# A Model for Estimating Stock Market Shocks Using the ARMA-GARCH Approach

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|---|---|
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## 1. Round 1

### 1.1. Reviewer 1

Reviewer:

"The introduction states, 'discovering appropriate patterns for predicting unexpected market shocks is a challenging issue.' It would be beneficial to include specific examples or references to highlight the importance and current challenges in this field."

"The unit root test results are presented but lack a discussion on their implications. Include a brief explanation of why stationarity is important for the ARMA-GARCH model and how these results validate the data suitability."

"Table 1 presents descriptive statistics but lacks interpretation. Add a discussion on what the mean, median, standard deviation, skewness, and kurtosis values indicate about the data's distribution and characteristics."

"The ARIMA model description is comprehensive but would benefit from a real-world example of how this model can be applied to time series data in the context of stock market shocks."

"The explanation of the GARCH model mentions its success in predicting conditional variances but does not cite any supporting studies or evidence. Including references to previous successful applications of the GARCH model would be helpful."

Response: Thank you for your comment. I will consider these comments.

## 1.2. *Reviewer 2*

Reviewer:

"The sentence 'Successfully estimating price shocks through the development of new pricing models has benefits...' could be enhanced by elaborating on how these new models compare to traditional models and why they are considered improvements."

"The methodology section states, 'the primary goal of this research is to provide a model for estimating shocks in Tehran Stock Exchange companies.' It would be useful to explain why the Tehran Stock Exchange was chosen as the case study and how the findings can be generalized to other markets."

"The data collection method mentions the use of the Rahavard Novin software. Providing more details about the reliability and accuracy of this software, as well as any potential biases it may introduce, would strengthen this section."

"The results section states, 'the skewness and kurtosis coefficients in these indices indicate that the distribution of variables is not normal.' Provide a brief explanation of the implications of non-normality for time series modeling."

"The unit root test results in Table 2 show significant values. Include a sentence discussing how these results impact the subsequent modeling process and the reliability of the findings."

"Table 5 identifies the best ARMA-GARCH combined model for each index. It would be beneficial to explain why these particular models were chosen over others and what their parameters suggest about the data."

"The conclusion states that the ARMA-GARCH model was effective in estimating stock market shocks. Discuss any limitations or potential weaknesses of the model that were observed during the research."

"The study finds that stock market shocks were 'completely random and non-normal.' Expand on what this randomness implies for traders and how it affects the predictability of market movements."

Response: Thank you for your comment. I will consider these comments.

## 2. Revised

Editor's decision after revisions: Accepted.
Editor in Chief's decision: Accepted.