

Forecast a Economic Time Series Data using Neural Network Method and Projection Pursuit Regression Method

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In this paper we have compared two forecasting models, a projection pursuit regression method and a neural network model, through a case study on manufacturing operation rate index(1990=100) for Korea. We have demonstrated how an projection pursuit model can learn to accurately forecast rate index values, a task which is difficult and time consuming with traditional neural network forecasting method.

This paper has introduced some aspects to forecasting model of non-linear time series data. Firstly, a method of extending the well known Error Back-Propagation neural network to enable it to perform on-line identification of a series. Secondly, the projection pursuit identification has been suitably test on a complex non-linear composite series which includes formidable but realistic non-linear process.

The performance of the projection pursuit method has been compared to that by some traditional neural network methods of rate index forecasting and the result has shown the superiority of this approach. The results also show that a fully trained neural network model with a good fitting performance for the past may not give a good forecasting performance for the future.

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