

A time series modeling approach for forecasting gold price demands in Sri Lanka

Kumara H.N.¹, Bandara S.M.G.S.¹, Sudarshani E.G.D.¹ and
Rathnayaka R.M.K.T.^{2*}

¹*Department of Mathematics, University of Ruhuna, Matara, Sri Lanka*

²*Department of Physical Sciences & Technology, Faculty of Applied Sciences,
Sabaragamuwa University of Sri Lanka, Belihuloya, Sri Lanka*

The demand of the metal gold makes a significant role in the world economy. In the real world, different types of social and economic factors are directly affected on the gold demands; especially the volatility of the share market conditions are significant. The main objective of this current study is to develop high accuracy model for forecasting gold price demands to fulfill investors' expectations. Different Autoregressive integrated moving average (ARIMA) models were considered. The model selection results of Akaike information criterion (17.549), Schwarz criterion (17.575) and Hannan-Quinn criterion (17.559) suggested that, ARIMA (2, 1, 2) is the best model for forecasting daily gold prices under the volatility during the period from June 2014 to June 2017. In addition to that, the Vector Autoregression model (VAR) is used to test the effectiveness with respect to the external factors such as GDP, Real Effective Exchange rate and Broad Money. The empirical findings of Vector Autoregressive Modeling Approach suggested that, GDP and Real Effective Exchange rate highly affect for the gold price demands in Sri Lanka.

Keywords: Gold price, Time series Forecasting, Autoregressive integrated moving average model, Vector Autoregression model

*Corresponding Author: kapilar@appsc.sab.ac.lk