

## INTISARI

Sejak menganut sistem nilai tukar mengambang bebas pada 1997, Indonesia dihadapkan pada situasi nilai tukar yang semakin volatil. Volatilitas nilai tukar berlebih diyakini berdampak buruk bagi perekonomian domestik. Oleh karena itu, pemeliharaan volatilitas nilai tukar merupakan tugas yang krusial bagi otoritas moneter di Indonesia. Pemodelan dan peramalan volatilitas nilai tukar diharapkan berkontribusi pada perumusan kebijakan moneter dalam rangka pemeliharaan volatilitas nilai tukar dan stabilisasi nilai tukar secara umum. Berangkat dari hal tersebut, penelitian ini bertujuan untuk: (i) menganalisis perilaku volatilitas nilai tukar Rupiah lewat estimasi model keluarga ARCH; (ii) mengevaluasi kinerja peramalan model keluarga ARCH; (iii) melakukan peramalan volatilitas tiga puluh hari kerja ke depan. Model keluarga ARCH yang digunakan adalah ARCH, GARCH, EGARCH, GJR-GARCH, dan IGARCH. Jenis data yang digunakan adalah data nilai tukar harian Februari 2001-November 2018. Nilai tukar yang dianalisis lebih lanjut adalah nilai tukar Rupiah terhadap lima mata uang negara mitra dagang utama Indonesia (AS, Jepang, Tiongkok, Uni Eropa, dan Singapura). Kinerja peramalan model ARCH dievaluasi menggunakan MAE, RMSE, dan MAPE. Ditemukan bukti bahwa nilai tukar IDR/USD merupakan nilai tukar yang paling sensitif terhadap *shock* di pasar finansial dan efek *shock* tersebut dikonfirmasi bersifat persisten terhadap volatilitas nilai tukar Rupiah. Model peramalan terbaik untuk hampir seluruh kasus nilai tukar adalah EGARCH-Normal. Volatilitas nilai tukar Rupiah secara umum diproyeksikan mengalami peningkatan, kecuali untuk kasus nilai tukar IDR/SGD yang diramalkan stagnan.

Kata Kunci: Volatilitas Nilai Tukar, Model Keluarga ARCH, Peramalan.

## **ABSTRACT**

*Since embracing the free floating exchange rate system in 1997, Indonesia is faced with an increasingly volatile exchange rate situation. Excessive exchange rate volatility is believed to have a negative impact on the domestic economy. Therefore, maintaining exchange rate volatility is a crucial task for monetary authorities in Indonesia. Modelling and forecasting exchange rate volatility are expected to contribute to the formulation of monetary policy in order to maintain exchange rate volatility and stabilize exchange rate in general. Departing from those, this study aims to: (i) analyze the volatility of the Rupiah exchange rate through estimating the ARCH family model; (ii) evaluate the forecasting performance of the ARCH family model; (iii) conduct volatility forecasting for the next thirty weekdays. The ARCH family models used are ARCH, GARCH, EGARCH, GJR-GARCH, and IGARCH. The type of data used is the daily exchange rate data February 2001-November 2018. The exchange rate analyzed further is the exchange rate of Rupiah against five currencies of Indonesia's main trading partners (US, Japan, China, European Union, and Singapore). The forecasting performance of the ARCH model is evaluated using MAE, RMSE, and MAPE. It is found evidence that the IDR/USD exchange rate is the most sensitive exchange rate for shock in the financial market and the effect of the shock is confirmed to be persistent to the volatility of the Rupiah exchange rate. The best forecasting model for almost all cases of exchange rates is EGARCH-Normal. In general, the volatility of the Rupiah exchange rate is predicted to increase, except for the case of IDR/SGD exchange rate which is predicted to be stagnant.*

*Keywords: Exchange Rate Volatility, ARCH Family Model, Forecasting.*