

## Downside Risk Analysis of the Nigerian Stock Market: A Value at Risk Approach

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**Abstract :** This paper using standard GARCH, EGARCH, and TARARCH models on day of the week return series (of 246 days) from the Nigerian Stock market estimated the model variants' VaR. An asymmetric return distribution and fat-tail phenomenon in financial time series were considered by estimating the models with normal, student t and generalized error distributions. The analysis based on Akaike Information Criterion suggests that the EGARCH model with student t innovation distribution can furnish more accurate estimate of VaR. In the light of this, we apply the likelihood ratio tests of proportional failure rates to VaR derived from EGARCH model in order to determine the short and long positions VaR performances. The result shows that as alpha ranges from 0.05 to 0.005 for short positions, the failure rate significantly exceeds the prescribed quintiles while it however shows no significant difference between the failure rate and the prescribed quantiles for long positions. This suggests that investors and portfolio managers in the Nigeria stock market have long trading position or can buy assets with concern on when the asset prices will fall. Precisely, the VaR estimates for the long position range from -4.7% for 95 percent confidence level to -10.3% for 99.5 percent confidence level.

**Keywords :** downside risk, value-at-risk, failure rate, kupiec LR tests, GARCH models

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