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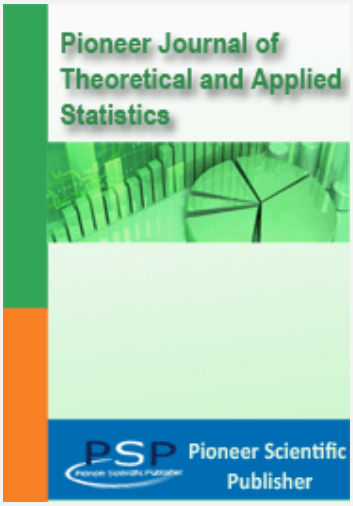

ON THE COMPARISON OF SOME MODELS FOR ESTIMATING AUTOCORRELATED TIME SERIES

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Abstract

Regression model assumes that the error terms are non-correlated. This is not always true with time series data as observations at one point in time often tend to be correlated with nearby observations. Durbin Watson test was carried out to determine whether or not the error terms are autocorrelated. Where autocorrelation existed, various models for estimating time series with autocorrelation were employed to model the series. The models used are Autoregressive model (AR), Moving Average model (MA), The Autoregressive Moving Average model (ARMA) and Integrated Moving Average model (ARIMA). These models were used on the exchange rate of Naira per Dollar at various market segments and then compared using the standard error and the ratio of coefficient to standard error criteria to obtain the model that best fit. Results however suggest that mixed models at smaller lags should often be adopted in modeling financial time series with evidence of autocorrelated error terms.

Keywords and phrases: exchange rate, ordinary least square (OLS), stationarity, serial autocorrelation, autocorelogram, partial autocorelogram, ARIMA model, standard error, Naira, Dollar.