

ABSTRACT

In stock trading, returns are influenced by various risk factors, both systematic and non-systematic. The Fama-French three-factor model explains return variation through three systematic risks, namely market risk, firm size, and book-to-market. Subsequently, this model was developed into the Fama-French five-factor model by adding the factors of profitability and investment, which are theoretically the main determinants of company value. This study uses data from 29 stocks as samples during the research period from January 1, 2023, to December 31, 2024. The regression results show that the average adjusted R^2 value of the Fama-French five-factor model is 70%, while the average adjusted R^2 value of the Fama-French three-factor model is 53%. The increase in the adjusted R^2 value shows that the Fama-French five-factor model is better at explaining return than the Fama-French three-factor model. The estimated returns of BRPT, BMRI, INDF, BBCA, and ERAA stocks using the Fama-French five-factor model are then used to form an optimal portfolio using the Mean Variance Efficient Portfolio and Quadratic Programming methods. The use of the Quadratic Programming method aims to overcome the problem of short selling in asset allocation in the portfolio. The weights of each stock are obtained in sequence as 0%, 0%, 75%, 25%, and 0%. Portfolio performance measured using the Sharpe Ratio shows a result of 0.006, indicating that the portfolio's performance is relatively low in generating excess return relative to the risk incurred. Furthermore, the estimated maximum potential loss measured using the Value at Risk Historical Simulation method with a significance level of 5% on an initial investment value of IDR 10,000,000 and a holding period of 10 days is IDR 265.412.

Keywords: Fama-French Five Factor, MVEP-QP, Portfolio Optimisation, Return, Sharpe Ratio