ABSTRACT

The effort to minimize risk is by forming portfolio of several stocks. Investment will yield maximum returns if investor can select stocks based on clustering, such as the company's profitability. In this research, Partitioning Around Medoids (PAM) method will be used for data that contain outliers. Stocks are grouped based on Return on Assets (ROA), Return on Equity (ROE), dan Net Profit Margin (NPM) which represent eficiency, profitability, and ability of the company to generate profit. Validate cluster result using Davies-Bouldin Index to determine the optimal number of clusters. The portfolio weights using *Multi Index Model* method are considered better in estimating expected return, standard deviation, and covarian because this method considers more than one factor that affects the stock. In this research, Composite Stock Price Index (IHSG) and the rupiah to USD exchange rate are used as factors. Portfolio performance is measured using the Sharpe Index. The Value at Risk (VaR) calculation is performed using the Historical Simulation method. The clustering results for IDX Cyclical Economy 30 produced four stocks for optimal portfolio, based on the highest expected return in each cluster, consisting of FILM, BRMS, BRIS, and SRTG. The calculation results in an investment weight of 20,76% for FILM, 27,93% for BRMS, 16,36% for BRIS, 34,95% for SRTG. The Sharpe index value of the optimal porfolio formed is 0,3323, indicating that the portfolio is capable to generate better returns than a risk-free investment. The risk measurement results using Value at Risk with Historical Simulation at a 95% confidence level and a holding period of 1 month are 0,12574022, holding period of 3 month are 0,21778846, and holding period of 6 month are 0,30799939.

Keywords: *Clustering, PAM, Portfolio, Multi Index Model, Sharpe Index, Value at Risk Historical Simulation*