Abstract

Lately gold investment become a trend among the public. This investment is the safest option because gold is resistant from inflation (Zero inflation effect), and it can be used for collection and jewelry. The advantages of this investment is the price was set in USD. If an increase in the value of the USD, people who have a gold investment is getting two benefits, from rising dollar and rising gold price itself. However, if the opposite occurs, this could be a double-edged sword. To support decision making when to sell or buy, people need a prediction system for predicting the gold price in the future. Therefore, in this thesis, the author tries to build a prediction system that can predict the gold price in the future.

The price of gold is the data time series. There are varios technical indicators such as Moving Average (MA), Moving Average Convergen divergent (MACD), Relative Strength Index (RSI), and Bollinger Bands to know the price of selling/buying. Then through a prediction system that was built by applying evolving Fuzzy System using Differential Evolution algorithm optimization, and data in the process of pre-processing with four formula technical indicators, will produce an optimal prediction system.

From the observation that have been done using data pre-processing with formula from the four indicators. The best prediction results obtained by the MAPE (Mean Absolute Percentage Error) 2.82% and 97.18% accuracy for data scenarios RSI.

***Keywords**: evolving Fuzzy Systems, Differential Evolution, Moving Average (MA), Moving Average Convergen divergent (MACD), Relative Strength Index (RSI), Bollinger Bands, prediction, time series, gold.*