UNIVERSITI TEKNOLOGI MARA

TECHNICAL REPORT

PREDICTION OF SPRITZER STOCK BASED ON BURSA MALAYSIA INDEX USING BOX JENKINS METHOD AND SINGLE EXPONENTIAL SMOOTHING METHOD

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ABSTRACT

Stock market forecasting is critical in the decision-making process for investors and financial experts. Forecasting reduces risk. Investors can hedge, diversify, or alter their portfolios to reduce market risks by understanding them. The Box-Jenkins method and Single Exponential Smoothing (SES) method are used in this study to estimate the Spritzer stock price based on the Bursa Malaysia Index. The Box- Jenkins method combines time series analytic techniques like as autoregressive integrated moving average (ARIMA) models to capture the underlying patterns and trends in stock price data. On the other hand, the SES technique provides a straightforward method that can produce accurate forecasts. This method works by giving weights that diminish exponentially to the historical data. Mean Squared Error (MSE) and Mean Absolute Percentage Error (MAPE) are used to measure errors and figure out how accurate the forecasts are. The results of this study give important information about how well the Box-Jenkins method and the SES method can predict the price of Spritzer stock. Based on the Bursa Malaysia Index, the results can help investors and financial experts decide how to invest in Spritzer stock. The single exponential smoothing approach is thought to be the best model since it has the lowest MSE and MAPE values, but because it only analyses the level component of the time series data, it is inefficient for predicting long-term trends. It excludes the trend element, which captures the tempo and pattern of change over time. In single exponential smoothing, the level estimate is updated using just one smoothing parameter, alpha. When altering the level, this option determines how much weight is given to earlier data. While a lower alpha value highlights earlier discoveries, a higher alpha value emphasizes more current observations.