

ABSTRACT

Portfolio is a one risky investment. Portfolio that usually contain some share asset always has a uncertainty risk, it will be take a profit or making a loss. Because of that, those investor very careful, even some of them are afraid to make an investment on this. A loss is a risk when someone taking a portfolio investment. But, untill today no one can determine how big the risk that can we get. In order of that, this final assignment will do an assetment in determine the maximum loss that usually called Value-at-Risk (VaR).

In this research we will determine VaR for every share asset (securities) in LQ45 index. Using one year price of stocks in LQ45, we will calculated each return value. Data will be seperated into two, training and testing data. Method that we used are Peak Over Threshold (POT) method which is one of the Extreme Value Theory (EVT) Method and Newton Raphson Jacobian Method with genetic algorithm approach.

The results acquire that VaR accuracy on LQ45 index are 74.41% with Mean Absolute Error (MAE) 25.59% this results are from several genetic algorithm parameter which has for generation about 1000, population about 20, cross-over probability 0.8, gen mutation probability 0.05, and confidence level 99 percent.

Keywords : *Portfolio, Value-at-Risk, Peak Over Threshold, Extreme Value Theory, Newton Raphson Jacobian, Genetic Algorithm.*