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**GEL/USD EXCHANGE RATE FORECAST WITH NEURAL NETWORK
AND WAVELET COMBINATION****Abstract:**

This paper tests the predictability of Georgian Gel-US Dollar bilateral exchange rate. Exchange rate forecast is important both from theoretical as well as the practical point of view. The paper uses an artificial neural network as a non-linear model class in order to capture the relationship between the input variables and the exchange rate. Benchmark model is a Random walk model which comes from Meese and Rogoff puzzle. Two additional models that are tested include Monetary model and Mix model, with macroeconomic, fiscal variables and exchange rate appreciation trend. The models forecast one quarter ahead exchange rate and appreciation trend decomposed by Multiresolution Overlap Discrete Wavelet Transformation (MODWT). The model evaluation metrics included Mean Absolute error and Mean Square error. The results indicate that the random walk model outperforms the other two models in most of the cases, except for the out-of-sample prediction in terms of MAE. Monetary model has the worst forecasting power. Thus, this research confirms that the Random walk has advantage in forecasting GEL/USD exchange rate in short-run.

Keywords:

Exchange Rate, Forecast, Artificial Neural Network, Wavelet