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.

This study provides important insights into the dynamics of cryptocurrency markets during global crises, highlighting the need for sophisticated modeling techniques to effectively capture the complexities of these markets. There are several interesting conclusions given by the author. For instance, the author finds a war will make cryptocurrency more important on the exchange market even than an epidemic in the example of Covid-19. I like the research design, and the empirical analyses are interesting. There are four suggestions.

(1) After you get the conclusion "The pandemic and geopolitical tensions have had a significant impact on cryptocurrency prices, but investor sentiment has played a crucial role in exacerbating price volatility.", you might discuss more about the implication of the conclusion.

(2) In the abstract, you write, "conditional volatility models' parameters are first estimated from the four sub-sample data series BTC/USD exchange rate returns, and it is calculated." I think you may delete the sentence "it is calculated."

(3) In section 3.2, the formulas in your pdf are fine. However, when I went to the website, I saw some unrecognizable characters, such as "The $GARCH(p, q)$ model can be expressed as:

$$\sigma_t^2 = \omega + \sum_{i=1}^{q} \alpha_i \varepsilon_{t-i}^2 + \sum_{j=1}^{p} \beta_j \sigma_{t-j}^2 \qquad (2)$$

." Those formulas are not in the right form, at least in my browsers. Please double-check the form of the formulas.

(4) In the future, it might be interesting to compare the BTC/XAU with BTC/USD because the war and covid-19 also influence the value of USD. The comparison might give more information about the fluctuation of BTC.