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Asymmetric Power ARCH Modeling of Nigerian Stock Market Volatility.

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Abstract

This study investigated the performance of APARCH model for four different innovations (student's t , normal, skewed student's t and generalized error innovations) using Nigerian daily stock price series from 30/01/2012 to 03/10/2024, yielding a total of 3139 observations [1,2]. The aim was to determine the innovation distribution that best captures the asymmetry and kurtosis exhibited by the returns on financial data [3]. The unit root test was carried out using the augmented Dickey-Fuller (ADF) test, and the result revealed that the returns on the series was stationarity. The ARCH LM-test detected the presence of ARCH effects, which justified the use of the GARCH model. Findings of the study revealed that the forecast from APARCH (1,1) model with the generalized error distribution has strong numerical accuracy with low MAE (0.002906).

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