

### Review Form 3

|                          |  |
|--------------------------|--|
| Journal Name:            | <a href="#">Asian Journal of Probability and Statistics</a>  |
| Manuscript Number:       | Ms_AJPAS_125287  |
| Title of the Manuscript: | Interest Rate Risk Modelling Using Semi-Heavy Tail Distributions of Normal Variance-Mean Mixtures: Central Bank of Kenya Interest Rates. |
| Type of the Article      | Original Research Article  |

#### **General guidelines for the Peer Review process:**

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

<https://r1.reviewerhub.org/general-editorial-policy/>

#### **Important Policies Regarding Peer Review**

Peer review Comments Approval Policy: <https://r1.reviewerhub.org/peer-review-comments-approval-policy/>

Benefits for Reviewers: <https://r1.reviewerhub.org/benefits-for-reviewers>

**Review Form 3**

**PART 1: Review Comments**

| <b>Compulsory</b> REVISION comments  | <b>Reviewer's comment</b>  | <b>Author's Feedback</b> (Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here) |
|--|--|---|
| <b>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</b>                        | The distribution of interest rates, therefore, needs to be well understood to reduce the risks of losses associated with it. The Binomial Option pricing model assumes that interest rates are constant, with no returns, throughout the life of the option. Another common assumption of the underlying economic variables is that their returns are normally distributed with constant volatility. These assumptions have been used in pricing derivatives and currencies and has led to over-pricing and in some cases under-pricing. These assumptions have been considered inaccurate and misleading. This research uses mixture models exhibiting properties that appropriately capture the peakedness and skewness of interest rates as fundamental variables in pricing. The models of the Normal Variance-Mean Mixtures shows better performance than the normal distribution. The GARCH model is used under the assumption that 91-day Treasury Bills interest rates follow a Generalized Hyperbolic distribution while the Commercial Bank interest rates follows a Normal Inverse Gaussian distribution. |   |
| <b>Is the title of the article suitable? (If not please suggest an alternative title)</b>  | <b>Yes</b>   |   |
| <b>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.</b>   | <b>Yes, Article is comprehensive</b>   |   |
| <b>Are subsections and structure of the manuscript appropriate?</b>  | <b>Yes</b>   |   |
| <b>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</b> | Secondary data for 91-day Treasury Bills interest rates and Commercial Bank Weighted average interest rates (Base lending rates) from the Central Bank of Kenya from 1991 to 2021 were used. The log was used to eliminate the unit root behavior intrinsic to It and therefore achieving stationarity. Maximum likelihood method was used to estimate the parameters.   |   |
| <b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b>   | <b>Yes</b>   |   |
| Minor REVISION comments<br><b>Is the language/English quality of the article suitable for scholarly communications?</b>  | Language used is proper  |   |
| <b>Optional/General</b> comments   | -----  |   |

**PART 2:**

|   | <b>Reviewer's comment</b>  | <b>Author's comment</b> (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) |
|---|--|--|
| <b>Are there ethical issues in this manuscript?</b> | <i>(If yes, Kindly please write down the ethical issues here in details)</i> |  |

**Reviewer Details:**

|                                  |                             |
|----------------------------------|-----------------------------|
| Name:                            | <b>Tejashwini K C</b>       |
| Department, University & Country | <b>GM University, India</b> |