|  |
| --- |
|  |
| Journal Name: | [**Asian Journal of Probability and Statistics**](https://journalajpas.com/index.php/AJPAS) |
| Manuscript Number: | **Ms\_AJPAS\_130783** |
| Title of the Manuscript:  | **Asymmetric Power Autoregressive Conditional Heteroscedasticity Modelling Interest Rate Return in Nigeria** |
| Type of the Article |  |

|  |
| --- |
| PART 1: Comments |
|  | Reviewer’s comment | Author’s Feedback *(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | GARCH modelling is a traditional methodology for analysing financial and economic dynamics. It allows assessing the impact on its volatility of both market factors and disturbances of a different social nature. Based on the general tendency to deepen the content and quality of research in the field of econometrics, the authors investigate approaches to the use of GARCH models for modelling the dynamics and volatility of the cost of credit resources in the Nigerian financial market. In particular, they found the most suitable for this purpose asymmetric GARCH - APARCH. Based on the classical tools, the paper confirms the absence of stationarity in the time series of financial indicators, which is inherent in many transitional economies in Africa and other countries of the world. In addition, by combining a number of methods (visual and statistical analysis), the paper establishes the presence of volatility clustering in the transformed data series, which in many cases correlates with similar processes in other countries during the global financial crisis.  |  |
| **Is the title of the article suitable?****(If not please suggest an alternative title)** | The title of the article corresponds to its purpose and the results of the study |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | The content of the abstract in the abstract reveals the results of the study. |  |
| Is the manuscript scientifically, correct? Please write here. | The layout of the manuscript, in particular its structure and the order of presentation of the conditions and results of the research, meets the general requirements for the design of studies in econometrics. At the same time, in the section on the enlightened coverage of the results of the conclusions, it would be advisable to focus on the practical application of the model to the Nigerian economy, in particular, to make a forecast for 1-12 periods ahead, as well as to carry out retrospective verification on a control sample from the study period |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | The paper mainly analyses the results of studies by Bollersehev, Engle, Iulian, Volodymyr. It would also be advisable to pay attention to recent studies by David Ardia, Luc Bauwens, Giovanni Barone-Adesi, Matteo Manera and others, which would expand the list of sources |  |
| Is the language/English quality of the article suitable for scholarly communications? | The language and quality of the article meets the generally accepted requirements for the design in the chosen language. The abbreviations and methods used are acceptable and understandable to the scientific community |  |
| Optional/General comments | At the same time, there are a number of comments on the study itself1. The conclusion about the best fit of the APARCH (1,1) model is based on the lowest values of the AIC and SC criteria, but verification by BIC is advisable.2. The AIC values for the conventional GARCH and APARCH differ within the statistical error, which also gives rise to doubts about the feasibility of using APARCH exclusively.3. The correlogram of squared standardised residuals contains outliers at 12 and 24 lags, which suggests that it is advisable to analyse the raw data for the presence of annual or multiple cyclicality and take it into account in the model by including annual lags, at least the number of points in the time series, which totals 324, suggests such a possibility.4. The Q-Q graph contains ‘heavy’ tails, which casts doubt on the conclusion about the normality of the results obtained in the modelIn our opinion, there are no ethical issues related to the potential harm from its conduct and application of the results for society and the environmentThere are no competing interests in the manuscriptThere are no signs of plagiarism in the peer-reviewed manuscript |  |

|  |
| --- |
| **PART 2:**  |
|  | **Reviewer’s comment** | **Author’s comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)* |
| **Are there ethical issues in this manuscript?**  | *(If yes, Kindly please write down the ethical issues here in details)* |  |

|  |
| --- |
| **Reviewer Details:** |
| Name: | **Vitaliy Makohon** |
| Department, University & Country | **State Biotechnological University, Ukraine** |