Abstract

Price stability is the primary monetary policy objective in any economy since it protects the interests of both consumers and producers. As a result, forecasting is a common practice and a vital aspect of monetary policymaking. Future predictions guide monetary and fiscal policy tools that that be used to stabilize commodity prices. As a result, developing an accurate and precise forecasting model is critical. The current study fitted and forecasted the food and beverages price index (FBPI) in Kenya using seasonal autoregressive integrated moving average (SARIMA) models. Unlike other ARIMA models like the autoregressive (AR), Moving Average (MA), and non-seasonal ARMA models, the SARIMA model accounts for the seasonal component in a given time series data better forecasts. The study relied on secondary data obtained from the KNBS website on monthly food and beverage price index in Kenya from January 1991 to February 2020. R-statistical software was used to analyze the data. The parameter estimation was done using the Maximum Likelihood Estimation method. Competing SARIMA models were compared using the Mean Absolute Error (MAE), Mean Absolute Scaled Error (MASE),.and Mean Absolute Percentage Error (MAPE). A first-order differenced SARIMA $(1,1,1)$ $(0,1,1)12$ minimized these model evaluation criteria (AIC = 1818.15, BIC =1833.40). The forecasting ability evaluation statistics MAE = 2.00%, MAPE = 1.62% and MASE = 0.87%. The 24-step ahead forecasts showed that the FPBI is unstable with an overall increasing trend. Therefore, the monetary policy committee ought to control inflation through monetary or fiscal policy, strengthening food security and trade liberalization.