

## **ABSTRACT**

Composite Stock Price Index (IHSG) is a stock index on the Indonesia Stock Exchange that can be used as a benchmark to assess the overall condition of the stock market. IHSG is often used by investors to determine their investment strategy in Indonesia. The erratic fluctuation of IHSG is a challenge for investors in determining their investment strategy. Investors need a method for forecasting, in order to make the right decision when investing. Gated Recurrent Unit (GRU) is an RNN architecture that uses a gate system to regulate all information on each input. The complex architecture of GRU allows it to predict IHSG very well. This study was conducted with the aim of finding the best GRU model by comparing the Adaptive Moment Estimation (Adam) and Adamax optimization methods in predicting IHSG. The application of these two optimization methods to the GRU model can improve the accuracy of IHSG prediction, because the algorithm is able to adjust the learning rate during training. The GRU model, tested on daily IHSG closing prices from January 2018 to April 2024, showed that using Adam's optimization with a batch size of 16, 16 GRU units, and a learning rate of 0.001 achieved the best results, resulting in a MAPE of 0.55%. This model will be used to forecast the IHSG for the next 30 periods.

**Keywords:** IHSG, Forecast, Gated Recurrent Unit, Adam, Adamax