

***APPLICATION OF THE HOLT WINTER EXPONENTIAL SMOOTHING AND
AUTOREGRESSIVE INTEGRATED MOVING AVERAGE METHOD FOR
ANTAM'S GOLD PRICE PREDICTION IN INDONESIA***

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ABSTRACT

Antam's gold is a precious metal that is in great demand by the public as a very profitable investment option. Antam's gold price fluctuations make investors confused. So the researchers wanted to do a comparison of the Holt Winter Exponential Smoothing and Autoregressive Integrated Moving Average methods to predict Antam's gold price in Indonesia in the next few days. The data was taken from the official website Logammulia.com with a time range from 1 May 2018 to 31 May 2023. The programming language used is Python. Predictions using the Holt Winter Exponential Smoothing method using additive models and parameters $\alpha = 0.8889286$, $\beta = 0.0329233$ and $\gamma = 0.0123413$ produce a MAPE value of 0.45% for Train data and 14.15% for Test data, while predictions use the Autoregressive Integrated Moving Average method with the model $ARIMA(1,1,0)(0,1,3)[7]$ produces a MAPE value of 0.67% for Train data and 12.99% for Test data. Based on the MAPE values of the two methods, it can be concluded that the Autoregressive Integrated Moving Average method with the $ARIMA(1,1,0)(0,1,3)[7]$ model is the best model in predicting Antam's gold price in Indonesia.

Keywords : *Forecasting, Antam's Gold Price, Holt Winter Exponential Smoothing, Autoregressive Integrated Moving Average, Python, MAPE*