

Time Series Modelling for Forecasting Wheat Production and Consumption of South Africa in Time of War

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Abstract : Wheat is one of the most important staple food grains of human for centuries and is largely consumed in South Africa. It has a special place in the South African economy because of its significance in food security, trade, and industry. This paper modelled and forecast the production and consumption of wheat in South Africa in the time covid-19 and the ongoing Russia-Ukraine war by using annual time series data from 1940-2021 based on the ARIMA models. Both the averaging forecast and selected models forecast indicate that there is the possibility of an increase with respect to production. The minimum and maximum growth in production is projected to be between 3million and 10 million tons, respectively. However, the model also forecast a possibility of depression with respect to consumption in South Africa. Although Covid-19 and the war between Ukraine and Russia, two major producers and exporters of global wheat, are having an effect on the volatility of the prices currently, the wheat production in South African is expected to increase and meet the consumption demand and provided an opportunity for increase export with respect to domestic consumption. The forecasting of production and consumption behaviours of major crops play an important role towards food and nutrition security, these findings can assist policymakers and will provide them with insights into the production and pricing policy of wheat in South Africa.

Keywords : ARIMA, food security, price volatility, staple food, South Africa

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