

Is It Possible to Find a Behavior Pattern For Cryptocurrencies? A First Point of View

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Abstract

We used regression model to analyze daily COVID-19 world fatalities and daily Bitcoin closes and prices. We discovered that COVID-19 levels drove a rise in Bitcoin values, notably to residual values. We contribute to the rapidly developing body of research on COVID-19's financial implications, as well as the current debate over whether Bitcoin is a safe haven investment. Scholars and policymakers, as well as investment professionals interested in the financial implications of COVID-19 and cryptocurrencies, should be interested in our findings.

Keywords:

Bitcoin, Finance, Models

1 Introduction

COVID-19, also known as the new coronavirus, is not only a public health issue on a global scale, but it also has huge implications for energy, the economy, and the environment. Although all of the world's attention is justifiably focused on COVID-19's human toll, the outbreak's economic toll, which has impacted all of the world's major economies, has the potential to be devastating. As a result, the energy market has collapsed, resulting in an oil supply surplus and a price drop.

When a proven case of COVID-19 (COrona VIRUS Disease 19) arrives close to me, the world is working on an app that will notify me on my phone. However, regardless of whatever feature is implemented initially, the COVID-19 tracking system should address the challenges of location tracking legalization and scalability as a global platform. Additional issues that require answers include real-time authentication for data collection, blind naming and privacy of tracked individuals, and the Query/Reply procedure's quality of service.

A large portion of pension savings is invested in the stock market and is thus subject to market volatility. Like past pandemic crises, the COVID-19 pandemic crisis harmed the gains made in those funds. The system will import historical stock data from the financial web and generate charts for stock price trend research. It will execute trading strategies defined by the user based on technical analysis.

The US equities market in the first half of 2020 during the COVID-19 era. Prices soar to new highs, then fall to new lows, and then rise again to new highs. Fear and greed alternated throughout the era, resulting in significant volatility and a lot of short-term momentum. The VIX index served as a market indicator.

Althought, the COVID-19 pandemic's outbreak is a once-in-a-generation global blow to India's economy. The Indian government has put in place specific preventative actions, starting with diet, to regulate the problem extra-

economic security for health care, sector-related incentives, and additional delays of monetary deadlines The entire world has been affected by global warming in recent years.

How much are the world's largest firms, from various areas of the economy, affected by the pandemic? Is there a shift in their economic ties?

COVID-19's effects on the energy market, as well as its relationship to the ongoing transition to renewable energy, are also being studied by policymakers. In light of this, this study contributes to a summary of COVID-19's economic impact. We address these challenges in this research by analyzing the top AMZN, AAPL, BTC-USD businesses using market and textual data [6]. Our research provides a network analysis technique that integrates these two forms of data to emphasize company linkages in order to investigate relationships prior to and during the pandemic outbreak. Let's look at an example of our proposal in Figure 1.

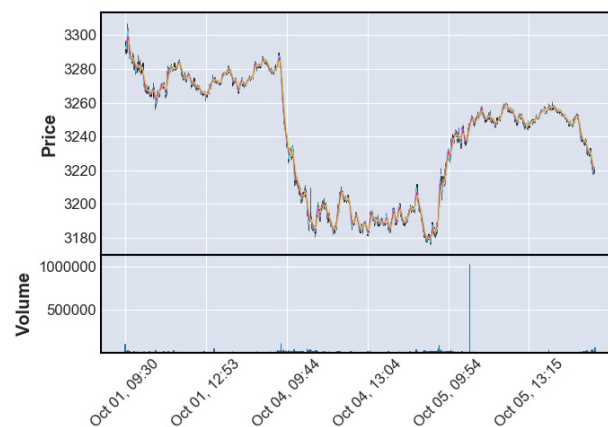


Fig. 1. AMZN 2021

Figure 1 shows that there is a fluctuating behavior of AMZ. Apparently, as an entry hypothesis, we can assume that there is still no stabilization of the financial markets for this stock index. But what happened during the pandemic, when COVID was much stronger? Figure 2, Figure 3 and Figure 4, shows other stock index AAPL.



Fig. 2. AAPL 2019



Fig. 3. AAPL 2020

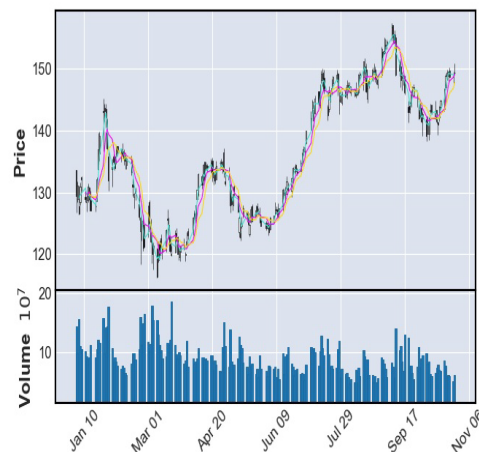


Fig. 4. AAPL 2021

If what we are doing is correct, apparently COVID-19 did not affect AAPL in fact, it made it rise more, and in 2021 it remains fluctuating, but at values higher than 2019. This arouses much interest, since there are more stock market indicators that may or may not have the same behavior, hence our approach even in observing other markets such as the fluctuation of bitcoin, through regression models that allow us to address adequate conclusions.

2 Methodology

What we are looking for is to obtain different behaviors of stock market indicators, some are explained in the introduction. In this section we will focus on looking at what happens with Bitcoin, another fashionable and current stock indicator. The reading may be confusing at this point, however, what we are trying to do is propose a way to identify what is happening with COVID and the stock indicators. From here it is very simple, we observe with the tool developed in python the linear regression analysis, based on data obtained from Coinbase¹.

3 Experimentation

Figure 5 shows that in the first days of January the standard deviation is not capable of grouping fluctuation results, changing the dates we observe the results. Table 1 show an example Bitcoin data from Coinbase:

Table 1. Bitcoin data from Coinbase

index	epoch	low	high	open	close	volume
0	299 1609459200	28700.00	29688.88	28990.08	29412.84	22211.252518
1	298 1609545600	29039.00	33300.00	29413.29	32225.91	46675.246521
2	297 1609632000	32008.62	34810.00	32222.88	33080.66	36951.716506
3	296 1609718400	27678.00	33666.99	33082.84	32019.99	46045.389685
4	295 1609804800	29891.13	34499.67	32020.22	34030.64	42282.569200

¹ <https://thecleverprogrammer.com/2021/01/05/bitcoin-price-prediction-with-python/>

295	4	1634947200	59650.00	61750.00	60682.88	61300.01	6708.150138
296	3	1635033600	59522.89	61491.96	61300.02	60854.48	8573.727192
297	2	1635120000	60653.50	63726.58	60847.91	63083.54	10496.580587
298	1	1635206400	59837.07	63290.49	63081.96	60337.62	12181.481450
299	0	1635292800	58100.00	61488.00	60333.19	59052.70	14062.842023

The fluctuating data in Table 1, assume that the variability of bitcoin does not adapt to some predictive model or perhaps to the regression model proposed in this work, it is necessary to verify the behavior with later dates.

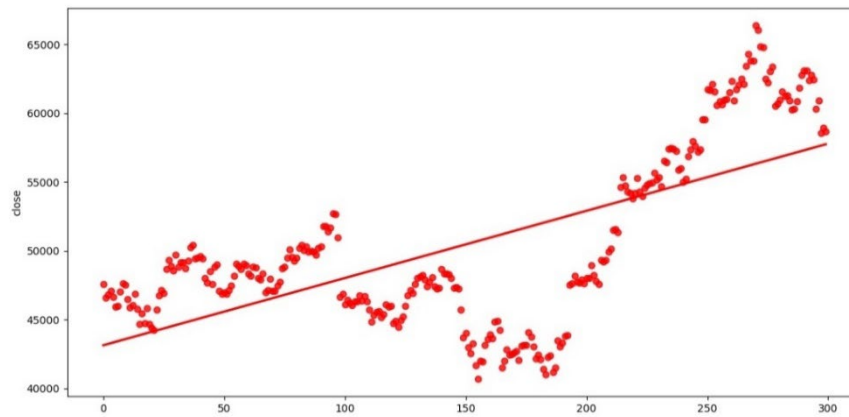


Fig. 5. Bitcoin last 300 days

Figure 5 shows the behavior of the BTC - USD for the last 300 days. In fact, changes in its value range from \$ 40,000 to \$ 67,000. Can a prediction mechanism be established that allows somehow to determine what an average value is?

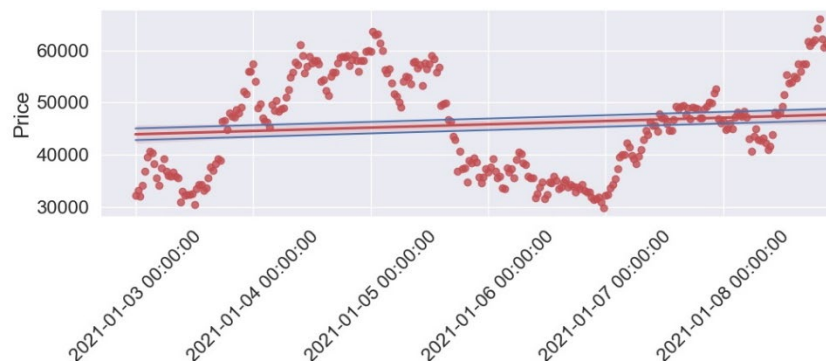


Fig. 6. Bitcoin, January 2021

Figure 6 show the behavior of bitcoin in the first 6 days of January 2021², with 90% confidence interval. The first standard deviation does not group the fluctuation. And that is what this methodological evidence is all about, configuring the software to observe fluctuations at times of COVID and draw conclusions. The data for the behavior of BTC-USD ranges from 2012 to March 2021³.

² <https://docs.prime.coinbase.com/#get-historic-rates>

³ <https://www.kaggle.com/mczielinski/bitcoin-historical-data>

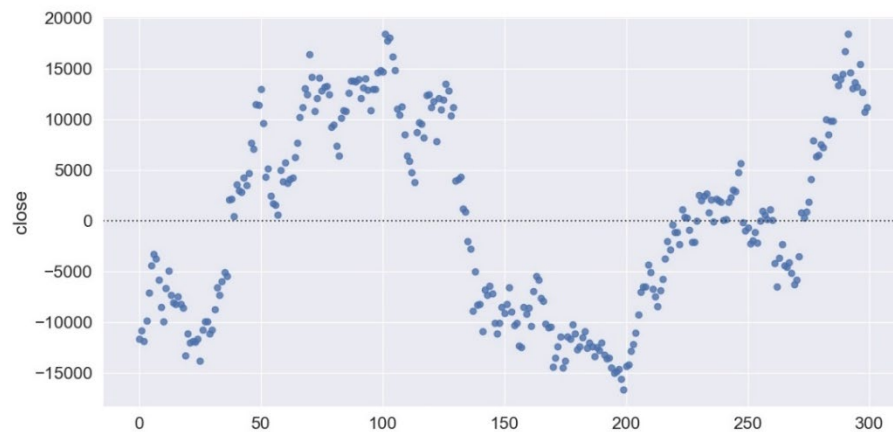


Fig. 7. BTC residual

Figure 7 show the regression curve of close on days, visualizes how the meaning of the variable close changes in those groups of observations characterized by having the same value in the other variable with range between 50-150 last days.

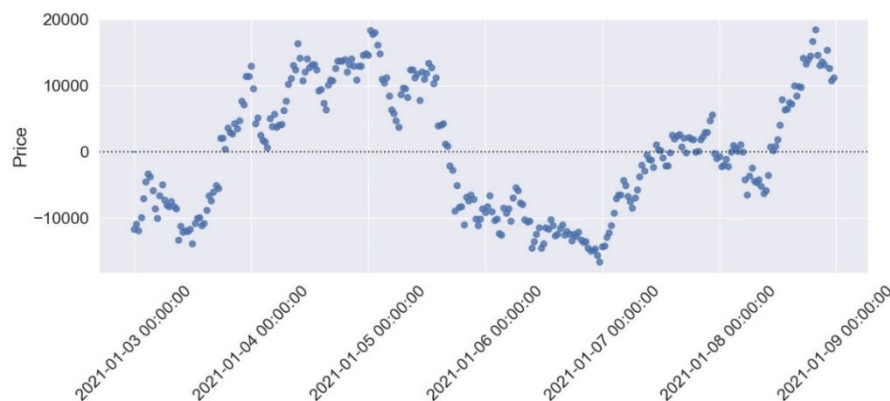


Fig. 8. BTC-USD January residual.

Figure 8 show the regression curve of Price on days, visualizes how the meaning of the variable close changes in those groups of observations characterized by having the same value in the January 01 to January 09.

4 Conclusions

The impact of trading activities on price discovery in the Bitcoin futures markets is investigated in this study, Figure 1 to Figure 8. In futures markets, hedger trades are positively connected with modified information sharing, implying that their trading increases futures market efficiency. The trading activity of retailers has a negative impact on the price discovery of CME Bitcoin futures, destabilizing the market. Speculators have a favorable (negative) impact on the price discovery of Bitcoin futures on the CME (CBOE). For 2021 the trend is upward, as can be seen in Figure 6, the rally is likely due to a number of factors, including optimism that a bitcoin futures ETF will be approved by the Securities and Exchange Commission soon, as well as excitement following Federal Reserve chair Jerome Powell's clarification that he has no plans to ban bitcoin in the United States, which appeared to "embolden" investors, according to Ned Davis Research⁴. If we are correctly interpreting the residuals Fig. 8 it is possible that they are forming a maximum downward pattern of 20,000 USD. This may contradict the upward trend, even saying that the maximum value is 10,000, however the positivity of the values on the residual line remains. The results must be corroborated each year on this finding, so we must continue the investigation next year. Despite the influence of the coronavirus, a poor low is observed, so a general stability of the currency is expected. We dare to mention that it can even achieve price stability, a situation that must be verified in the coming months.

⁴ <https://www.cnbc.com/2021/10/11/crypto-news-bitcoin-up-in-october-nft-trading-biden-executive-order.html>

Datos de origen

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