UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

APPLICATION OF BOX JENKIN'S AND SINGLE EXPONENTIAL SMOOTHING IN FORECASTING OF EXPORT COCOA PRODUCTION

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IN THE NAME OF ALLAH, THE MOST GRACIOUS, THE MOST MERCIFUL

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ABSTRACT

Cocoa has an important role in the export sector for production plantation in Malaysia. The cocoa production can maintain their strategic management by making the forecast for export of cocoa production within a certain period. It is compulsory to study the pattern of export cocoa production in the future. This report reviews the export of cocoa production in Malaysia over 37 years starting from the year 1980 to the year 2016. Secondary time series data were used which obtained from the Division of Statistic Malaysia. There are two models that have been used in the study, namely the Autoregressive Integrated Moving Average (ARIMA) and Single Exponential Smoothing Model. This model is comparable to Mean Squared Error (MSE), Mean Absolute Percentage Error (MAPE) and Root Mean Squared Error (RMSE) to get the best model. Akaike' Information Criteria (AIC), Schwarz Criteria (BIC), Durbin Watson, Adjusted R-squared and R-squared are taken in diagnostic test statistics for the Autoregressive Moving Average (ARIMA) model. Single Exponential Smoothing model were tested by using Microsoft Excel and the criteria of Mean Squared Error (MSE) emphasize the lowest value that will be chosen as the best model. Based on the results, the Autoregressive Integrated Moving Average (ARIMA) model was selected as the appropriate model for forecasting the export of cocoa production.