

John High

JP Outline

Twitter Influences Sentiment on Cryptocurrency Price Action

Do Twitter influencers' news and opinions result in predictable short-term cryptocurrency price movement? Over the past decade, cryptocurrencies have been innately tied to social media platforms to facilitate the transfer of news, speculation, and even the early transactions of Bitcoin. One forum post in 2010 demonstrates a request for two pizzas in exchange for 10,000 Bitcoins. As both the blockchain technology and social media platforms evolved, the relationship strengthened as a hub for investor speculation on micro and macro trends. This past year, Reddit and their related subreddits came into focus when GameStop and AMC experienced massive bull runs after a Reddit user posted about the potential short squeeze opportunity on GameStop on a subreddit by the name of WallStreetBets. The transition to the cryptocurrency markets quickly followed as fellow meme investors flocked to Dogecoin, prompting another wave of social media speculation and hype from anonymous posters to Tesla CEO and founder Elon Musk.

Some papers have looked at this phenomenon previously in examining the extent to which social media activity affects price movement more than fundamentals and rational valuation methods. These studies have been used to show that because the cryptocurrency markets are far more susceptible to short-term price variation due to an increase in the volume of Tweets or market-focused sentiment. The working paper conducted by the Blockchain Research Lab concluded that Elon Musk's tweets had a significant impact on the price action of Bitcoin and Dogecoin in the past year. However, a key conclusion in this paper was the volatility in price, with Cumulative Abnormal Returns reaching the double-digit percentages in less than an hour. Compared to Brans and Scholtens' finding, who concluded that Donald Trump's tweets did

not yield a significant predictive response, the cryptocurrency market reacts differently than the established and regulated stock market.

I will build upon these works by looking at the relationship between less famous Twitter users and cryptocurrency price movements. Elon is one of the wealthiest people in the world, with a cult following that renders any conclusions as to the effects of other tweets indeterminate. I will focus on Twitter users with relatively high followership with high user engagement activity, measured by the average ratio of comments and retweets to total followers. These users comprise influential public figures, corporations, and traders who have created large communities of cryptocurrency enthusiasts through a combination of Twitter and Discord. Analyzing these groups' effects will give a broader conclusion to the overall relationship between Twitter and the crypto market.

I will focus on the major cryptocurrencies: Bitcoin, Ethereum, and the other news-heavy 'meme cryptos'- Dogecoin and Shibu Inu. These coins represent the titans of the crypto market that I will use to describe the generic crypto market at large. Then I will focus on the significant macro-level event and see how Twitter activity for each of the four assets affects the following price movement. In addition, I will highlight a few coins specific events that focus on only one of the assets and see if the tweets result in price movement substantially different from the other assets. Overall, I expect to see a similar, yet less extreme effect compared to the paper analyzing Musk's tweets. I also believe the impact will only span a short time frame immediately following a spike in tweet volume. Because more institutions have become players in the crypto world, the trade volume needed to enact large price swings is increasingly challenging for retail investors to maintain.

Bibliography

- Ante, L. (2021). How Elon Musk's Twitter Activity Moves Cryptocurrency Markets. *SSRN Electronic Journal*.
<https://doi.org/10.2139/ssrn.3778844>
- Brans, H., & Scholtens, B. (2020). Under his thumb the effect of president Donald Trump's Twitter messages on the US stock market. *PLOS ONE*, 15, e0229931. <https://doi.org/10.1371/journal.pone.0229931>
- humanjets. (2020, April 9). A Brief History Of Cryptocurrency Exchanges. *The Capital*.
<https://medium.com/the-capital/a-brief-history-of-cryptocurrency-exchanges-2b48d4531918>
- Kraaijeveld, O., & De Smedt, J. (2020). The predictive power of public Twitter sentiment for forecasting cryptocurrency prices. *Journal of International Financial Markets, Institutions and Money*, 65, 101188.
<https://doi.org/10.1016/j.intfin.2020.101188>
- The prices of sports cards and odd collectibles are booming, too* / *The Economist*. (n.d.). Retrieved October 7, 2021, from <https://www.economist.com/finance-and-economics/2021/02/25/the-prices-of-sports-cards-and-odd-collectibles-are-booming-too>
- Using sentiment analysis to predict interday Bitcoin price movements* / *Emerald Insight*. (n.d.). Retrieved October 7, 2021, from <https://www.emerald.com/insight/content/doi/10.1108/JRF-06-2017-0092/full/html#loginreload>
- Wooley, S., Edmonds, A., Bagavathi, A., & Krishnan, S. (2019). Extracting Cryptocurrency Price Movements from the Reddit Network Sentiment. *2019 18th IEEE International Conference On Machine Learning And Applications (ICMLA)*, 500–505. <https://doi.org/10.1109/ICMLA.2019.00093>