (Handayani Heny et al., 2018). Additionally, during global disruptions like the COVID-19 pandemic, volatility increased sharply across sectors, including in Indonesia's Sharia-compliant technology stocks, as captured through GARCH-based analyses from 2019 to 2023 (Bimantoro & Yasin, 2025). This decade-long pattern reflects a stock market highly sensitive to political and external shocks, underlining the relevance of advanced volatility modeling in the Indonesian context.



Figure 1 BBCA Stock Price Graph
Source: Trading View (2025)

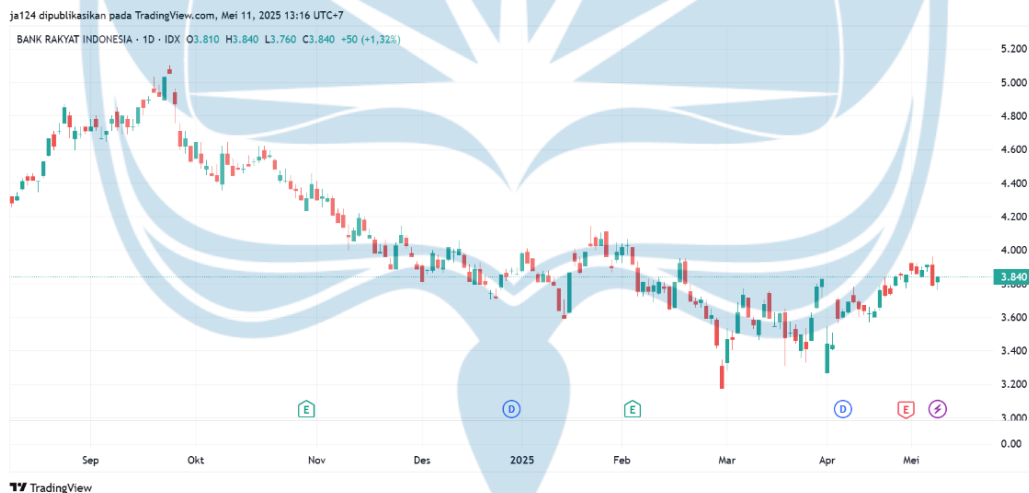


Figure 2 BBRI Stock Price Graph
Source: Trading View (2025)



Figure 3 BMRI Stock Price Graph

Source: Trading View (2025)



Figure 4 BBRI Stock Price Graph

Source: Trading View (2025)

In Indonesia, the banking sector plays a dominant role in the financial system, particularly banks categorized under the KBMI 4. These banks are PT Bank Central Asia Tbk (BBCA), PT Bank Rakyat Indonesia (BBRI) Tbk, PT Bank Negara Indonesia (BBNI) Tbk, and PT Bank Mandiri Tbk (BMRI) that hold substantial asset bases and

contribute significantly to economic development and financial stability. However, KBMI 4 stocks have recently experienced sharp declines in 2025. Shares of BBRI dropped by 41.05%, from Rp5,700 at the beginning of 2024 to Rp3,360 per share in 2025. Similarly, BBNI weakened by 29.91%, from Rp5,750 to Rp4,030 per share. Meanwhile, BBKA declined by 24.7%, falling from its all-time high of Rp10,325 to Rp7,775 per share. BMRI also fell by 39.17%, from its all-time high of Rp7,250 in 2024 to Rp4,410 per share in 2025.

The decline in the stock performance of KBMI 4 was deeply rooted in domestic political and institutional developments that unsettled investor sentiment. A key turning point was the heightened uncertainty surrounding President elect Prabowo Subianto's economic direction, particularly in light of proposed revisions to the Military Law that raised alarms about the potential expansion of military influence in civilian and economic domains (Sultan Tempo, 2025). This policy direction, coupled with the controversial plan to establish a sovereign wealth fund named "Danantara," which would assume control of strategic state-owned assets including those of BMRI, BBRI, and BBNI, sparked widespread concerns among investors (Maybank, 2025). Many questioned the transparency, governance, and long-term strategic vision of this fund, fearing it could compromise the operational independence and profitability of these major banks.

Table 1: USA's Tariff War

Country	USA Tariff	Update
China	245%	April 2, 2025
Vietnam	46%	April 9, 2025
Indonesia	32%	April 2, 2025
Malaysia	24%	April 9, 2025
India	26%	April 2, 2025

Uni Eropa	20%	April 9, 2025
Jepang	24%	April 3, 2025
Korea Selatan	25%	April 3, 2025
Kanada	25%	March 4, 2025
Meksiko	25%	March 4, 2025
Australia	10%	April 5, 2025
Inggris Raya	10%	April 5, 2025
Singapore	10%	April 5, 2025

Source: Collect from Various Resources (2025)

The trade tensions have further amplified market instability. When a tariff war occurs, it can triggers significant market volatility. Indonesia was not immune to these external pressures. A 32% tariff imposed by the United States on Indonesian goods, along with a much steeper 245% tariff on Chinese imports, further exacerbated existing vulnerabilities in the domestic economy. When the economy weakens, the financial sector particularly banking, as represented by the KBMI 4 index is usually the first to be impacted, given its role in credit distribution, liquidity, and financial intermediation.



Figure 5 JKSE Stock Price Graph

Source: Trading View (2025)

The resulting loss of market confidence was starkly reflected in the sharp drop of the Jakarta Composite Index (JKSE), which plunged over -8% on March 18, 2025, triggering a temporary trading halt. These developments underscored a broader crisis of confidence in the country's economic outlook. In the first quarter of 2025, the tariff war sparked by the United States' import tariff policies intensified global financial market uncertainty, disrupted trade governance, and affected cross border investment flows. As a result, businesses and investors increasingly adopted a risk-averse stance. Capital flows began shifting from the U.S. toward safer assets and safe haven countries. Meanwhile, capital outflows from emerging markets persisted, contributing to the depreciation of currencies across developing nations including Indonesia (Media Keuangan, 2025).

What makes this downturn particularly alarming is its similarity to the stock market collapse experienced during the COVID-19 pandemic. In 2020, the global banking sector faced immense pressure due to economic contractions, declining consumer confidence, and heightened uncertainty. While the 2025 crash has occurred

in a period without a pandemic, the magnitude of stock declines suggests that other macroeconomic and financial risks are at play. Factors such as rising interest rates, inflationary pressures, geopolitical instability, and declining investor confidence have contributed to the severe correction in banking stocks. The negative sentiment in Indonesia's financial markets, exacerbated by global economic uncertainty, has further intensified the sell-off in KBMI 4 stocks (CNBC Indonesia, 2025).

The current situation underscores that even large capitalization banks are not immune to market volatility. The sharp fluctuations observed in the share prices of these big banks demonstrate that neither size nor capitalization offers guaranteed protection against widespread uncertainty or deteriorating investor confidence. This reality highlights the urgent need to understand and accurately model the volatility dynamics within such banks. The reason writer focus on volatility is to support the existence of public statements that highlight heightened market uncertainty. This high level of fluctuation in KBMI 4 is the main reason behind writer research interest. For this reason, the KBMI 4 banks have been selected as the focus of this research. Not only do they form the core of Indonesia's financial system, but their recent stock performance also reflects deeper macroeconomic and structural vulnerabilities. Analyzing their volatility patterns is expected to yield valuable insights into market behavior and enhance risk management strategies during periods of economic turbulence.

One of the most widely used approaches for modeling and forecasting financial market volatility is the Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model, introduced by Bollerslev (1986) as an extension of the Autoregressive Conditional Heteroscedasticity (ARCH) model developed by Engle (1982). The GARCH framework has been extensively applied across various financial sectors, including banking, to capture volatility clustering and conditional heteroscedasticity. The effectiveness of different GARCH variants in forecasting stock market volatility (Sen et al., 2021), with findings indicating that asymmetric models

like Exponential GARCH (EGARCH) and Glosten-Jagannathan-Runkle GARCH (GJR-GARCH) often provide better predictions for financial assets exhibiting leverage effects (Nikhil et al., 2023).

Sadik (2019) have highlighted the effectiveness of asymmetric GARCH models in capturing leverage effects, where negative shocks have a larger impact on volatility than positive shocks of the same magnitude. Following this, Sudhi Sharma et al (2020) comparing GARCH (1,1), E-GARCH, and T-GARCH models across China, India, Indonesia, Brazil, and Mexico finds that GARCH (1,1) performs best, with leverage effects being insignificant in the long run. China is the most volatile, India offers high returns with moderate volatility, and Indonesia is the least volatile. The 2008 crisis impacted China more due to export dependence, while India remained stable. Nikhil M. N et al, (2023) uses univariate GARCH models on Indian Bank Nifty and finds high volatility persistence (coefficient: 0.9957), with a 16-day mean reversion period. An anti-leverage effect is observed, and EGARCH with Student's t-distribution provides the best fit, showing asymmetry in responses to market shocks.

The imposition of steep tariffs on Indonesian exports, combined with heightened domestic political uncertainty, has triggered significant capital outflows, weakened currency performance, and intensified market volatility especially within the banking sector. These extraordinary conditions have created a new volatility landscape for KBMI 4 stocks, making it essential to reassess the suitability of traditional and asymmetric GARCH models in capturing these dynamics. The novelty of this research lies in its application of GARCH family models to analyze volatility in the KBMI 4 banking stocks under the dual pressure of external shocks such as the U.S. tariff war and internal policy disruptions like the proposed military law revisions and the Danantara sovereign wealth fund. By incorporating the effects of external shocks like global trade tensions and internal institutional developments, this study offers a timely and unique contribution to volatility forecasting literature, aiming to identify the best model for measuring and predicting fluctuations in Indonesia's largest bank.

The purpose of this research is to model and compare various GARCH family models to determine which provides the most accurate volatility forecasts for KBMI 4. By evaluating symmetric (GARCH) and asymmetric (EGARCH, GJR-GARCH) models, this research seeks to contribute to the literature on financial market volatility by identifying the most suitable approach for predicting banking stock fluctuations. Additionally, the study will assess whether KBMI 4 stock returns respond symmetrically or asymmetrically to positive and negative news of equal magnitude. The findings are expected to be valuable for investors, policymakers, and researchers in enhancing risk assessment strategies and regulatory decision-making.

1.2 Research Question

1. Are volatility shocks in KBMI 4 stock returns highly persistent?
2. Which type of GARCH model, such as the Symmetric GARCH (GARCH(1,1)) or Asymmetric GARCH (EGARCH (1,1) or GJR-GARCH (1,1)), yields the most accurate volatility forecasts for KBMI 4 returns?
3. Do KBMI 4 stock returns exhibit symmetric responses to positive and negative news of equal magnitude?

1.3 Objective of the Study

1. To analyze the persistence of volatility shocks in the stock returns of KBMI 4.
2. To determine the most accurate volatility forecasting model for KBMI 4 by comparing Symmetric GARCH (GARCH(1,1)) and Asymmetric GARCH models (EGARCH(1,1), GJR-GARCH(1,1)).
3. To assess whether KBMI 4 stock returns respond symmetrically or asymmetrically to positive and negative news of equal magnitude.

1.4 Research Benefit

The benefits of this research can be categorized into three main groups, government, industry, and the writer.

1.4.1 Benefits for Industry

- 1) Financial institutions and investors can use the results to improve their risk management strategies and optimize investment portfolios.
- 2) The study provides a robust forecasting model that banks can integrate into their internal financial planning and capital allocation processes.
- 3) Improved volatility predictions can enhance decision-making processes in asset management and financial product development.

1.4.2 Benefits for Investors

- 1) Investors can utilize the study's findings to make more informed decisions regarding banking stocks, reducing uncertainty and improving portfolio performance.
- 2) Accurate volatility forecasting allows investors to better assess risk levels and adjust their investment strategies accordingly.
- 3) Understanding the influence of macroeconomic factors on stock volatility helps investors anticipate market movements and mitigate potential losses.
- 4) By identifying the most suitable GARCH model for forecasting banking stock volatility, investors can enhance their trading strategies and optimize asset allocation.

1.4.3 Benefits for the Writer

- 1) This research contributes to the academic literature on financial volatility modeling and strengthens the writer's expertise in financial econometrics.
- 2) The study provides an opportunity to apply theoretical knowledge in a real-world context, enhancing analytical and problem-solving skills.
- 3) Publishing this research can open avenues for further studies and collaborations in the field of financial forecasting and risk management.

1.5 Systematic of Writing

CHAPTER I INTRODUCTION

This chapter provides research background, research question, objective of the study, research benefits, and systematic of writing.

CHAPTER II LITERATURE REVIEW

In this chapter consist of concept and theory that is relevant with the problem statement of this research. This chapter will be divided into fourth parts, the first one is about the literature review, the second one is previous studies, the third one is hypothesis development, and the last one is theoretical framework.

CHAPTER III RESEARCH METHODS

The chapter depicts and explains the sampling approach, data and data gathering, variables and variables measurement, and methods of analysis.

CHAPTER IV ANALYSIS AND DISCUSSION

This chapter emphasizes the output data from E-Views 12 and the interpretation of the result of the data analysis.

CHAPTER V CONCLUSION REMARK

In this chapter consist of conclusions, limitations of the study, managerial implication, and further research.