Review of: "COVID-19 or Russia-Ukraine conflict: which is informative in defining the dynamic relationship between Bitcoin and major energy commodities?"

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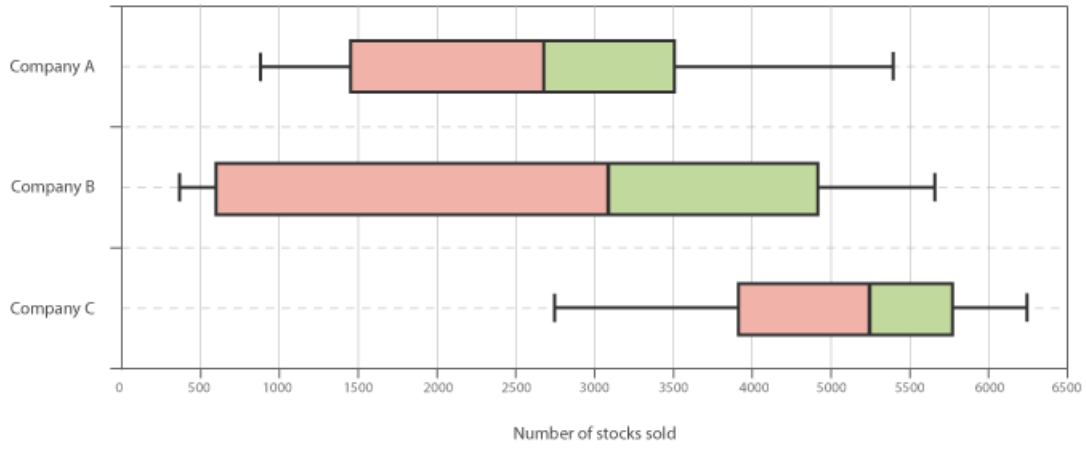
Potential competing interests: No potential competing interests to declare.

The author has provided an analysis of various markets and the stochastic correlations that may exist between Bitcoin, and oil and natural gas markets. I addition this analysis is augmented by surprise or shock variables corresponding to the recent COVID-19 pandemic and war between Russia and Ukraine. The author was able to identify an impact from the two events.

My decision is **Major Revisions** according to the concerns detailed below



1. This paper has a problem with conciseness. Figures 2-5 could be represented on the same plot with different colorings. This would allow for an easy visual comparison between the plots. The same applies for Figures 6-8. I also believe that you were too concise in Section 3 Methods. I believe that additional discussion on GARCH and DCC is required so that readers aren't required to go through citations and searches to understand the core concepts of your work. The length and depth of discussion in other sections appears to be adequate. I would also add that for tables like Table 1 where a number of statistics about a time series are listed, a box and whisker plot like shown above would convey significantly more information in a visual way.
2. It is clear that your first language is not English from the writing in this paper, but I don't want that to be a barrier of entry for this publication. There exists a number of software tools to assist with writing that even I as a native speaker

use. I would suggest Antidote https://www.antidote.info/en/, Grammerly https://www.grammarly.com/, or the various AI algorithms that have recently become popular. I think that it's critical to have some type of software review any individuals work to ensure clear and concise language. In your draft, I found it difficult to understand your derivation in Section 3 and had to resort to other reading material to understand your process. You also have a number of typos/ formatting errors that won't be picked up by most software including the log return on page 7 or $\bar{Q}$ on page 6. There are also a number of odd choices for paragraph breaks. While they are distracting and would recommend revising how you structure your paragraphs, I don't believe that this alone would stop me from accepting the paper.

3. While I already commented on the need for additional content and explanation in Section 3, I believe a large portion of the existing content in this chapter should also be reworked. For instance, it is not clear what $\bar{Q}$ or q_{ijt} in equations 2 and 4. It is also not clear how the various parameters are recovered from the data presented. I also believe that you should cite in this section the paper that formalized GARCH, https://doi.org/10.1016/0304-4076(86)90063-1. A complete rederivation is not required on this and DCC, but sufficient explanation of variables, what they're meant to represent, and how they're calculated I believe is required. An example may help but unless done concisely may hinder my first point.
4. I believe your analysis requires additional types of tests. For instance you should be able to provide significance values for Table 3. You should also be able to evaluate Figures 6-8 against a null model. The easiest way would be to randomize the order of increases and decreases in a time series and compare that randomized time series with Bitcoin to gather similar statistics for Table 4. If there is a signal you should expect a significantly different mean or standard deviation. Many other tests exists to check whether your analysis method is overfitting noise with the dynamic correlation. I would also take issue with your characterization of your results in Table 7. The coefficients gathered without a shock vs a shock mostly remain unchanged and the shock coefficients are typically an order of magnitude lower than beta or alpha. There are some interesting changes in the offset omega, but I don't see sufficient evidence to suggest that the shock parameters are required. It may be the case that if you added a white noise parameter, you would like find a similar contribution as these shock parameters.

In summary, please try to use some software to improve your writing and work on your conciseness. Please try to give additional context in Section 3 so that readers can better understand your analysis process. Lastly improve the robustness of your analysis by adding additional tangential null model testing in conjunction with your existing statistical analysis.