UNIVERSITI TEKNOLOGI MARA

FORECASTING NATURAL RUBBER PRODUCTION IN MALAYSIA: BOX-JENKINS VS ARTIFICIAL NEURAL NETWORK METHOD

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ABSTRACT

The present study aims as applying different methods for forecasting the production of natural rubber in Malaysia. Two different methods, Box-Jenkins and Artificial Neural Network, were used to forecast the production of rubber. The monthly data from 1984 until 2017 were the data used to analyse and the data split into two part which is 1984-2016 is for fit the model and 2017 for validate the model. SARIMA $(0,1,2)\ (0,1,2)_{12}$ is the best model for Box-Jenkins analysis while Multilayer Neural Network that contain 12 input nodes, 8 hidden nodes and 1 output nodes is the best model for Artificial Neural Network analysis. The performances of the models were compared and the result shows that Artificial Neural Network model was found to model the production better since it has the lowest MAPE value. Thus, Artificial Neural Network can be an effective tool for forecasting the production of natural rubber in Malaysia.

Keywords: Box-Jenkins, Artificial Neural Network, forecasting, natural rubber production

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