

Title : Comparison of Statistical Techniques for Forecasting Stock - Price Movements

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Abstract

The purpose of this study is to search for the appropriate statistical techniques for forecasting stock - price movements. The stocks are classified into two different groups : higher fluctuating prices and lower fluctuating ones . Various statistical techniques are applied to predicting the movements in each group i.e. 3 - month Moving Average , 5 - month Moving Average , and 7 - month Moving Average , Decomposition Technique , Exponential Smoothing , Box – Jenkins Technique and Regression Analysis .

The criterion underlying the judgement of appropriate techniques is by comparing each technique with Mean Absolute Percentage Error (MAPE) , the lower MAPE is preferred to the higher one.

The results of the study reveal that the most appropriate technique for the higher fluctuating price group is the Exponential Smoothing and the next one is the Regression Analysis and Box - Jenkins Techniques . While the regression analysis is the most suitable technique for the lower fluctuating price group , next are Box – Jenkins Techniques and the Exponential Smoothing .

The results also show that the average MAPE of the estimation of the higher fluctuating price group is higher than that of the lower fluctuating price group in all techniques and every case shows statistical significance.

Besides MAPE , other factors are included in the study i.e. the ease and difficulty of the techniques , data and statistical software availability and time constraint . An index is constructed according to all those factors . The index shows that the most appropriate technique for the two stock price groups stated are the Exponential Smoothing Technique and the 3 - month Moving Average .