Impact of COVID-19 on the Crypto Market and the Power of BTC & ETH

IE 6600

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1   Introduction

The cryptocurrency market has experienced significant growth and attention in recent years, making it increasingly relevant to understand its behavior and dynamics. This report aims to explore the impact of the COVID-19 pandemic on the crypto market and investigate the influence of major cryptocurrencies, such as Bitcoin and Ethereum, on the rest of the market. By analyzing historical price data and applying various statistical techniques, this study provides valuable insights into the resilience of the cryptocurrency market during global crises and the interconnectedness of different cryptocurrencies. The findings suggest that the COVID-19 pandemic did impact the crypto market, with some currencies experiencing price increases or stabilization during or after the pandemic. Additionally, the analysis reveals a strong correlation between Bitcoin and Ethereum and other cryptocurrencies, indicating that their price movements can significantly influence the market dynamics of other cryptocurrencies. This report contributes to a deeper understanding of the crypto market's behavior, helping investors, traders, and researchers make informed decisions in this rapidly evolving domain. The Python code used to carry out this analysis is available on GitHub, along with a Tableau dashboard that incorporates most of the main findings, providing a comprehensive and interactive visualization of the results.

1.1   Research Questions

This section introduces and discusses the motivation and relevance of the two research questions that guide this study:

- Research Question 1: ***Did COVID-19 impact the crypto market?***
  The emergence of the COVID-19 pandemic in early 2020 significantly affected global financial markets, leading to increased volatility and uncertainty. Given the relatively nascent nature of the cryptocurrency market, it is crucial to understand how the pandemic impacted its performance. This research question aims to explore the relationship between the COVID-19 pandemic and the crypto market, shedding light on whether the pandemic had a positive, negative, or neutral impact on the market's dynamics. Investigating this relationship can provide valuable insights into the resilience of the crypto market during global crises and its potential role as a safe haven or an alternative investment option during turbulent times.

- Research Question 2: ***How do price movements in major cryptocurrencies (e.g., Bitcoin and Ethereum) influence the rest of the market?***

  Bitcoin and Ethereum are the two largest cryptocurrencies by market capitalization and are often seen as the leading indicators of the overall market's health. This research question seeks to examine the extent to which price movements in these major cryptocurrencies influence the performance of other cryptocurrencies in the market. Understanding this relationship can help investors, traders, and researchers better comprehend the interconnectedness of the cryptocurrency market, the role of market leaders in shaping trends, and the potential risks associated with overreliance on these dominant cryptocurrencies. Additionally, investigating this question can contribute to the development of more informed investment strategies and risk management practices in the crypto space.

2 Summary of Results

In response to the research questions, the analysis revealed that the COVID-19 pandemic did impact the crypto market. It was observed that during the pandemic, cryptocurrencies such as ADA, XRP, BNB, ETH, MATIC, DOGE, and BTC experienced a slight increase in price, which significantly peaked after the pandemic. Additionally, cryptocurrencies like USDC, USDT, and BUSD displayed some price fluctuations during the pandemic period but later stabilized. Furthermore, the pandemic affected market volatility, particularly in major cryptocurrencies like USDC, USDT, BNB, ETH, BTC, and BUSD, which experienced significant volatility during the pandemic. In terms of trading activity, the volume changes maintained a similar pattern before, during, and after the pandemic, with a slight uptick in volume changes for XRP, ETH, BTC, MATIC, and DOGE immediately after the pandemic.

Regarding the influence of price movements in major cryptocurrencies on the rest of the market, a notably strong correlation was found between Ethereum (ETH) and Bitcoin (BTC) and other cryptocurrencies. Granger causality tests revealed that price movements in Bitcoin significantly influenced the prices of XRP, MATIC, ADA, BNB, and BUSD. Ethereum's price movements had a significant influence on the prices of USDT, XRP, MATIC, BUSD, and DOGE. This evidence supports the notion that major cryptocurrencies like Ethereum and Bitcoin can impact the market dynamics of other cryptocurrencies.

Research Question	Findings
RQ 1: COVID-19 Impact on Crypto Market	- Slight price increase for ADA, XRP, BNB, ETH, MATIC, DOGE, and BTC during the pandemic, with a significant peak afterwards. - Price fluctuations for USDC, USDT, and BUSD during the pandemic, followed by stabilization. - Increased market volatility during the pandemic for certain cryptocurrencies. - No significant change in trading activity during the pandemic.
RQ 2: Influence of Major Cryptocurrencies on the Market	- Strong correlations between price movements of Bitcoin and Ethereum and the rest of the market. - Granger causality tests indicate significant influence of Bitcoin on XRP, MATIC, ADA, BNB, and BUSD, and of Ethereum on USDT, XRP, MATIC, BUSD, and DOGE.

Table 1: Summary of Results

3   Data Sources

The data utilized for this project was collected from Kaggle, available at the following link: Kaggle Dataset Link. This dataset presents a comprehensive collection of historical price records for the top 1000 cryptocurrencies, with daily updates ensuring a reliable and up-to-date source of information for cryptocurrency traders, researchers, and enthusiasts. All prices in the dataset are presented in USD.

Each file in the dataset includes the following columns: Date, Open, High, Low, Close, Adj Close, and Volume. These columns provide a detailed account of daily price movements and trading activity for each cryptocurrency in the dataset. To specifically address the research questions, a selection of the most popular cryptocurrencies was made, including BTC, ETH, USDT, BNB, USDC, XRP, ADA, MATIC, DOGE, and BUSD (Royal and Baker 2023).

These individual .csv files were then merged into a singular .csv file, with an additional column named "Symbol" added to identify the specific cryptocurrency. During the merging process, it was ensured that the dataset was clean and did not contain any 'nan' values. No 'nan' values were identified as the curator of the dataset already took care of it. Furthermore, unnecessary columns, such as "Adj Close", were removed to simplify the dataset for analysis.

By leveraging this dataset, it is possible to analyze and visualize the performance of individual cryptocurrencies, compare them with one another, and track trends over time. This data is well-suited for use in machine learning models, predictive analytics, and other data-driven applications to help answer the proposed research questions regarding the impact of COVID-19 on the crypto market and the influence of price movements in major cryptocurrencies on the rest of the market.

3.1   Data Overview

The dataset contains a variety of data types, including dates, floating-point numbers, and strings. A summary of the columns, their data types, and descriptions is provided in the table below:

Column Name	Type	Description
Date	datetime	The day on which the price data was recorded
Open	float	The opening price of the cryptocurrency in USD
High	float	The highest price of the cryptocurrency in USD
Low	float	The lowest price of the cryptocurrency in USD
Close	float	The closing price of the cryptocurrency in USD
Volume	float	The trading volume of the cryptocurrency
Symbol	string	The ticker symbol of the cryptocurrency

Table 2: Data Overview

A statistical description of the combined data is shown in Table 3 below. This provides insights into the distribution of prices and trading volumes for all cryptocurrencies. This includes measures such as mean, median, standard deviation, minimum, and maximum values for each column. Analyzing these statistics allows for a better understanding of the overall trends and patterns in the cryptocurrency market, which can be further explored through the use of visualizations and advanced analytical techniques.

	Open	High	Low	Close	Volume
count	21427.000000	21427.000000	21427.000000	21427.000000	2.1427E+04
mean	2047.397036	2099.384722	1990.134187	2048.518402	1.594833E+10
std	7679.118029	7873.280184	7459.533792	7679.755272	7.792124E+11
min	0.001046	0.001210	0.001002	0.001038	9.284E+03
25%	0.479192	0.496722	0.458321	0.479278	2.036185E+08
50%	1.004384	1.015071	1.000101	1.004253	1.337977E+09
75%	221.244705	226.818649	214.170441	221.111359	6.026186E+09
max	67549.734375	68789.625000	66382.062500	67566.828125	8.325207E+13

Table 3: Statistical Description of the Combined Data

In Appendix A a statistical description for each cryptocurrency is available.

4   Results & Methods

In the following sections results and methods utilized to answer each research questions are discussed.

4.1   Calculated Metrics

Several computed fields and metrics were generated to analyze the data and facilitate the creation of new charts and visualizations, which can aid in addressing the research questions. The following metrics were computed:

- *30-Day Moving Average of Price*: This metric calculates the average price of cryptocurrencies over a 30-day period, smoothing out short-term fluctuations and revealing potential trends related to the COVID-19 pandemic.

- *Percentage Change in Price*: This metric can be used to measure how much the price of each cryptocurrency changed during the period that COVID-19 was spreading around the world. If there was a significant drop in prices during this period, it could suggest that COVID-19 had an impact on the crypto market.

- *30-Day Rolling Mean of Percentage Change in Price*: This metric provides a moving average of the percentage change in price over 30 days, helping to identify any sustained price trends during the pandemic that might suggest a COVID-19 impact on the crypto market.

- *30-Day Rolling Standard Deviation of Percentage Change in Price*: This metric calculates the rolling standard deviation of the percentage change in price over a 30-day period, indicating the level of price volatility during the pandemic and potentially highlighting any COVID-19-related market instability.

- *Percentage Change in Volume*: This metric compares the trading volume of cryptocurrencies before and during the COVID-19 pandemic, allowing to identify any noticeable shifts in trading activity which could indicate an impact on the crypto market.

4.2   RQ 1: Did COVID-19 impact the crypto market?

Various visualizations were obtained in order to answer the research question at hand:

- **Moving Average of Closing Prices over 30 Days**: In order to obtain Figure 1 below the metric used was the calculated value of the *30-Day Moving Average of Price* was utilized. The upper subplot displays the moving average of all cryptocurrencies combined, while the remaining subplots exhibit the same metric for each individual cryptocurrency analyzed.
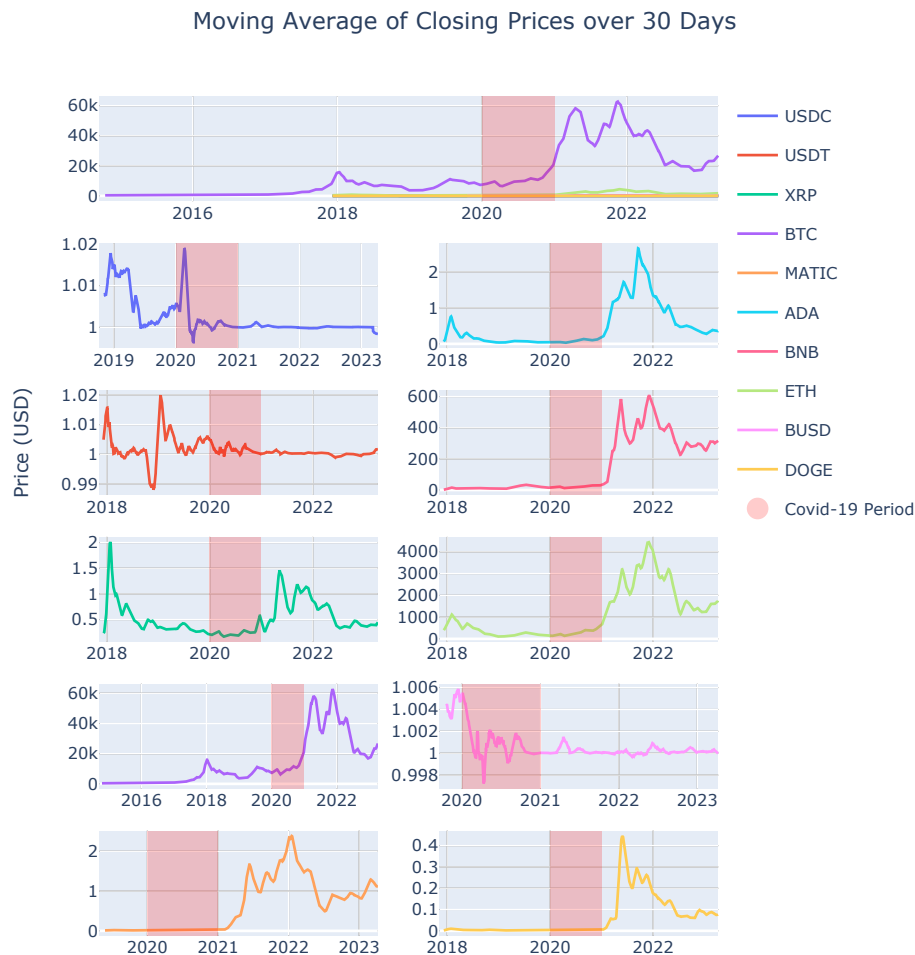
Figure 1: Moving Average of Closing Prices over 30 Days

The data visualization presented reveals intriguing findings. Firstly, it is worth noting that during the COVID-19 pandemic, cryptocurrencies such as ADA, XRP, BNB, ETH, MATIC, DOGE, and BTC experienced a slight increase in price, which significantly peaked after the pandemic. Secondly, cryptocurrencies like USDC, USDT, and BUSD displayed some price fluctuations during the pandemic period, but later stabilized. Overall, this visualization indicates that the COVID-19 period affected various cryptocurrencies by either causing a surge in their prices or stabilizing them, but only after the pandemic.

- **Rolling Mean of Daily Price Change**: In order to obtain Figure 2 below the metric used was the calculated value of the *30-Day Rolling Mean of Percentage Change in Price* was utilized. The upper subplot displays the rolling change in price of all cryptocurrencies combined, while the remaining subplots exhibit the same metric for each individual cryptocurrency analyzed.
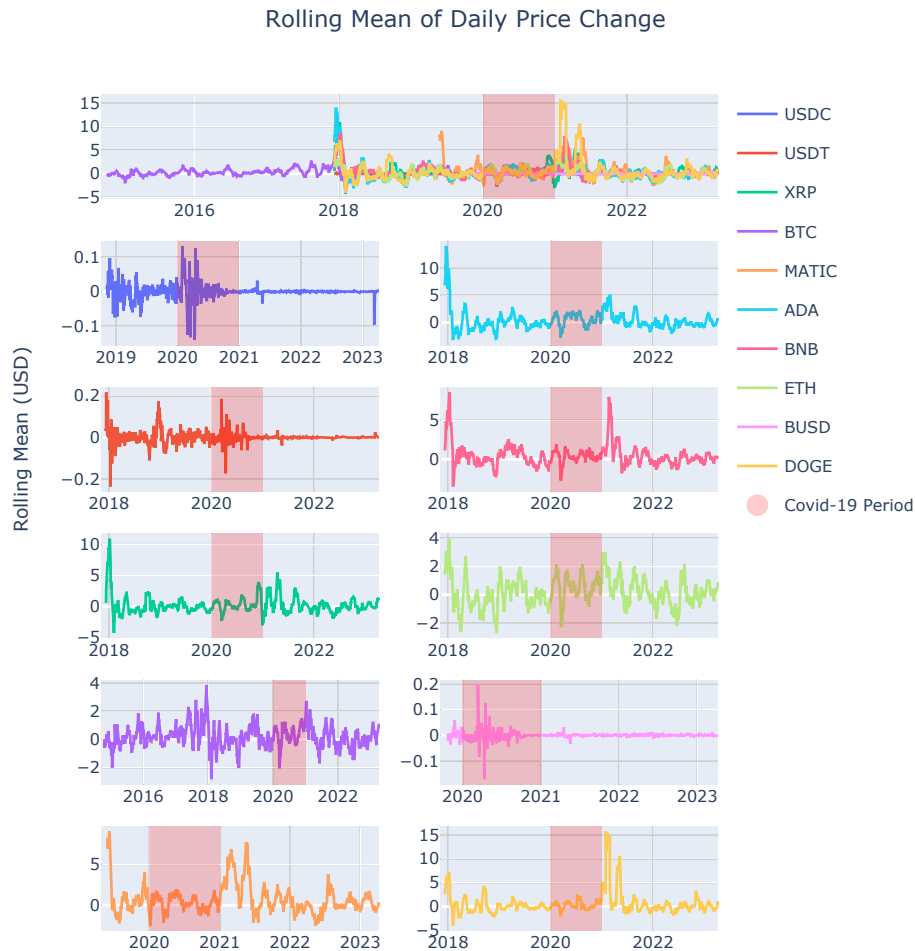
Figure 2: Rolling Mean of Daily Price Changes

The above-mentioned diagram illustrates intriguing findings concerning price variations amid the pandemic. Evidently, USDC, USDT, and BUSD, among other cryptos, experienced significant ups and downs during the pandemic phase. Conversely, some cryptocurrencies did not demonstrate any extraordinary price fluctuations during this time. These observations imply that the pandemic could have impacted distinct cryptocurrencies in diverse manners.

- **Rolling Standard Deviation of Daily Price Change**: In order to obtain Figure 3 below the metric used was the calculated value of the *30-Day Rolling Standard*

Deviation of Percentage Change in Price was utilized. The upper subplot displays the rolling standard deviation change in price of all cryptocurrencies combined, while the remaining subplots exhibit the same metric for each individual cryptocurrency analyzed.
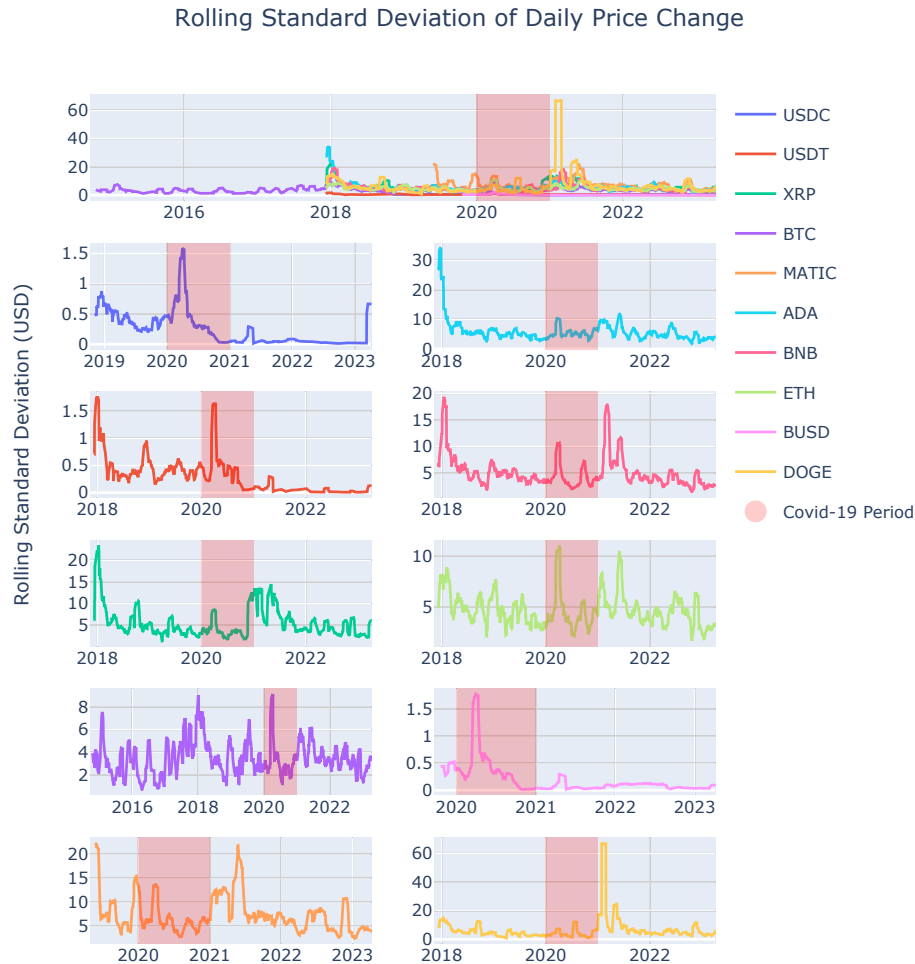
Figure 3: Rolling Standard Deviation of Daily Price Changes

The visualization presented indicates how the pandemic period affected market volatility, particularly in cryptocurrencies like USDC, USDT, BNB, ETH, BTC, and BUSD. These cryptos experienced significant volatility during the pandemic, which suggests that the pandemic may have contributed to market instability in major cryptocurrencies.

- *Percentage of Daily Volume Changes*: In order to obtain Figure 4 below the metric used was the calculated value of the *Percentage Change in Volume* was utilized. The upper subplot displays the volume change of all cryptocurrencies com-

bined, while the remaining subplots exhibit the same metric for each individual cryptocurrency analyzed.
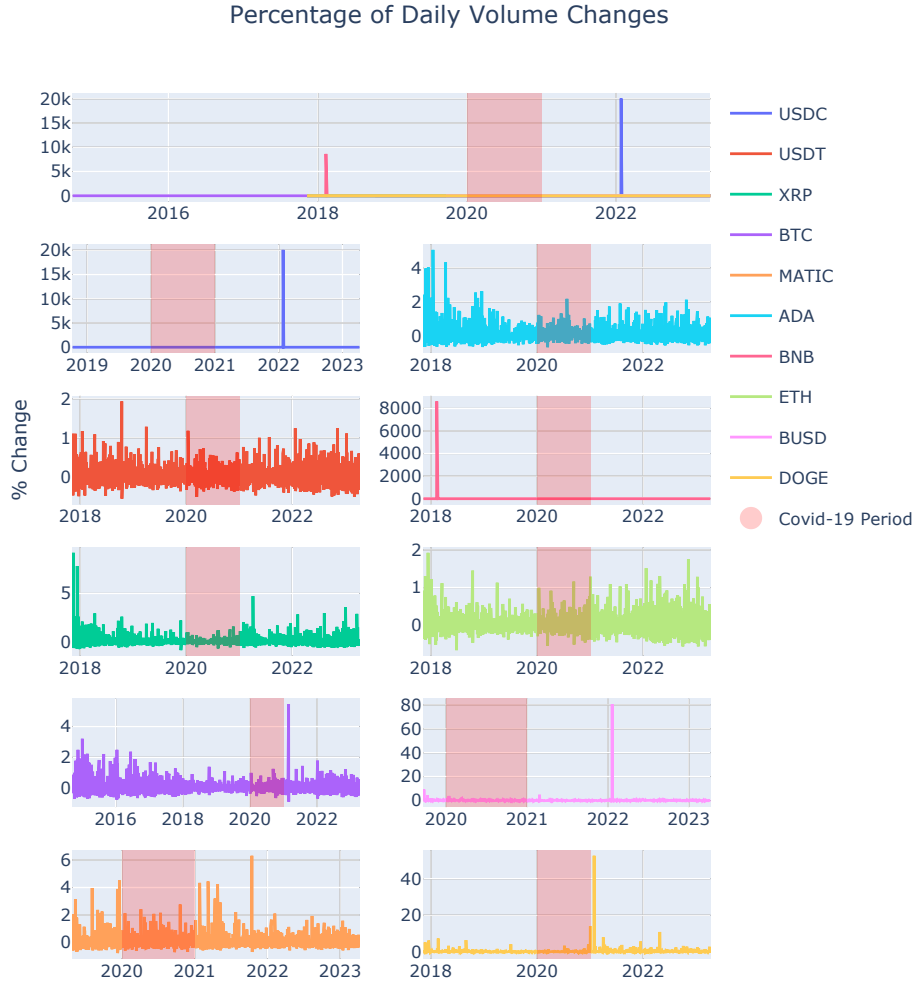
Figure 4: Percentage of Daily Volume Changes

Upon examining the plot, it is evident that the trading activity did not experience a significant shift during the pandemic period. The volume changes maintained a similar pattern before, during, and after the pandemic. Nevertheless, certain cryptocurrencies, namely XRP, ETH, BTC, MATIC, and DOGE, exhibit a slight uptick in volume changes immediately after the pandemic.

- **Correlation Matrices of Daily Percentage Changes Before, During, and After COVID-19 Period**: To generate the heatmaps in Figure 5, the dataset was partitioned into three subdatasets corresponding to the periods before, during, and after the pandemic. A pivot table was then constructed for each subdataset to compute the correlation between the daily percentage changes in cryptocurrency prices.

Using the resulting correlation matrices, three distinct heatmaps were generated, with each heatmap representing one of the three time periods.
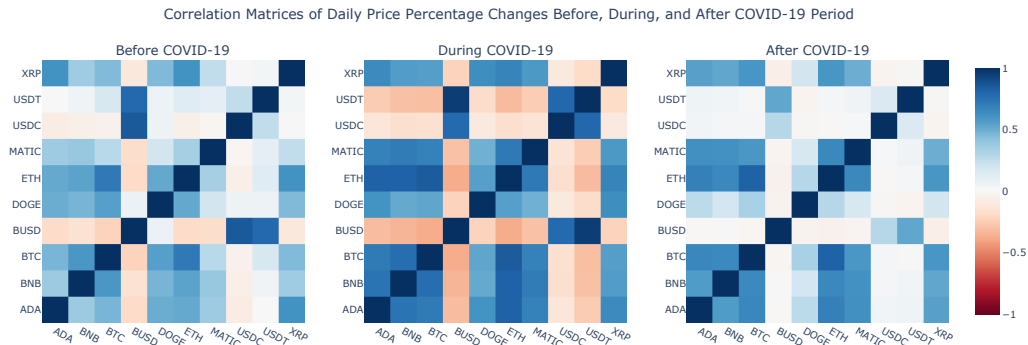
Figure 5: Correlation Matrices of Daily Price Percentage Changes Before, During, and After COVID-19 Period

Upon examining the three heatmaps representing pre-pandemic, pandemic, and post-pandemic periods, a noteworthy observation is that specific cryptocurrencies, namely USDT, USDC, and BUSD, displayed a predominantly contrary trend to the other cryptos during the pandemic. Generally, it is evident that the majority of cryptocurrencies adhere to comparable patterns in terms of price fluctuation, which were further emphasized during the pandemic phase.

4.3   RQ 2: How do price movements in major cryptocurrencies influence the rest of the market?

- *Correlation Matrices of Daily Price Percentage Changes*: To generate the heatmap in Figure 6, a pivot table was constructed to compute the correlation between the daily percentage changes in cryptocurrency prices. Using the resulting correlation matrices, the heatmap was generated, as well as the corresponding scatter plot matrix shown in Figure 7.

Correlation Matrices of Daily Price Percentage Changes
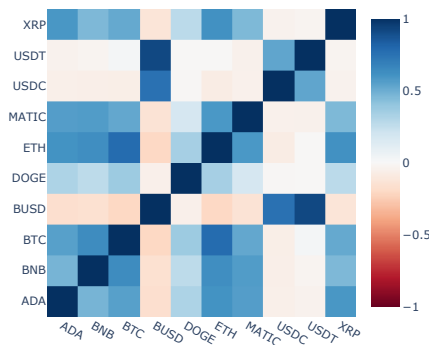
Figure 6: Correlation Matrices of Daily Price Percentage Changes

Scatter Plot Matrix of Daily Price Percentage Change
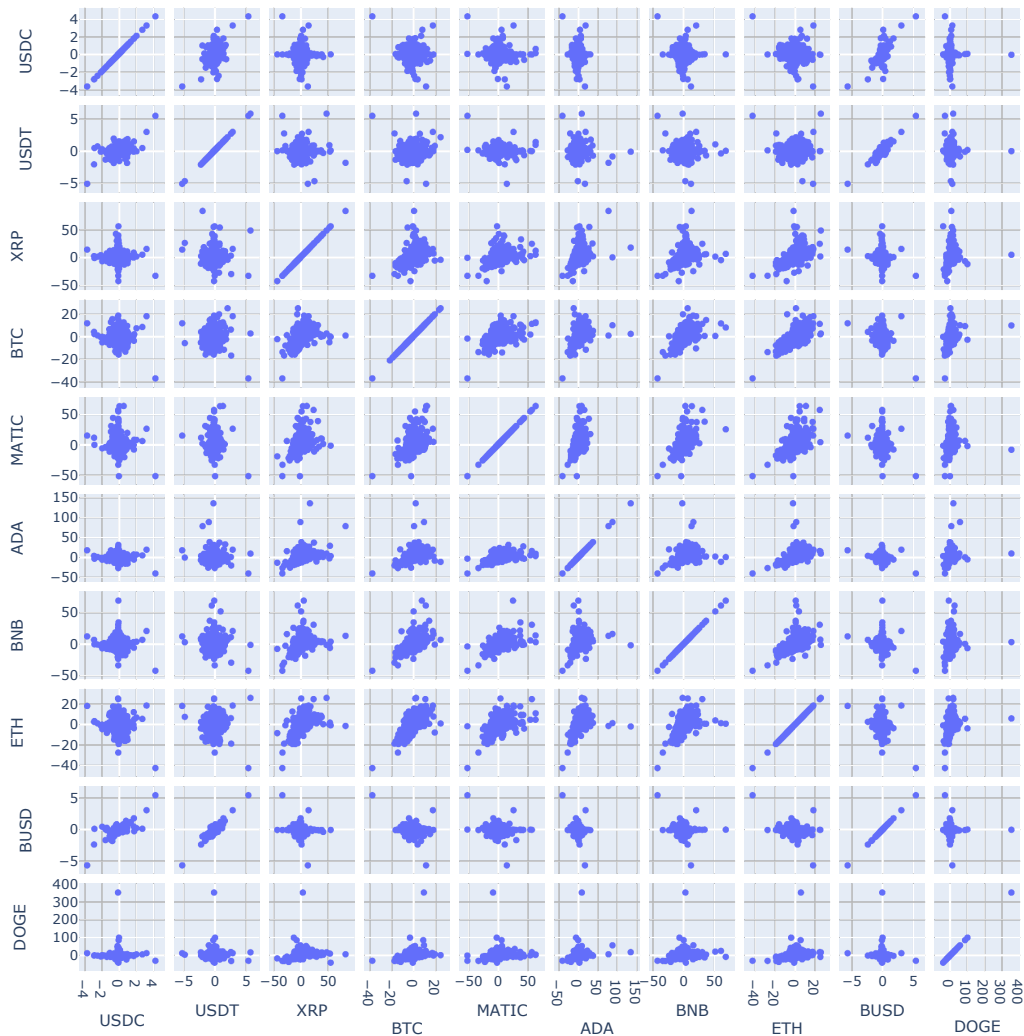
Figure 7: Scatter Plot Matrix of Daily Price Percentage Change

Examining the heatmap and scatter plot matrix, with a focus on the two leading

cryptocurrencies, Ethereum (ETH) and Bitcoin (BTC), reveals a notably strong correlation with other cryptocurrencies in the market. This observation implies that the movements of ETH and BTC have a considerable influence on the behavior of other cryptocurrencies, as they tend to exhibit similar patterns. However, to further prove such behaviour a Granger causaility test has been performed.

- *Granger Causality Test*: Using a Granger causality test, one can analyze if price fluctuations in major cryptocurrencies like BTC and ETH have predictive power for the price changes in other cryptocurrencies. This statistical assessment offers quantitative proof of causality. Refer to Figure 8 for the test results (p-values) at a predetermined significance level of 0.05 and the null hypothesis stating no Granger causality exists between the time series. If the p-value for a specific lag order is less than or equal to the significance level, the null hypothesis can be rejected, leading to the conclusion that Granger causality is present between the two time series at that lag order. In other words, the historical data of the first time series assists in forecasting the future values of the second time series.

Granger Causality Test, p-values (significance 0.05)

BTC vs. USDC	BTC vs. USDT	BTC vs. XRP	BTC vs. MATIC	BTC vs. ADA	BTC vs. BNB	BTC vs. BUSD	BTC vs. DOGE	ETH vs. USDC	ETH vs. USDT	ETH vs. XRP	ETH vs. MATIC	ETH vs. ADA	ETH vs. BNB	ETH vs. BUSD	ETH vs. DOGE
0.4404	0.539	0.0005	0.2461	0.4401	0.1264	0.0201	0.3246	0.2574	0.0365	0.0023	0.1819	0.1567	0.3347	0.0139	0.0227
0.0957	0.0055	0.0003	0.0972	0.0099	0.0697	0.01	0.5673	0.2941	0.067	0.0092	0.1333	0.205	0.1751	0.037	0.0489
0.1747	0.015	0.0009	0.0153	0.0293	0.0405	0.0113	0.5514	0.2695	0.0947	0.0094	0.0779	0.1511	0.2997	0.0179	0.1086
0.0352	0.0281	0.0018	0.0318	0.0752	0.0373	0.0215	0.662	0.1446	0.1092	0.0183	0.0618	0.1594	0.4119	0.0398	0.1346
0.0472	0.0548	0.0013	0.0005	0.0065	0	0.0313	0.6508	0.1383	0.0626	0.0354	0.0095	0.1888	0.0316	0.0918	0.0153
0.0616	0.0721	0.0013	0.0005	0.0154	0	0.0209	0.7196	0.2158	0.0527	0.0664	0.0017	0.0806	0.0706	0.0662	0.0228
0.1055	0.1465	0.004	0.0011	0.0077	0.0001	0.0482	0.726	0.3036	0.0855	0.0375	0.0037	0.0841	0.0786	0.1071	0.0389
0.086	0.206	0.0003	0.0014	0.013	0.0003	0.0672	0.783	0.1919	0.1386	0.0179	0.0066	0.0719	0.0318	0.1312	0.0641
0.0859	0.2103	0	0.0024	0	0.0004	0.089	0.8466	0.2538	0.1954	0	0.0111	0.0092	0.0395	0.1977	0.0895
0.0961	0.1003	0	0.0047	0	0.0014	0.0345	0.8743	0.2338	0.2456	0	0.0173	0.0099	0.04	0.101	0.1131

Figure 8: Granger Causality Test Results (Green - Null Hypothesis Rejected)

The Granger Causality test results indicated that price movements in Bitcoin significantly influenced the prices of XRP, MATIC, ADA, BNB, and BUSD, as evidenced by the rejection of the null hypothesis at the 0.05 significance level. This suggests that past price changes in Bitcoin can be used to predict future price changes in these cryptocurrencies, pointing to a potentially strong influence of Bitcoin on their market performance. However, Bitcoin's price movements did not show a significant influence on USDC, USDT, and DOGE. Similarly, Ethereum's price movements were found to have a significant influence on the prices of USDT, XRP, MATIC,

BUSD, and DOGE. This further supports the notion that major cryptocurrencies like Ethereum and Bitcoin can also impact the market dynamics of other cryptocurrencies.

5 Limitations & Future Work

5.1 Limitations

This study provides valuable insights into the impact of the COVID-19 pandemic on the crypto market and the influence of major cryptocurrencies on other assets in the market. However, there are certain limitations that should be acknowledged:

1. *Data scope*: The dataset used in this study is limited to the top 10 cryptocurrencies. While this captures a significant portion of the market, there are thousands of other cryptocurrencies that might exhibit different patterns and behaviors. Expanding the analysis to include a broader range of assets could yield additional insights.

2. *Causality*: Although the Granger causality test was used to establish relationships between major cryptocurrencies and other assets, it is essential to note that correlation does not imply causation. The observed relationships might be driven by other underlying factors not considered in the study.

3. *External factors*: This study focuses primarily on price and volume data to analyze the impact of the pandemic on the crypto market. It does not take into account other potential factors, such as changes in regulatory environments, macroeconomic indicators, or investor sentiment, which could also have influenced the market dynamics during the pandemic.

5.2 Future Work

To address these limitations and further enhance the study's findings, several avenues for future research can be pursued:

- *Broadening the dataset*: Future work could involve expanding the dataset to include a wider range of cryptocurrencies, including those with smaller market capitalizations. This would provide a more comprehensive understanding of the crypto market's response to global events like the COVID-19 pandemic.

- *Investigating causality*: Additional statistical tests and methodologies, such as vector autoregression (VAR) models or structural equation modeling (SEM), could be employed to better understand the causal relationships between the major cryptocurrencies and other assets in the market.

- *Incorporating external factors*: Future research could incorporate other factors, such as regulatory changes, macroeconomic indicators, and investor sentiment, to provide a more holistic understanding of the forces driving the crypto market during global crises like the COVID-19 pandemic.

References

Royal, James and Brian Baker (2023). *12 Most Popular Types of Cryptocurrency*. URL: https://www.bankrate.com/investing/types-of-cryptocurrency/.

A   Statistical Analysis for each Cryptocurrency Dataset

ADA					
	Open	**High**	**Low**	**Close**	**Volume**
count	1977.000000	1977.000000	1977.000000	1977.000000	1.977E+03
mean	0.483381	0.504003	0.461394	0.483559	1.105582E+09
std	0.609395	0.635338	0.581758	0.609388	2.002066E+09
min	0.023954	0.025993	0.019130	0.023961	2.93055E+06
25%	0.069347	0.070989	0.066107	0.069627	8.22638E+07
50%	0.178770	0.189128	0.170299	0.179378	2.99009E+08
75%	0.587836	0.632956	0.548088	0.587795	1.119918E+09
max	2.966390	3.099186	2.907606	2.968239	1.914198E+10

Table 4: Statistical Analysis for ADA

BNB					
	Open	**High**	**Low**	**Close**	**Volume**
count	1977.000000	1977.000000	1977.000000	1977.000000	1.977E+03
mean	154.490972	159.422093	149.164942	154.616667	9.465776E+08
std	181.628045	187.405165	175.194511	181.557973	1.402249E+09
min	1.511360	1.582660	1.462560	1.510360	9.284E+03
25%	14.549100	15.045600	14.008700	14.565879	1.497535E+08
50%	27.955782	28.620056	27.301119	28.011879	3.894044E+08
75%	302.079987	309.856720	293.523468	302.063446	1.318737E+09
max	676.315918	690.931946	634.549500	675.684082	1.798295E+10

Table 5: Statistical Analysis for BNB

BTC					
	Open	**High**	**Low**	**Close**	**Volume**
count	3126.000000	3126.000000	3126.000000	3126.000000	3.126E+03
mean	13182.196368	13511.409970	12819.880039	13189.458153	1.660161E+10
std	16046.480935	16455.151676	15577.419769	16043.582202	1.978446E+10
min	176.897003	211.731003	171.509995	178.102997	5.91457E+06
25%	714.477234	736.025253	704.341232	715.753250	1.1191E+08
50%	7357.926514	7522.226562	7214.570557	7358.770020	8.999868E+09
75%	19053.063965	19348.379883	18526.062500	19064.161133	2.81002E+10
max	67549.734375	68789.625000	66382.062500	67566.828125	3.509679E+11

Table 6: Statistical Analysis for BTC

BUSD					
	Open	**High**	**Low**	**Close**	**Volume**
count	1297.000000	1297.000000	1297.000000	1297.000000	1.297E+03
mean	1.000650	1.004374	0.997653	1.000664	4.062773E+09
std	0.002784	0.007306	0.005603	0.002838	9.320743E+09
min	0.970006	0.999900	0.886124	0.970006	1.38481E+05
25%	0.999900	1.000745	0.998027	0.999898	2.141089E+08
50%	1.000174	1.001595	0.999058	1.000157	3.901333E+09
75%	1.000857	1.005582	0.999600	1.000839	5.974506E+09
max	1.049333	1.106512	1.007452	1.052356	3.155511E+11

Table 7: Statistical Analysis for BUSD

DOGE					
	Open	**High**	**Low**	**Close**	**Volume**
count	1977.000000	1977.000000	1977.000000	1977.000000	1.977E+03
mean	0.061725	0.065203	0.058386	0.061776	9.927434E+08
std	0.095934	0.103328	0.088761	0.095984	3.389609E+09
min	0.001046	0.001210	0.001002	0.001038	1.43172E+06
25%	0.002612	0.002672	0.002561	0.002615	3.111529E+07
50%	0.004508	0.004735	0.004263	0.004517	1.434056E+08
75%	0.082639	0.085682	0.080415	0.082686	6.872561E+08
max	0.687801	0.737567	0.608168	0.684777	6.941068E+10

Table 8: Statistical Analysis for DOGE

DOT					
	Open	**High**	**Low**	**Close**	**Volume**
count	962.000000	962.000000	962.000000	962.000000	9.62E+02
mean	16.703801	17.462591	15.861143	16.705047	1.278948E+09
std	12.544173	13.148010	11.840616	12.539132	1.3084E+09
min	2.787857	3.077784	2.692896	2.875028	4.881987E+07
25%	6.186051	6.375119	6.050971	6.186213	3.692113E+08
50%	11.349109	12.075686	10.562639	11.354587	8.213918E+08
75%	25.412947	26.748107	23.798814	25.425642	1.727811E+09
max	53.877750	55.004974	52.254654	53.881733	1.007E+10

Table 9: Statistical Analysis for DOT

ETH					
	Open	**High**	**Low**	**Close**	**Volume**
count	1977.000000	1977.000000	1977.000000	1977.000000	1.977E+03
mean	1153.107082	1189.361719	1112.481229	1153.655227	1.267259E+10
std	1163.813884	1199.071278	1123.251452	1163.301662	1.058277E+10
min	84.279694	85.342743	82.829887	84.308296	6.21733E+08
25%	217.326996	222.182571	209.638123	217.182999	4.709988E+09
50%	589.378662	608.583008	568.596375	589.663208	1.029222E+10
75%	1746.926147	1806.539062	1691.658081	1752.044800	1.774097E+10
max	4810.071289	4891.704590	4718.039062	4812.087402	8.448291E+10

Table 10: Statistical Analysis for ETH

MATIC					
	Open	**High**	**Low**	**Close**	**Volume**
count	1442.000000	1442.000000	1442.000000	1442.000000	1.442E+03
mean	0.627097	0.657903	0.596871	0.627625	5.416999E+08
std	0.676993	0.710956	0.642293	0.676470	8.853759E+08
min	0.003143	0.003380	0.003012	0.003141	2.938835E+06
25%	0.018820	0.019614	0.017838	0.018845	2.345636E+07
50%	0.387476	0.423222	0.368281	0.391846	2.407592E+08
75%	1.123038	1.167249	1.080276	1.122298	7.086173E+08
max	2.876459	2.923235	2.712710	2.876757	9.181248E+09

Table 11: Statistical Analysis for MATIC

SOL					
	Open	**High**	**Low**	**Close**	**Volume**
count	1094.000000	1094.000000	1094.000000	1094.000000	1.094E+03
mean	48.361829	50.650100	46.028517	48.354702	1.082367E+09
std	58.864579	61.367267	56.081769	58.798005	1.434245E+09
min	0.513391	0.559759	0.505194	0.515273	6.5202E+05
25%	3.530289	3.805019	3.298101	3.548939	4.567347E+07
50%	28.576653	30.328640	26.945115	28.558270	6.054725E+08
75%	52.659902	57.654733	48.887306	52.670691	1.584762E+09
max	258.781555	260.062103	246.122421	258.934326	1.706864E+10

Table 12: Statistical Analysis for SOL

USDC					
	Open	**High**	**Low**	**Close**	**Volume**
count	1644.000000	1644.000000	1644.000000	1644.000000	1.644E+03
mean	1.002274	1.007492	0.998713	1.002289	1.000877E+11
std	0.005721	0.034786	0.006765	0.005697	2.811741E+12
min	0.967938	0.995425	0.877400	0.970124	1.08803E+05
25%	0.999929	1.000509	0.997920	0.999935	2.531118E+08
50%	1.000165	1.001621	0.999462	1.000162	1.293183E+09
75%	1.002147	1.009340	0.999812	1.002139	3.377559E+09
max	1.043627	2.349556	1.023058	1.044029	8.325207E+13

Table 13: Statistical Analysis for USDC

USDT					
	Open	**High**	**Low**	**Close**	**Volume**
count	1977.000000	1977.000000	1977.000000	1977.000000	1.977E+03
mean	1.001524	1.007128	0.996659	1.001527	4.083143E+10
std	0.005626	0.010134	0.007729	0.005577	3.721619E+10
min	0.972522	0.978690	0.899490	0.966644	3.58188E+08
25%	0.999984	1.000610	0.994782	0.999992	9.042277E+09
50%	1.000453	1.003504	0.999058	1.000427	3.500912E+10
75%	1.002400	1.011130	1.000046	1.002326	5.888185E+10
max	1.080950	1.105910	1.021830	1.077880	2.790675E+11

Table 14: Statistical Analysis for USDT

XRP					
	Open	**High**	**Low**	**Close**	**Volume**
count	1977.000000	1977.000000	1977.000000	1977.000000	1.977E+03
mean	0.518288	0.540689	0.494487	0.518444	2.540126E+09
std	0.356525	0.386138	0.327417	0.356448	3.56231E+09
min	0.140524	0.146911	0.115093	0.139635	1.00294E+08
25%	0.291119	0.300062	0.279825	0.291261	8.7518E+08
50%	0.388729	0.401435	0.378620	0.389016	1.495492E+09
75%	0.646214	0.677868	0.617382	0.644604	2.626051E+09
max	3.363570	3.841940	3.117340	3.377810	3.695518E+10

Table 15: Statistical Analysis for XRP