ABSTRACT

Non-oil and gas commodity exports play a crucial role in Indonesia's economy, particularly in generating foreign exchange and creating employment opportunities. However, the prices of non-oil and gas commodities tend to be volatile due to global market dynamics, changes in supply-demand, and geopolitical factors. This price fluctuation poses challenges for businesses and policymakers. This research aims to model and forecast non-oil and gas export commodity prices in Indonesia using the ARIMA-EGARCH approach. The data used is a sample of monthly non-oil and gas commodity price data from January 2017 to December 2024, obtained from BPS (Statistics Indonesia). The ARIMA model is employed to capture short-term patterns, while the EGARCH model is used to handle asymmetric volatility. Parameter estimation of ARIMA is using maximum likelihood method. The analysis results indicate that the best model is ARIMA(2,1,2) – EGARCH(1,1), with a MAPE value of 6,4498%. This value signifies that the model has excellent accuracy in forecasting (MAPE < 10%). These findings are expected to provide useful information for stakeholders in strategic decision-making related to non-oil and gas commodity exports.

Keywords: Export, Forecasting, ARIMA, EGARCH