ABSTRACT

Stock portfolio optimization is carried out to achieve an optimal combination of stock weights while reducing investment risk. Choosing the right optimization method is essential, as it must produce an optimal portfolio without violating sharia principles, given that most Indonesians are Muslim. The Wolfe method of Quadratic Programming is used in this study to minimize risk at a specific expected return level while avoiding sharia-violating practices like short selling. This study applies the Wolfe method to optimize sharia stock portfolios using stocks consistently included in the Jakarta Islamic Index in 2023, selected through Ward Clustering. The Ward Clustering process is based on financial ratios: Return on Assets, Return on Equity, and Gross Profit Margin. The optimization results showed stock weights of 53.92% for TPIA, 0% for ACES, and 46.08% for UNVR. These weights produced an optimal portfolio with an expected return of 0.0058 and a risk level of 4.66% for a one-week holding period, calculated using the Historical Simulation method. The Wolfe method of Quadratic Programming effectively delivers an optimal portfolio aligned with investors' preferences for expected return and risk while adhering to sharia principles by excluding practices such as short selling.

Keywords*: Sharia Portfolio, Quadratic Programming, Wolfe's Method, Ward Clustering, Short Selling, Historical Simulation.*