

Comparison of Double Exponential Smoothing for Holt's Method and Artificial Neural Network in Forecasting the Malaysian Banking Stock Markets

ABSTRACT

Forecasting stock market has been the centre of attraction among investors for a long period of time. Investors are always forecasting their return on investment in the stock market before they start to invest. In this study, to forecast on the stock market price, the monthly closing stock prices data from the Malaysian stock markets, namely AM001 Berhad, CI002 Berhad, HL003 Berhad and PB004 Berhad from 2008 to 2017, are examined for predictability results using Double Exponential Smoothing (DES) for Holt's method and Artificial Neural Network (ANN). The data is partitioned into two parts due to different purposes. A sample data consisting of 96 months data from 2008 to 2015 was used for the estimation parameter and modeling part. Meanwhile, the evaluation part to validate the DES for Holt's method and ANN was conducted using out-of-sample data involving 24 months data from 2016 to 2017. Three error measurements, MAD, MSE and RMSE, have been used in the evaluation to compare the performance of these two forecasting methods. The statistical analysis results show that Holt's method is superior to ANN model and when using real values, it could accurately predict future price movements in the Malaysian stock markets. The outcomes from this study suggest that it is worthwhile to investigate the predictability and profitability of forecasting models.