Abstract

Predicting stock exchange movement is becoming a new trend and gaining worth nowadays in finance because if it is better predicted, investors will get more accurate or optimal prediction and carry economic benefits too. In recent times Artificial Neural Network (ANN) has been popularly used for prediction of the stock exchange movements. ANNs are data -driven, self-adaptive and virtuous predictor have the ability to make general observations from the original and incomplete data and approximately desired level of accurateness.

In Pakistan, the artificial neural network is not commonly used to predict the Stock index. The key purpose of this study is to predict the stock exchange movements by using neural network based NARX model. This research discuss the viability of artificial neural network for non-linear data.

This study examines that how the number of training data distribution and neurons and into validation of training as well as testing affects the network accuracy by using Neural Network toolbox Tests and MATLAB. To predict the stock prices movements, this study uses a non-linear autoregressive network with exogenous inputs (NARX) for the period of July 2008 to July 2018 and data collected from Pakistan Karachi Stock Exchange official website. The training set includes 70% of data, 15% of validation and testing respectively.

This study demonstrate outcomes that the KSE-100 Index is successfully predicted by using ANNs with NARX methodology. Hence, as compared to other neural networks, learning is more effective, real and results are more accurate plus faster in NARX due to its vigorous, complex and nonlinear nature of actual situations and difficulties. It also provides powerful demonstration for time series analysis.