

Artificial neural network approach for predicting daily price indices in Colombo Stock Exchange, Sri Lanka.

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The stock markets have been an investment opportunity for organizations and individuals. Typically the nature of the stock market remains highly volatile and it underlines the importance of prediction approaches. The main goal of this study is to investigate the directions and movements of the All Share Price Index in Colombo Stock Exchange (CSE) during December 2010 to February 2019. In the context of the drawbacks associated with conventional forecasting methods, the current study attempted to develop an Artificial Neural Network (ANN) based hybrid forecasting approach to handle incomplete, noise and uncertain data. To improve accuracy of the results, three error measures were summarized. The results suggested that, 85% testing sample gives the best performance with minimum MAD, MSE and MAPE (%) with 0.228, 0.051984 and 0.00324 respectively. Furthermore, results showed that while applying neural networks alone could improve forecasting accuracy compared to single ARIMA.

Keywords: Colombo stock exchange, auto regressive process, moving average process, all share price index