

ABSTRACT

Gold is a one of high selling value items in the market, and it can be used as an investment item. The price of gold in the market tends to be stable and not undergoing too significant changes which makes gold be a very valuable item. The aim of this research is to predict gold price using AR (1) and ARCH (1) model which are the part of time series methods. The data of gold price is obtained from ANTAM's daily historical website from 2007 - 2017. Here, the basic information about data is given by using descriptive statistic and the estimation of parameters in each model is conducted by using *Maximum Likelihood Estimation* (MLE). To evaluate the model, *Mean Absolute Error* (MAE) and *Root Mean Square Error* (RMSE) are used. In this research, the estimated model of AR (1) and ARCH (1) given as $X_t = -0.012X_{t-1} + \varepsilon_t$ and $X_t = \varepsilon_t \cdot \sqrt{0.000053 + 0.011958X_{t-1}^2}$ respectively. Moreover, the result of MAE and RMSE using AR (1) model are 0.0261 and 0.0342 respectively, meanwhile for ARCH (1) model are 0.0170 and 0.0251 respectively.

Keywords: AR, ARCH, Gold price prediction, MLE, MAE, RMSE.