

## ***Abstract***

*Value-at-Risk ( VaR ) measures maximum of loss rate from given portfolio, lender certain confidence interval and time holding period. There are three methods for measures VaR : historical simulation , Variance - Covariance , and Monte Carlo simulation.*

*Research for final project, have measured daily closed index portfolio LQ45 August 2013 until January 2014. Method used Variance Covariance and Monte Carlo simulation with confidence level 80%, 90%, 95% and 99%. Method Variance - Covariance faster than Monte Carlo simulation. Time execution of Variance - Covariance showed 3.219 s but Monte Carlo simulation time execution depends on iterations. More iterations, caused the longer execution time calculation. Error Monte Carlo simulation better than Variance - Covariance method. Result MAD for Variance - Covariance with confidence level 80% is 0,0200959, but MAD for Monte Carlo simulation is 0,0208848 Result for ANOVA one way test, showed there are significant different VaR.*

*Result VaR useful for stakeholder to manage portfolio.*

***Keywords:*** *Value-at-Risk, LQ45, Variance - Covariance, Monte Carlo Simulation*