

Maythinee Kawinpas 2015: A Comparison of Forecasting Methods between Bayesian Network and Time Series Analysis for the Stock Price Index of Property and Construction Groups in Thailand. Master of Science (Statistics), Major Field: Statistics, Department of Statistics. Thesis Advisor: Associate Professor Prasit Payakkapong, M.S. 108 pages.

The purpose of this research is to study and compare time series analysis for the stock price of property and construction groups in Thailand by using the three forecasting methods : Bayesian Network, Box-Jenkins and Exponential Smoothing method. The suitable forecasting methods are chosen by considering the smallest value of mean absolute deviation (MAD), mean square error (MSE) and mean absolute percent error (MAPE).

The time series data in this study consists of stock price of property and construction, set 50 index, construction materials price index, housing price index, business sentiment index, interest rate and land price index from January 2009 to December 2013, totally 60 months.

The results of the study are follows: the data of stock price of property and construction have trend but no seasonal variation. Holt's exponential smoothing method with forecasting model $\hat{Y}_{t+p} = \hat{Y}_t + p\hat{S}_{t-1}$ is the best method for forecasting stock price of property and construction in Thailand because it displays the smallest value of MAD, MSE and MAPE. The next one is Box-Jenkins and the last one is Bayesian network which displays the largest value. Then, using the best method for finding the best suitable forecasting period and the result of study show that the 1 - 4 month periods are suitable for time series of stock price of property and construction in Thailand.

Student's signature

Thesis Advisor's signature