INTISARI

MODEL MARKOV *SWITCHING AUTOREGRESSIVE* DENGAN RISIKO PREMIUM DINAMIS UNTUK PERAMALAN HARGA SAHAM

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Model Markov *switching autoregressive* dengan risiko premium dinamis (MSAR-RPD) merupakan adaptasi dari model MSAR dan MSAR-GARCH dengan tambahan risiko premium dinamis yang dipengaruhi oleh suatu *regime*. Model tersebut dievaluasi menggunakan data saham dengan kode INDF pada periode data *in-sample*, *out-of-sample* serta pada dataset yang diperluas. Parameter model diestimasi menggunakan *maximum likelihood* yang dioptimalkan dengan algoritma *differential evolution* (DE). Hasil menunjukkan bahwa model MSAR-RPD tidak lebih baik ataupun lebih buruk dari model MSAR dan MSAR-GARCH dalam meramalkan ekspektasi *log return* dan volatilitas saham INDF, karena nilai evaluasi prediksi berupa RMSE, MAPE dan MAE yang dihasilkan oleh ketiga model relatif sama pada data *in-sample*, *out-of-sample* ataupun pada dataset yang diperluas. Selain itu, nilai AIC, SIC, HQC yang dihasilkan ketiga model juga relatif identik. Namun, evaluasi peramalan ekspektasi *log return* dan volatilitas model MSAR-RPD dengan periode data 2001-2025 menghasilkan nilai RMSE, MAE dan MAPE yang lebih kecil dibandingkan model MSAR-RPD dengan data *in-sample* periode 2001-2015. Selanjutnya, hasil estimasi parameter risiko premium model MSAR-RPD menunjukkan bahwa pada *regime* tidak stabil volatilitas berpengaruh positif terhadap *log return* dan pada *regime* stabil volatilitas berpengaruh negatif terhadap *log return*.

Kata kunci: *Autoregressive*, GARCH, Markov *switching*, Risiko premium, Saham.

ABSTRACT

MARKOV SWITCHING AUTOREGRESSIVE MODEL WITH DYNAMIC RISK PREMIUM FOR STOCK PRICE FORECASTING

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The Markov switching autoregressive model with dynamic risk premium (MSAR-DRP) is an adaptation of the MSAR and MSAR-GARCH models with the addition of dynamic risk premium influenced by a regime. The model was evaluated using stock data with the code INDF in the in-sample and out-of-sample data periods as well as in an expanded dataset. The model parameters were estimated using maximum likelihood optimized with the differential evolution (DE) algorithm. The results show that the MSAR-DRP model is neither better nor worse than the MSAR and MSAR-GARCH models in predicting the expected log return and volatility of INDF stocks, because the prediction evaluation values in the form of RMSE, MAPE, and MAE produced by the three models are relatively the same in the in-sample, out-of-sample, and expanded datasets. In addition, the AIC, SIC, and HQC values produced by the three models are also relatively identical. However, the evaluation of the MSAR-DRP model's log return and volatility expectations with the 2001-2025 data period produces smaller RMSE, MAE, and MAPE values than the MSAR-DRP model with the 2001-2015 in-sample data period. Furthermore, the results of the MSAR-DRP model's risk premium parameter estimation show that in an unstable regime, volatility has a positive effect on log returns, and in a stable regime, volatility has a negative effect on log returns.

Keywords: Autoregressive, GARCH, Markov switching, Risk premium, Stocks.