SKRIPSI

PERAMALAN NILAI TUKAR RUPIAH TERHADAP DOLAR AS MENGGUNAKAN MODEL TARCH DAN EGARCH

FORECASTING EXCHANGE RATE OF THE INDONESIAN RUPIAH AGAINST USD USING TARCH AND EGARCH MODELS

Diajukan untuk memenuhi salah satu syarat memperoleh derajat
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ABSTRAK

PERAMALAN NILAI TUKAR RUPIAH TERHADAP DOLAR AS MENGGUNAKAN MODEL TARCH DAN EGARCH

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Nilai tukar Rupiah terhadap Dolar AS berperan penting dalam stabilitas ekonomi Indonesia dan kerap menunjukkan efek asimetris (*leverage effect*). Penelitian ini membandingkan kinerja model *Threshold Autoregressive Conditional Heteroskedasticity* (TARCH) dan *Exponential Generalized Autoregressive Conditional Heteroskedasticity* (EGARCH) dalam memodelkan dan meramalkan kurs USD/IDR yang mengakomodasi volatilitas dengan periode 4 Januari 2021–31 Desember 2024. Data ditransformasi ke *log return* dan dimodelkan menggunakan *Autoregressive Moving Average* (ARMA), di mana ARMA(2,2) teridentifikasi sebagai model *mean* terbaik. Uji *Sign Bias* menunjukkan adanya efek asimetris, sehingga model TARCH dan EGARCH relevan digunakan. Hasil estimasi menunjukkan bahwa meskipun model ARMA(2,2)-TARCH(2,1) memiliki nilai *Mean Squared Error* (MSE) lebih kecil (2.343820e-05), model ARMA(2,2)-EGARCH(2,1) (2.366173e-05) memberikan hasil diagnostik yang lebih stabil dan parameter yang signifikan. Dengan demikian, model ARMA(2,2)-EGARCH(2,1) dinilai kokoh (*robust*) dalam memodelkan nilai tukar Rupiah.

Kata Kunci: Nilai Tukar, TARCH, EGARCH

ABSTRACT

FORECASTING EXCHANGE RATE OF THE INDONESIAN RUPIAH AGAINST USD USING TARCH AND EGARCH MODELS

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The exchange rate of the Indonesian Rupiah against the US Dollar plays a crucial role in Indonesia's economic stability and often exhibits asymmetric behavior (leverage effect). This study compares the performance of the Threshold Autoregressive Conditional Heteroskedasticity (TARCH) model and the Exponential Generalized Autoregressive Conditional Heteroskedasticity (EGARCH) model in modeling and forecasting the USD/IDR exchange rate by incorporating volatility over the period of January 4, 2021–December 31, 2024. The data were transformed into log returns and modeled using the Autoregressive Moving Average (ARMA) approach, wherein ARMA(2,2) was identified as the best-fitting mean model. The Sign Bias Test confirms the presence of asymmetric effects, making the TARCH and EGARCH models appropriate for use. The estimation results show that although the ARMA(2,2)-TARCH(2,1) model yields a lower Mean Squared Error (MSE) (2.343820e-05), the ARMA(2,2)-EGARCH(2,1) model (2.366173e-05) provides more stable diagnostic outcomes and statistically significant parameters. Therefore, the ARMA(2,2)-EGARCH(2,1) model is considered more robust in modeling the volatility of the Rupiah exchange rate.

Keywords: Exchange Rate, TARCH, EGARCH