Abstract

Recently the development of technology is growing fast. It also has a positive impact to economic issues. Trading at international scale has developed in Indonesia and most of it uses US Dollar. Unstability in exchange rate of US Dollar to Rupiah can influence an economy activities in Indonesia. Because of that, system, which can be used to predict exchange rate of US Dollar to Rupiah, is needed. These are some methods that can be used to predict, for example Average, Moving Average, Single Exponential Smoothing, Double Exponential Smoothing. Effort to get an accurate prediction has been done, one of them by using Genetic Algorithm and Recurrent Neural Network, NeuroFuzzy, ANFIS, ,etc.

This final project will discuss about exchange rate prediction of foreign exchange (US Dollar) to Rupiah using Artificial Neural Network based on method Quasi Newton BFGS(Broyden-Fletcher-Goldfarb-Shanno). The system implements BFGS method for artificial neural network architecture with multi-layer percepteron on single hidden layer and one output layer. That is used to determine an optimal architecture of artificial neural network and is used to predict exchange rate of US Dollar to Rupiah for a next day.

Based on the result of this final project, using preprocessing 1 shows that system could have 98.997% acurary for training and 99.409% for data testing with 2 time series, 10 neurons in hidden layer, and 0.1 for the learning rate value. While other some observastion using preprocessing 2 shows that system could have 99.590% acurary for training and 99.714% for data testing with 7 time series, 10 neurons in hidden layer, and 0.1 for the learning rate value.

Key word : prediction, exchange rate, Neural Network, Quasi Newton BFGS(Broyden-Fletcher-Goldfarb-Shanno)