FORECASTING OF CRUDE PALM OIL (CPO) FUTURES PRICES USING MULTIPLE LINEAR REGRESSION AND ARTIFICIAL NEURAL NETWORK

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Crude Palm oil (CPO) is a very important agricultural commodity throughout the world. It has a huge demand due to the various food and non-food applications it has. Palm oil is traded enormously all over the world in thousands of tonnes. So, it is very essential for a country to keep an eye on the price variations of the palm oil. A simple plot of CPO prices in recent years would show the instability of the price of palm oil. Because of this reason a reliable forecasting technique is important for Business, Industry and Government agencies.

In this research we have implemented two models to forecast future CPO prices using Multiple Linear Regression (MLR) and Artificial Neural Network (ANN) approaches. The influencing factors on palm oil price such as Supply, Demand, Weather, Crude oil prices and Global economy were taken into account when constructing these models. Monthly data over a period of 30 years: from 1983 to 2012, was used to build the models.

The results of the two models were compared considering the mean squared error (MSE) and coefficient of determination (R^2). Results showed that ANN model performs better than the regression model in predicting the future CPO prices, even though the regression model is also good in forecasting CPO price futures.

Keywords: Crude Palm Oil, Multiple Linear Regression, Artificial Neural Network, Mean square error, Coefficient of determination