Review of: "Unpacking the Complexities of Cryptocurrency Prices Volatility in Times of Crisis: A Time Series Data with Long-term Memory or Long-range Dependence"

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Potential competing interests: No potential competing interests to declare.

The study deals with the volatility modelling of bitcoin prices. It aims to find the best model for the bitcoin price volatility, separately for 4 subperiods (Pre-Covid19, Covid19 Pandemic, Pre-Russo Ukrainian war, and during Russo Ukrainian war). The study employs daily prices of bitcoin BTC/USD covering a period of eight years. The selection of the best model is based on four information criteria (Akaike, Shibata, Schwarz, and H-Quinn). For each subperiod, bitcoin price volatility is estimated using a fractionally integrated model chosen according to the information criteria. Then, estimation results of these models are used to compare conditional variances of returns of BTC/USD. In addition, tests are performed on the conditional volatility of bitcoin returns for each subperiod (normality test, test of autocorrelation in residuals, and test of ARCH effects in residuals) to ensure that the best model considers anomalies. Study Findings lead to select the most appropriate model for the volatility of BTC/USD returns.

The idea of the research is interesting. Several statistical techniques are thoroughly used to seek reliable results. Some improvement is needed to make a clear contribution to the empirical literature.

1. The Abstract is very long. It contains many details. Start it by defining the purpose of your research (empirical problem). Next, state the objective of your research. After that, briefly indicate your methodology. At the end, summarize your findings and mention the answer to the (empirical) problem.
2. Motivation to explore the volatility of BTC/USD is missing. It is important to explain why did you choose specifically (BTC/USD)?
3. Please describe the database (prices of bitcoin), its frequency and its source, before defining returns formula.
4. In methodology, try to briefly describe all steps that you will follow in your research before defining ARCH models.
5. Improve the writing quality to avoid some grammar mistakes.