ABSTRACT

APPLICATION OF AUTOREGRESSIVE INTEGRATED MOVING AVERAGE (ARIMA) ENSEMBLE METHOD IN FORECASTING INFLATION RATE IN INDONESIA

By

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ARIMA ensemble is a method of combination forecast result from multiple ARIMA models. Ensemble method used to combine the forecast result in this study were averaging and stacking. The data used in this study is the monthly inflation of Indonesian from January 2009 to December 2021. The results showed that for forecasting the next six months ensemble averaging method produces the smaller RMSE values and obtained models $Z_t = \frac{1}{2}\sum_{i=1}^{2} z_t^{(i)}$ where $z_t^{(1)}$ is ARIMA models (2,1,1) dan $z_t^{(2)}$ ARIMA models (0,1,2). Based on ARIMA ensemble averaging model the monthly inflation forecasting Indonesia in the next six months will continue to increase.

Kata Kunci: ARIMA, ARIMA ensemble, inflation

ABSTRAK

PENERAPAN METODE *AUTOREGRESSIVE INTEGRATED MOVING AVERAGE* (ARIMA) *ENSEMBLE* DALAM PERAMALAN LAJU INFLASI DI INDONESIA

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ARIMA *ensemble* merupakan metode kombinasi hasil peramalan dari beberapa model ARIMA. Metode *ensemble* yang digunakan untuk menggabungkan hasil peramalan dalam penelitian ini adalah *averaging* dan *stacking*. Data yang digunakan dalam penelitian ini adalah inflasi bulanan Indonesia dari bulan Januari 2009 hingga Desember 2021. Hasil penelitian menunjukkan menunjukkan bahwa peramalan enam bulan mendatang metode *ensemble averaging* menghasilkan nilai RMSE terkecil dan diperoleh model $Z_t = \frac{1}{2}\sum_{i=1}^{2} z_t^{(i)}$ dimana $z_t^{(1)}$ model ARIMA (2,1,1) dan $z_t^{(2)}$ model ARIMA (0,1,2). Berdasarkan ARIMA *ensemble averaging* model perkiraan inflasi bulanan Indonesia enam bulan mendatang mengalami kenaikan terus menerus.

Kata Kunci: ARIMA, ARIMA *ensemble*, inflasi