ABSTRACT

Stocks are the main investment choice because of their ability to provide attractive returns. In investing, risk diversification is the main strategy that investors carry out to maximize profits while minimizing risks. One approach to minimize risk is to form a portfolio consisting of several stocks in optimal proportions. The number of stocks that make up a portfolio can be determined through cluster analysis, which groups data based on variables such as Return on Equity (ROE) and Earning Per Share (EPS) to describe company performance. The Ward Clustering method is used in this grouping to maximize uniformity in each cluster and the results are validated with Silhouette Coefficient to determine the optimal number of clusters. This grouping is the basis for the preparation of IDXBUMN20 stocks issued in February 2024 and then used as the basis for portfolio formation using the Mean-Semivariance method. To calculate the VaR of the portfolio, the Historical Simulation method is used. Portfolio performance measurements are carried out with the Sharpe Index. The study found that the best number of clusters was four clusters, where representative stocks from each cluster were selected to form a portfolio. The selected stock must have a positive expected return value. The portfolio formed shows an investment weight of 37,91% for PGAS shares, 51,17% for BMRI shares, 10,92% for BRIS shares. The longer an investor holds stocks in a portfolio with the same level of confidence, the greater the value of the Historical Simulation VaR or the maximum potential loss that can occur. The Sharpe Index value for this portfolio is 0,06465049, indicating that the portfolio is performing better than risk-free investments.

Keywords: Ward Clustering, IDXBUMN20 Stock Index, Mean-Semivariance Portfolio, VaR Historical Simulation, Sharpe Index