Forecasting Tehran Price Index with Wavelet-based back propagation neural network

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Abstract

Stock Indexes as time series are non-stationary and highly-noisy due to the fact that stock markets are affected by a variety of factors. This article is investigated the use of the Wavelet De-noising-based Back Propagation (WDBP) neural network for forecasting the Tehran Price Index with neural networks. Initially, the main data transformed with the scaling to normal and thus decomposed with wavelet transform to multiple layers and finally the neural network model for predicting the De-noising data was used. MATLAB software for the implementation of wavelet and BP neural network was used. The monthly closing data with the Tehran Price Index (TEPIX) from March 1991 to February 2008 were used to illustrate the application. Using the WDBP model improves the significantly accuracy of the index forecasting compared to compared with the single Back Propagation (BP) neural network using the real data set.

Keywords: Wavelet de-noising, WDBP neural network, TEPIX.

JEL: C60, C45, C43.

References