

ABSTRACT

This study aims to determine the characteristics of return data exchange, as well as provide information on the calculation of VaR (Value at Risk) for the USD, GBP, JPY and SGD against the IDR using estimates of volatility Autoregressive Conditional Heteroskedasticity (ARCH), Generalized Autoregressive Conditional Heteroskedasticity (GARCH), Exponential Generalized Conditional Autoregressive Heteroskedasticity (EGARCH), exponentially Weighted Moving Average (EWMA). Data obtained from Bank Indonesia in the form of data daily exchange rate, the amount of data each exchange as many as 613 a data period January 2, 2013 to June 30, 2015. VaR (Value at Risk) is a risk measurement that estimates the maximum potential loss that occurs in the future it comes with a certain period and a certain confidence level. The results showed that return data exchange rate of USD, GBP, JPY and SGD have data stationary, does not have a normal distribution, return data and SGD USD exchange rate volatility is heteroskedastic, return data the GBP and JPY exchange rate volatility is homoskedastic. Calculation of Value at Risk (VaR) through the estimation process EWMA volatility models, ARCH, GARCH, EGARCH using 95% confidence level and 1 day holding period to provide information of potential maximum loss on each exchange.

Keywords : Foreign Exchange Risk, Value at Risk (VaR), EWMA, ARCH/GARCH, EGARCH

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ABSTRAK

Penelitian ini bertujuan untuk mengetahui karakteristik data return nilai tukar, serta memberikan informasi hasil perhitungan VaR (*Value at Risk*) untuk mata uang USD, GBP, JPY, dan SGD terhadap IDR dengan menggunakan estimasi volatilitas *Autoregressive Conditional Heteroskedasticity* (ARCH), *Generalized Autoregressive Conditional Heteroskedasticity* (GARCH), *Exponential Generalized Autoregressive Conditional Heteroskedasticity* (EGARCH), *Exponentially Weighted Moving Average* (EWMA). Data diperoleh dari Bank Indonesia berupa data nilai tukar harian, jumlah data masing-masing nilai tukar sebanyak 613 data periode 2 Januari 2013 sampai 30 Juni 2015. VaR (*Value at Risk*) adalah pengukuran risiko yang mengestimasi potensi kerugian maksimal yang terjadi di masa yang akan datang dengan jangka waktu tertentu dan tingkat kepercayaan tertentu. Hasil penelitian menunjukkan bahwa data *return* nilai tukar USD, GBP, JPY, dan SGD memiliki data stasioner, tidak memiliki distribusi normal, data return nilai tukar USD dan SGD memiliki volatilitas bersifat *heteroskedastic*, data *return* nilai tukar GBP dan JPY memiliki volatilitas bersifat *homoskedastic*. Perhitungan *Value at Risk* (VaR) melalui proses estimasi volatilitas dengan model EWMA, ARCH, GARCH, EGARCH menggunakan *confidence level* 95% dan *holding period* 1 hari memberikan informasi potensi kerugian maksimum pada masing-masing nilai tukar.

Kata kunci : Risiko Nilai Tukar, *Value at Risk* (VaR), EWMA, ARCH/GARCH, EGARCH

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