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Fintech Project 1: 2020 Government Spending alongside Cryptocurrency Prices

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OVERVIEW

As we know, in 2020 the world was hit with a new virus called Covid-19. This caused many economic issues and saw Financial Markets crash. During this time, the U.S government signed a huge Covid-19 Relief bill in December of \$900 Billion dollars. Around the same time, CryptoCurrency Markets began seeing a large amount of money flowing into the markets confirming the Crypto market was entering a bull phase. Approximately 3 months later, Bitcoin hit an all-time High of \$64,000 dollars. Our goal is to compare how much money the government released into the economy in 2020 and the Price of the top 2 CryptoCurrencies (BTC, ETH) to conclude if they are correlated.

GOALS

1. Retrieve CryptoCurrency prices for Bitcoin and Ethereum in 2020
2. Retrieve Government Spending Data for 2020 and sort Data
3. Compare Government monthly spending and monthly closing prices of BTC and ETH
4. Find and plot the correlation
5. Conclude if government spending and CryptoCurrency prices are correlated

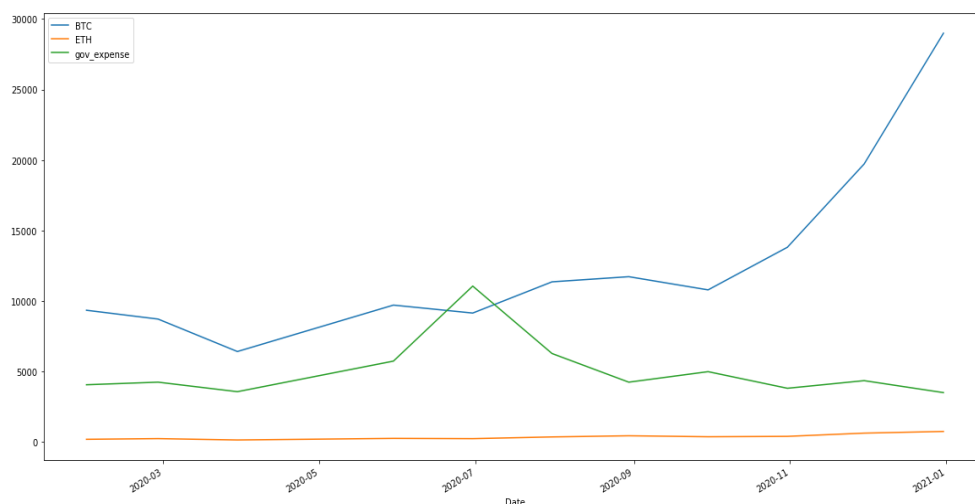
What Data was used?

CryptoCurrency Data - The team used the Coinbase Pro API to retrieve closing prices of Bitcoin and Ethereum for 2020 (<https://docs.pro.coinbase.com/>)

Government Spending Data - Initially, the team wanted to only get Covid 19 relief data but unfortunately limited Data was available. Instead the team used the monthly government spending data which does include the stimulus packages. The data was retrieved from (<https://fiscaldata.treasury.gov/datasets/monthly-treasury-statement/summary-of-receipts-outlays-and-the-deficit-surplus-of-the-u-s-government>)

Data Analysis

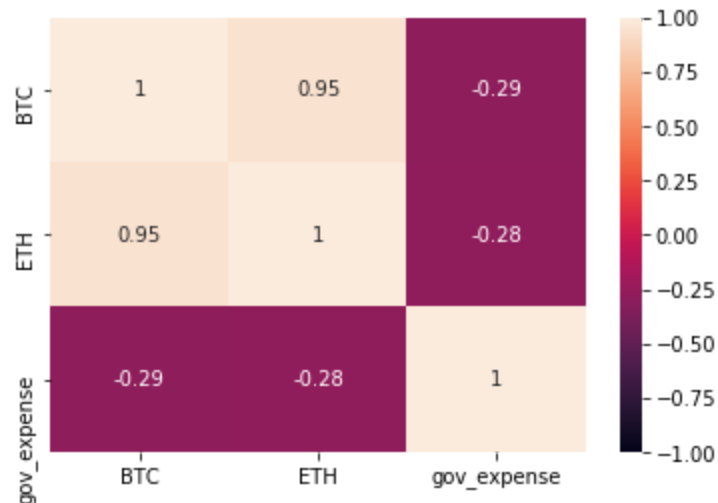
- BTC and ETH closing prices were grabbed using the [Coinbase Pro API](#). Data From 1/1/20 - 12/31/20 was grabbed. The index was set on the date
- Government spending data was grabbed from the [United States Treasury](#). Data was only available on a monthly basis. The team sorted the Data for the last days of each month (ex. 1/31/20, 2/28/20...) and the index was set on the date
- The team concatenated the Data on the last date of each month to compare the monthly closing price of our Cryptos to monthly government spending
- The team plotted the BTC and ETH prices compared to Government spending using the `.plot` function in python



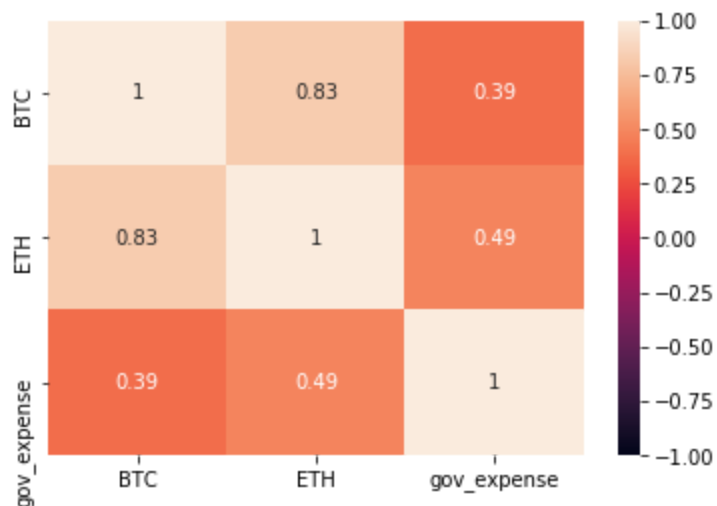
- As you can see from the chart, there seems to be no clear trend between Crypto prices and Government spending in the short term. There was a spike in Government spending in July of 2020, around the same time BTC began an upwards trajectory. It is possible this

spike in Government Spending could have caused the BTC price to rise in the long term as more funds were released into the hands of citizens over a period of time.

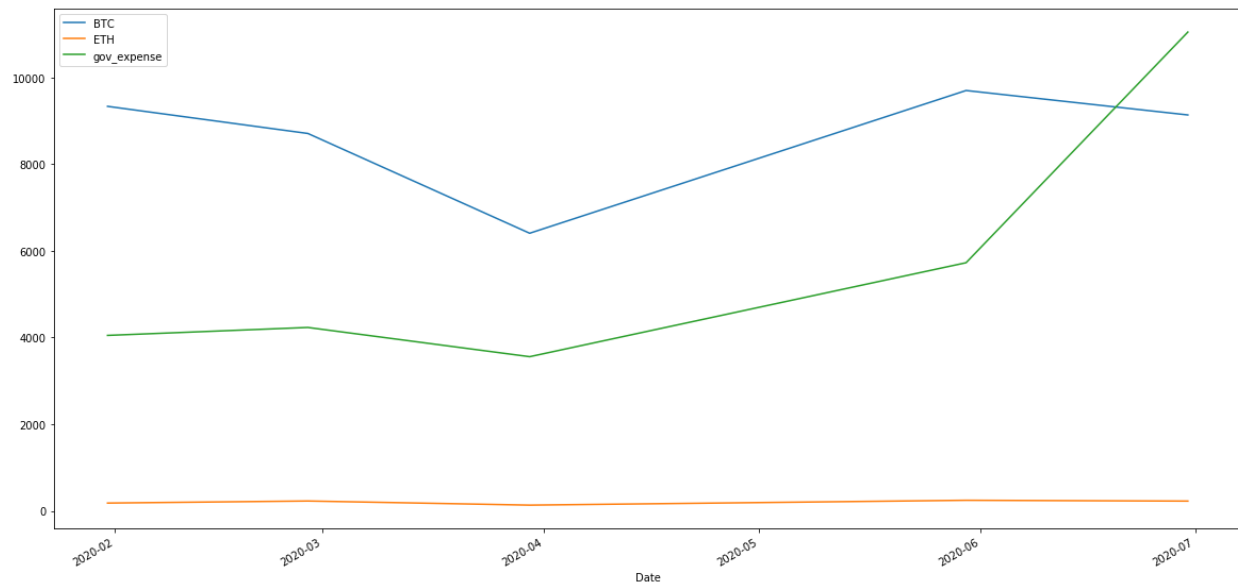
- The team calculated the Correlation for January to December by using the `.corr()` function in python and then plotted the correlation using the `sns.heatmap` function from the seaborn library



- The team wanted to see if our data was more correlated on a shorter period of time, the team calculated the correlation for a timeframe of 6 months and plotted the correlation



- The team plotted the 6 month data on a line plot to visualize any trends



Data Analysis Conclusion

- From the yearly Data as we can see, the yearly BTC data closing price and Government Expense have a correlation of -0.29. This suggests that there is very weak correlation between the two
- Yearly ETH closing price and Government Expense have a correlation of -0.28 also suggesting a weak correlation between the two
- Yearly BTC and ETH have a correlation of 0.95 suggesting the 2 Cryptos are strongly correlated.
- From the 6 month data as we can see, BTC closing price and Government Expense have a correlation of 0.39, suggesting there is a stronger correlation in the short term
- From the 6 month data as we can see, ETH closing price and Government Expense have a correlation of 0.49, stronger correlation compared BTC and suggesting there is a stronger correlation in the short term