The purpose of this research is to study an appropriate model for forecasting inflation of Thailand by using the five forecasting methods : Holt, Box-Jenkins, Transfer function, Vector Autoregressive model (VAR) and combine forecasting with regression analysis. The four criteria for comparison are mean absolute percent error (MAPE), mean absolute deviation (MAD), mean square error (MSE) and akaike information criterion (AIC). The time series data in this study consists of consumer price index, foreign exchange rates, value of imports, price of gasoline, unemployment rate and gross domestic product since January 1998 to December 2007, totally 120 months.

The results of the study are as follow : the most appropriate model for the prediction of Thailand consumer price index is the transfer function : $\hat{Z}_t = 0.0014 + 0.0545Z_t^x + (1 - 0.3048B)^{-1}e_t$ where the level price of gasoline is the entry variable. However, a variable which correlates to other time series data has to be found for the transfer function. As a result, it causes complication while analyzing and choosing a suitable variable. It may be a better way to choose an another simple method such as Holt's method and Box-Jenkins model which is use only its data and is a good model based on the lower forecasting error. The VAR model and combine forecasting should not be chosen for this forecasting due to they are combined with many related time series that may be difficult to analyze.

By checking an accuracy of the forecast value for the transfer function by using a tracking signal cumulative-sum method, it is found that this model is suitable for short-term period forecasting, 1 - 3 month. For the forecasting with more periods, such as 12 months. Holt's method can be used as it given forecasting error less than other methods.

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