

A Comparative Analysis of ARIMA and Threshold Autoregressive Models on Exchange Rate

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Abstract : This paper assesses the in-sample forecasting of the South African exchange rates comparing a linear ARIMA model and a SETAR model. The study uses a monthly adjusted data of South African exchange rates with 420 observations. Akaike information criterion (AIC) and the Schwarz information criteria (SIC) are used for model selection. Mean absolute error (MAE), root mean squared error (RMSE) and mean absolute percentage error (MAPE) are error metrics used to evaluate forecast capability of the models. The Diebold -Mariano (DM) test is employed in the study to check forecast accuracy in order to distinguish the forecasting performance between the two models (ARIMA and SETAR). The results indicate that both models perform well when modelling and forecasting the exchange rates, but SETAR seemed to outperform ARIMA.

Keywords : ARIMA, error metrics, model selection, SETAR

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