ABSTRACT

Investment is the commitment of current funds for future gains with stocks being one of the most popular investment instruments. Proper stock selection is very important to maximize profits and minimize risk. This study aims to optimize a stock portfolio using the Mean-Semivariance method combined with Karush-Kuhn-Tucker (KKT) to ensure all weights in the portfolio are positive. Mean-Semivariance is used to evaluate portfolio risk by focusing on downside risk without assuming a normal distribution of stock returns. The KKT method is applied to add constraints to the model to ensure all weights are positive, so that short selling practices can be avoided. Stock selection on the IDX Growth 30 (IDXG30) index produces PT Bank Central Asia Tbk (BBCA), PT Indosat Ooredoo Hutchison Tbk (ISAT), and PT Indo Tambangraya Megah Tbk (ITMG) based on positive expected returns in the post-Covid-19 pandemic period. The portfolio formed has a weight of 65,07% for BBCA, 26,31% for ISAT, and 8,62% for ITMG. Portfolio risk is measured using Value at Risk (VaR) with the Historical Simulation method which shows a value of 1,63% for a one-day holding period with a confidence level of 95%. Portfolio performance is assessed using Sortino Ratio with a value of 0,044356 which shows better profit potential than the average risk-free investment of 0,000165.

Keywords: Stock Portfolio, Mean-Semivariance, Karush-Kuhn-Tucker, Value at Risk, Historical Simulation, Sortino Ratio