ABSTRACT

Portfolio optimization is crucial in investment to maximize returns while minimizing risks. This study aims to construct an optimal portfolio based on the Liquidity Adjusted Capital Asset Pricing Model (LCAPM) without short selling, optimized through Quadratic Programming on IDX30 stocks. The LCAPM model incorporates liquidity risk as a critical factor in investment decision-making, while the Quadratic Programming method ensures non-negative portfolio weights. Short selling is a strategy of selling stocks without owning them first. This research utilized historical data on closing prices, trading volumes, and listed shares from five IDX30 stocks with positive expected returns and normal distribution during the period from January 1, 2020, to August 31, 2024. The selected stocks are ARTO, AMRT, ACES, MEDC, and MDKA. The optimal portfolio weights were calculated using Quadratic Programming to eliminate short selling practices and improve portfolio performance. The results show that the largest optimal portfolio weight is allocated to ACES at 39.16%, while the smallest allocation is to MDKA at 5.79%. The Sharpe Index value increased after optimization, proving that the optimized portfolio performed better than the pre-optimized portfolio. Portfolio risk measurement using Value at Risk (VaR) with the Historical Simulation method indicates a maximum loss of 20,97% over one year for an initial capital of IDR 10.000.000. This study recommends investors adopt this optimization method to generate portfolio allocation tailored to market conditions.

Keywords: LCAPM, Quadratic Programming, portfolio optimization, Value at Risk, Sharpe Index