Abstract

A portfolio is a collection of financial assets and investments managed by financial institutions, investment managers, or individuals. In investment activities, investors expect a minimum risk of loss in stock investments and, of course, the optimum stock portfolio weight to get maximum profit. Current stock price movements are difficult to predict; however, investors can monitor changes in the stock index value from time to time. These changes can be used as a measuring tool to compare the portfolio's performance. More knowledge is needed to make it easier for investors to monitor changes in the value of their stock index. This research has discussed how to build a portfolio based on stock datasets with the LQ45 index using return predictions from the artificial neural network (ANN) method with semi-absolute deviation (SAD). Furthermore, the portfolio is optimized by looking for weights that match it. After that, a comparison of portfolio performance was carried out using the Sharpe ratio (SR) method between the semi-absolute deviation (SAD) portfolio and the portfolio resulting from the formation of the equal weight (EW) portfolio. Portfolio performance with ANN prediction and SAD is better than equal weight portfolios in terms of mean return and sharpe ratio for portfolios with few stocks, namely 2 and 3 stocks. In addition, portfolio with a higher number of shares can make the portfolio value from the ANN close prediction algorithm process and the selection of weights based on SAD better than, portfolios with equal weight of each list of stocks in the portfolio.

Keywords: portfolio, artificial neural network, semi absolute deviation, sharpe ratio

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