

ABSTRACT

Stock portfolio construction in the Indonesian capital market focuses on high-credit-quality stocks included in the PEFINDO i-Grade Index. The Capital Asset Pricing Model (CAPM) is used to determine the relationship between systematic risk and expected returns, as well as to serve as the basis for determining expected returns and establishing stock weightings within the portfolio. Ward Clustering is used to group stocks based on the similarity of their fundamental characteristics, thereby facilitating a more structured stock selection process. This study aims to integrate these two methods to enhance the efficiency of stock selection and portfolio performance. The data used consists of the fundamental ratios of Earnings per Share (EPS), Return on Assets (ROA), and Return on Equity (ROE) for the second quarter of 2025 from 25 PEFINDO i-Grade stocks, daily closing stock prices and the IHSG from April through November 2025, as well as the BI Rate as the risk-free rate. The data was standardized using Maximum Absolute Scaling, followed by stock clustering using the Ward method and the determination of the optimal number of clusters using the Silhouette Coefficient. The results of the study indicate that the optimal number of clusters formed is 4, with a Silhouette Coefficient of 0.640020. The representative stocks comprising each cluster's portfolio were selected based on the highest positive expected return. The stocks selected as representatives for each cluster—ISAT, BRPT, DSSA, and INKP—also satisfy the assumption of multivariate normality as portfolio components. Portfolio construction using the CAPM yields stock weights of ISAT (29.47%), BRPT (26.60%), DSSA (16.50%), and INKP (27.43%). Portfolio performance evaluation shows a Sharpe Index of 0.127089, a Treynor Index of 0.002024, and a Jensen's Alpha of 0, indicating that the portfolio performs well and is in equilibrium according to the CAPM. Risk measurement using the Value at Risk (VaR) method via Historical Simulation at a 95% confidence level with a one-day holding period indicates a maximum potential loss of Rp3,249,038.00, or 3.249% of the initial capital.

Keywords: CAPM, *Ward Clustering*, PEFINDO i-Grade, *Portfolio*, *Sharpe Index*, *Treynor Index*, *Jensen's Alpha*, *Historical Simulation*