**Abstract**

**Portfolio allocation is an investment strategy in which investors determine the weight for each stock in the portfolio. Using a portfolio, an investor can manage the return and the risk of stock investments. Many methods have been developed to manage a portfolio. One of the most recent methods is Deep Reinforcement Learning (DRL). DRL is used to build a portfolio with previously obtained weights. In this study, DRL is applied to construct a portfolio that consists of stocks in the LQ45 index in the Indonesian Stock Exchange. The data used is the daily closing price data from 2014 to 2020. The experiment was conducted by including a combination of the number of shares in the portfolio 3, 5, 7, and 42 stocks. Our results show that the portfolio value and Sharpe ratio of the DRL portfolio are better than the Equal Weight (EW) and Mean-Variance (MV) portfolios with a combination of a small number of 3 and 5 stocks. The performance of the DRL portfolio will be much better if there are not too many stocks being managed in the portfolio.**

***Keywords: Portfolio Allocation, Deep Reinforcement Learning, LQ45***