ABSTRACT

CONSTRUCTING DELTA VARIANT POSITIVE COVID-19 CASE FORCASTING MODELS USING ARIMA-GARCH MODEL

by

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Coronavirus disease (COVID-19) is a group of viruses that can cause disease in the raspiratory system. COVID-19 virus is causing a pandemic in more than 200 countries around the world . Indonesia is one of the countries exposed to COVID-19. There are various dangerous new variants, one of them is the delta variant which attacts almost the whole area of Indonesia. To overcome this issue, this study has constracted daily cases of positive COVID-19 forcasting models using a combination of *Autoregressive Integrated Moving Average* (ARIMA) and *Generalized Autoregressive Conditional Heteroskedasticity* (GARCH) models. The data observed are daily data of delta variant positive COVID-19 cases from June 11, 2021 to October 28, 2021. The model is constructed using *Eviews.10* program. The obtained model is ARIMA(6,2,1) and ARIMA(6,2,1)-GARCH(0,2). The results showed that the best model is ARIMA(6,2,1)-GARCH(0,2) model which has *Mean Absolute Percentage Error* (MAPE) value for the calibration data amounting 1,623428%.

Keyword : COVID-19, forecasting, ARIMA, GARCH, *Eviews.10*