

Modeling the Philippine Stock Exchange Index Closing Value Using Artificial Neural Network

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Abstract : This paper aimed at developing an artificial neural network (ANN) model specifically for the Philippine Stock Exchange index closing value. The inputs to the ANN are US Dollar and Philippine Peso(USD-PHP) exchange rate, GDP growth of the country, quarterly inflation rate, 10-year bond yield, credit rating of the country, previous open, high, low, close values and volume of trade of the Philippine Stock Exchange Index (PSEi), gold price of the previous day, National Association of Securities Dealers Automated Quotations (NASDAQ), Standard and Poor's 500 (S & P 500) and the iShares MSCI Philippines ETF (EPHE) previous closing value. The target is composed of the closing value of the PSEi during the 627 trading days from November 3, 2011, to May 30, 2014. MATLAB's Neural Network toolbox was employed to create, train and simulate the network using multi-layer feed forward neural network with back-propagation algorithm. The results satisfactorily show that the neural network developed has the ability to model the PSEi, which is affected by both internal and external economic factors. It was found out that the inputs used are the main factors that influence the movement of the PSEi closing value.

Keywords : artificial neural networks, artificial intelligence, philippine stocks exchange index, stocks trading

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