

Dear Editor and Reviewers,

We would like to thank you for considering our paper for publication and for the suggestions that helped us to improve our presentation. We have addressed all the issues raised by Reviewer 2 and included them in the paper. Please find below a more detailed answer.

With respect,

Rodica Lung,

On behalf of the authors

Reviewer 1 (Anonymous)

Basic reporting

The authors have very well taken into account the previous comments and concerns, and substantially improved the manuscript. I now recommend it for publication.

Experimental design

The experimental design is adequate and well presented.

Validity of the findings

The results are correct and support the framework present in the paper.

Thank you for your remarks.

Reviewer 2 (Anonymous)

Basic reporting

In this paper, the authors present A game-theoretic model for the classification of selected oil companies' price changes. The paper presents the Nash equilibrium is used as a solution concept to estimate probit parameters for the binary classification problem.

Some suggestions to improve the paper are as below:

1. The abstract can be rewritten to be more meaningful. The authors should add more details about their final results in the abstract. Abstract should clarify what is exactly proposed (the technical contribution) and how the proposed approach is validated.

The abstract has been modified. It presents the main approach of the paper as well as a note related to the results.

2. Also in the Introduction, Sections must be mentioned in the introduction.

We added a paragraph describing the structure of the paper in the Introduction.

3. What are the main limitations of the work?

The limitations are related to the theoretical aspects using equilibria parameters, as we do not have an in-depth understanding of their behavior other than that offered by the results of the numerical experiments which cannot be generalized. We pointed that out in the paper.

4. Proposed methods should be compared with the state-of-the-art existing techniques.

Numerical results provided by PrEDE and Probit are complemented with those reported by Logit, KNN and RandomForest classifiers in Table 2, with comments related to the significance of differences.

5. Limitations and Highlights of the proposed methods must be addressed properly.

We have addressed these issues within the Conclusions.

6. Overall, the paper is very well written, and the information is interesting from the field under study. However, some important points need to be take:

a) Bullet 2) is critical, and the authors must highlight and compare with similar papers of the proposal.

We have addressed it.

7. The conclusion must be improved and avoid redundancy. The conclusion provide some insights into the outcome of the paper. However, I feel that we need further elaboration and critical evaluation within the conclusions.

We have modified the Conclusions.

8. For easy follow-up: A Table should be provided to compare your results with the literature.

Table 2 presents results reported by other methods.

9. It is preferable to mention future works in thies paper?

We have mentioned possible future research directions in the Conclusions.

10. The quality of the figures needs to be improved.

We have made all the efforts to abide by the journal's rules with regards to the quality of the figures.

11. References: Critical: update it.

We have added some new references related to oil prices.

Finally, paper needs mainor improvements

Experimental design

no comment

Validity of the findings

no comment

Additional comments

no comment

Thank you for your helpful comments.