

**MODELLING A VOLATILITY FORECASTING MODEL FOR KBMI 4
USING GARCH FAMILY TO SEE WHICH PROVIDES BETTER
PREDICTIONS
THESIS**

Presented as Partial Fulfilment of the Requirements of the
Degree of Sarjana Ekonomi (S1) in International Business
Management Program Faculty of Business and Economics

Atma Jaya Yogyakarta University



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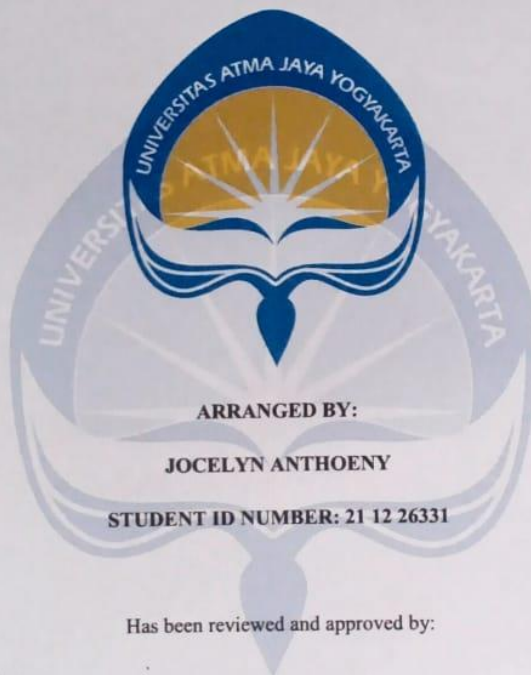
**FACULTY OF BUSINESS AND ECONOMICS
ATMA JAYA YOGYAKARTA UNIVERSITY**

2025

APPROVAL PAGE

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THESIS



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June 2025

LETTER OF STATEMENT

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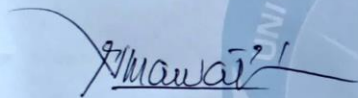
STUDENT ID NUMBER: 21 12 26331

Has been defended and accepted in front of examiners on 11th July 2025, as partial fulfillment
of the requirements of the Bachelor Degree of Management (S1) in International Business
Management Program Faculty of Business and Economics Atma Jaya University

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ACKNOWLEDGEMENT**

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This is my own work. Statements, ideas, and quotations, whether directly or indirectly, that originate from the writings or ideas of others are stated in writing in this thesis in the body notes and bibliography. If it is later proven that I have plagiarized part or all of this thesis, then the degree I have obtained will be declared null and void, and I will return it to Atma Jaya University Yogyakarta.

Yogyakarta, 14 July 2025

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ABSTRACT

This study examines the volatility behavior of KBMI 4 stocks BBKA, BBRI, BMRI, and BBNI which play a critical role in the national financial system. Amid rising domestic political uncertainty and global trade tensions, these banks experienced sharp stock price declines in 2025. Understanding volatility patterns is crucial for risk management, especially in emerging markets facing macroeconomic shocks. The research addresses three key questions: the persistence of volatility shocks, the most accurate volatility forecasting model, and whether stock returns respond symmetrically to news. Weekly return data from 2014 to 2024 are analyzed using symmetric GARCH(1,1) and asymmetric GARCH models (EGARCH(1,1), GJR-GARCH(1,1)). The findings show that volatility shocks are highly persistent across all banks, with $\alpha + \beta$ values exceeding 1 in EGARCH(1,1) models. Asymmetric models outperform symmetric ones based on AIC and BIC, highlighting the importance of modeling leverage effects. Additionally, statistically significant negative γ coefficients in EGARCH models confirm that negative news increases volatility more than positive news of the same magnitude. These results underscore the relevance of using asymmetric GARCH models to capture market behavior under economic uncertainty. The findings have important implications for investors, regulators, and policymakers seeking to enhance volatility forecasting, investment strategies, and financial stability in Indonesia's banking sector.

Keywords: Volatility; KBMI 4, GARCH(1,1), EGARCH(1,1), GJR-GARCH(1,1)

ACKNOWLEDGEMENT

I would like to express my deepest gratitude to my supervisor, Prof. Dr. Sukmawati Sukamulja, MM., for her invaluable guidance, support, and encouragement throughout the course of this thesis. Her expertise and insightful feedback have been instrumental in shaping both the direction and quality of this research. I am also sincerely thankful to my family and friends for their steadfast support, patience, and motivation throughout this challenging journey. I also extend my thanks to:

1. Business and Economics Faculty at Atma Jaya Yogyakarta University for providing an enriching academic environment and necessary resources for conducting this research.
2. My sister, Jannesa Anthoeny, and my brother, Jansen Anthoeny, for their support and assistance during the submission of my thesis defense documents.
3. My mother, Vianney Ryanda Halim, for her continuous support throughout my college years.
4. The Financial Management assistant professors, for the motivation and knowledge sharing during my time serving as a teaching assistant.
5. Ketring Daerah Tambak Bayan, for the laughter, joy, and unwavering support throughout my college years and thesis journey.
6. My lovely mentors at Orang Tua Group, Yulianti Astuti and Jhon Patinggi, for their encouragement and support throughout the thesis writing process.
7. Yobel Pryanichoel and Family, for their love, support, and helping me during my college years.

Lastly, I am thankful to all the participants who generously shared their time and insights, contributing significantly to the success of this study.

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