

## ABSTRACT

Unstable stock price fluctuations cause stock return data in the capital market to tend not to be normally distributed and show continuity between positive and negative return distributions, thus becoming a challenge in portfolio formation. Mean-Variance-Skewness (MVS) portfolio optimization offers a solution with skewness accounting to handle the asymmetry between positive and negative return distributions. Data Envelopment Analysis (DEA) is used as an analysis of efficiency measurements of the company's financial performance factors as an initial step before forming a portfolio. Investor preferences for risk are divided into three categories, namely risk seekers, risk averters, and risk neutral investors. Choosing the right stock is an important step to ensure an investment strategy. The IDX Growth30 Index (IDXG30) can be a reference because it has high growth potential in the Indonesian capital market. This study aims to apply the Mean-Variance-Skewness method in portfolio optimization using Newton-Raphson iteration based on efficient stock selection with Data Envelopment Analysis on daily stock data listed in the IDXG30 index for the period 1 September 2023 to 30 August 2024. The results of the study indicate that there are 4 efficient stocks, namely AMRT, INDF, ITMG, and SIDO. The optimal portfolio was successfully obtained through the optimization process according to the preferences of each type of investor. Based on the Value at Risk value, the portfolio with risk seeker preference has the highest risk, which is 10.38%. Meanwhile, the risk averter preference shows the lowest risk, which is 2.95%. For risk neutral preference, there is an increase in mean return that is proportional to the increase in risk. This study shows that the Mean-Variance-Skewness (MVS) model that integrates the three statistical moments can be an effective approach in forming a portfolio, especially when the market is unstable and allows risk management according to investor preferences.

**Keywords:** Data Envelopment Analysis, Portfolio, Mean-Variance-Skewness, Newton-Raphson, Value at Risk, Historical Simulation