

ABSTRACT

Investment is a commitment to allocate funds at the present time with the expectation of obtaining profits in the future. One of the assets available on the Indonesia Stock Exchange is stocks. In investing, in addition to considering return and risk, an investor also needs to pay attention to volatility, which is the measure of price fluctuations of an asset over a certain period. Stock prices tend to fluctuate over time, causing heteroscedasticity or a condition in which the variance of the data is not constant. A commonly used time series forecasting method is ARIMA (Autoregressive Integrated Moving Average), which is based on past and current data patterns. One of the assumptions that must be satisfied in the ARIMA method is homoscedasticity, or a constant residual variance over time. A model that can be used to address the problem of heteroscedasticity is the ARCH/GARCH model. However, financial data often exhibit an asymmetric phenomenon, namely the difference in volatility response to good news (positive returns) and bad news (negative returns). Volatility tends to increase more sharply due to bad news of the same magnitude, thus requiring a model capable of capturing such asymmetric effects. This study employs the ARIMA-EGARCH (Exponential Generalized Autoregressive Conditional Heteroscedasticity) model to address the asymmetric effect in the data, using the maximum likelihood method to estimate parameters. The objective of this research is to forecast the return and volatility of banking stocks in the LQ45 Index. Banking stocks are used because the banking sector serves as the driving force of the economy. The data consist of closing prices of six banking stocks, namely BBKA, BBNI, BBRI, BBTN, BMRI, and BRIS, covering the period from January 2, 2020, to June 13, 2025. Based on the data analysis, it was found that the only stock fulfilling all assumptions is BBRI, and the appropriate model to forecast the return and volatility of BBRI stock is the ARMA(2,1)-EGARCH(1,1) model, as it is able to capture the asymmetric effects in the data. Based on the sMAPE calculation, the forecast accuracy for volatility was found to be 14.9%, indicating that the volatility forecasting results are considered good.

Keywords: Stock, Return, Volatility, ARIMA, EGARCH, Forecasting.