Abstract

Every investor expects a high return value with the lowest risk possible, and the risk value of every investments cannot be easily predicted. In this case, to obtain a risk value of a stock we can use the Value-at-Risk as the tool. Basically, the characteristics of financial data have tendency of heavy tail distribution. The determination of VaR value using the characteristics of financial data have tendency of heavy tail distribution, and one of it is student-t. Therefore in this Final Project is used the time series model which are Generealized Autoregressive Conditional Heteroscedasticity (GARCH) and Glosten-Jagannathan-Runkle model to determine Value-at-Risk value on a stock asset which has normal distribution and student-t distribution with error rate 10%, 5% and 1%. To get relevant result, both of the time series model are compared to get the accurate VaR value. Based on the result of the analysis, time series model which is GARCH of distribution Normal have better result with 42,76 of mean error value to prediction VaR for one stock asset of PT.XL Axiata, while on entirety best model based on mean error smallest value is historical simulation with 14,96 value.

Keywords: VaR, GARCH, GJR, Historical Simulation, VaR Violation, and Risk.