

### **Abstract**

LQ45 is the stock market index for IDX that is interesting to be predicted since it reflects the top 45 of IDX market place. This work adopts a Fuzzy time series based on adaptive expectation model for LQ45 index prediction. The most interesting and important steps are Fuzzification to obtain linguistic values and determining Fuzzy logical relationship and the mapping within the group to calculate the value of change. Then, by adaptive expectation model, the index is predicted. We show the prediction performance of several scenarios based on RMSE values regarding splitting technique in linguistic value determination and searching for the best-weighted parameter in adaptive expectation model. The discussion is provided for either the prediction of stock value and prediction for return. In this study we obtained a comparison of RMSE error calculations result with LQ45 stock close value and return value, respectively 2.423 and 12.288. The result of this study prediction with stock close value are more accurate the with return value.

**Keywords:** Prediction, stock price, fuzzy time series, adaptive expectation.