ABSTRACT

The growth of retail investors in the Indonesian capital market has increased the need for portfolio analysis tools that not only display price movements but also measure performance and risk quantitatively. This study aims to design and develop a Streamlit-based web application for stock portfolio analysis in the Indonesian capital market. The application was developed in Python using daily closing price data of stocks and the Indonesia Composite Index (IHSG) obtained from Yahoo Finance. Users can specify stock composition, portfolio weights, investment amount, risk-free rate, and observation period. The application computes annual return, cumulative return, alpha, beta, Sharpe Ratio, Sortino Ratio, Treynor Ratio, annualized volatility, maximum drawdown, parametric and historical Value at Risk, and Conditional Value at Risk, and presents the results in an interactive dashboard. As an illustration, an equally weighted portfolio of four banking stocks—PT Bank Central Asia Tbk, PT Bank Negara Indonesia (Persero) Tbk, PT Bank Mandiri (Persero) Tbk, and PT Bank Rakyat Indonesia (Persero) Tbk—was analyzed for the period January 1, 2023 to December 31, 2025, with an initial investment of IDR 100,000,000. The results show a cumulative return of 8.71%, a Sharpe Ratio of -0.11, a maximum drawdown of -34.12%, and a 95% VaR of approximately 2.46%.

Keywords: stock portfolio, portfolio performance, portfolio risk, value at risk, Streamlit, Indonesian capital market.