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*