

UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

**APPLICATION OF UNIVARIATE MODEL AND BOX- JENKIN
TECHNIQUES IN FORECASTING STOCK PRICE OF DUTCH
LADY MILK INDUSTRIES**

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ABSTRACT

The stock market has become an integral component of modern society. It generates headlines whenever it reaches a new peak or a new low. When discussing a stock market investment, most individuals first consider the stock's price. Therefore, if an effective algorithm could be developed to predict the short-term price of a single stock, there would be more opportunities to invest and launch a business in the stock market. The aim of this study is to identify the best model for forecasting the stock price of Dutch Lady Milk Industries in Malaysia. The Dutch Lady brand of dairy products is currently one of the most well-known and recognizable in Malaysia, consistently placed among the top three dairy producers. In this study, forecasting time series data is being used to determine the utility of this approach in forecasting and estimating the stock price of Dutch Lady Milk Industries in Malaysia. There are three objectives in this study. Firstly, to study the pattern of the monthly stock price of Dutch Lady Milk Industries in the 5 years from 2017 to 2022 using Univariate Model and the Box-Jenkin Techniques. Besides that, it is to determine the best fitted model to fit the data series. Lastly, to forecast the market stock price of Dutch Lady Milk Industries after 1 year. In this study, Mean Squared Error (MSE) and Mean Absolute Percentage Error (MAPE) have been used to determine the best model. Based on the comparison of these error measures, the results indicated that Double Exponential Smoothing from the Univariate Model is the best model since it has the smallest values of MSE and MAPE. The findings show that the stock price of Dutch Lady Milk Industries for one year ahead decreased from 1 December 2022 until 1 November 2023 using Double Exponential Smoothing (DES) model. It shows a declining trend in the stock price during that time frame.