

ABSTRACT

Sharia investment is increasingly developing, especially in stock investment. Portfolio optimization is needed to minimize risk when investing in stocks, but conventional portfolio optimization still has limitations. The Capital Asset Pricing Model (CAPM) in conventional portfolios uses an of interest-based risk-free rates and no restrictions on short-selling practices. This study aims to form an optimal portfolio using the Shariah Compliant Asset Pricing Model (SCAPM) with Quadratic Programming (QP) optimization without short selling on Jakarta Islamic Index (JII) stocks. The data used are monthly closing prices from 1 August 2020 - 15 October 2024. Stock selection is carried out based on complete data, positive expected returns, normality tests, and low correlations. The selection results based on these criteria produce five stocks, namely BRMS, ICBP, KLBF, ITMG, and TLKM. QP portfolio optimization overcomes short-selling by adding non-negativity constraints, resulting in an optimal portfolio weight distribution with BRMS 4.47%, ICBP 25.03%, ITMG 2.89%, KLBF 46.25%, and TLKM 21.35%. Portfolio risk is measured using the Value at Risk (VaR) Historical Simulation method with a confidence level of 95%, indicating a maximum potential loss 4.544% in a 1-month investment period. Portfolio performance is measured by the Sharpe Index and produces a positive value of 0.02352, this means that the portfolio formed is good. Shariah Compliant Asset Pricing Model (SCAPM) portfolio optimization with Quadratic Programming is able to form an optimal portfolio according to Sharia principles (does not contain usury, gharar, or maysir), avoids short-selling, and provides a better rate of return with controlled risk.

Keywords: Portofolio Optimization, SCAPM, Quadratic Programming, VaR, Sharpe Index