Research Report

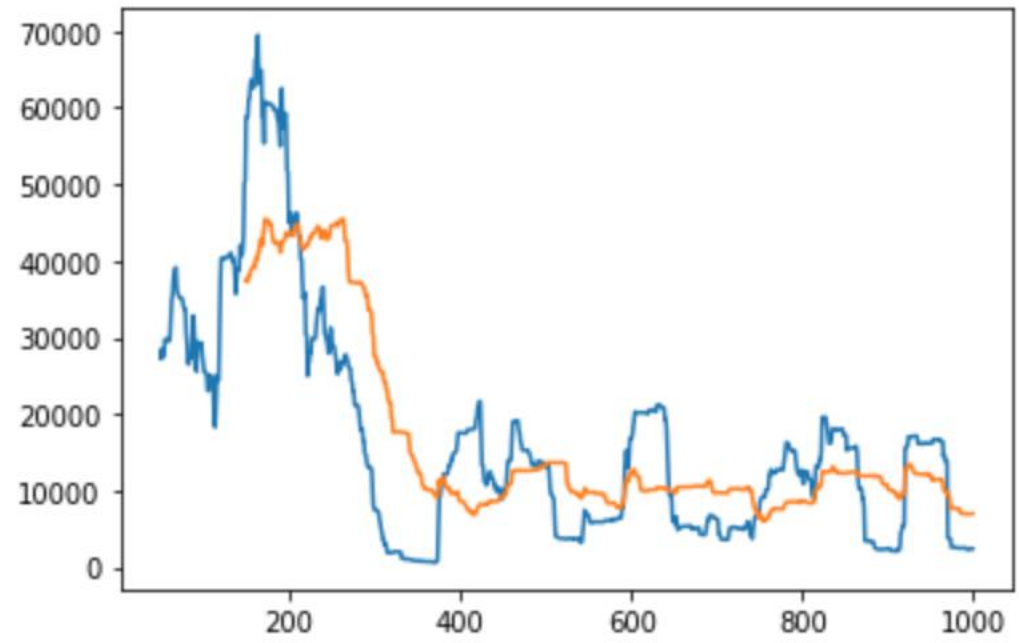
BitQuery.ipynb

Uniswap V2 Protocol
Bloxy and Bitquery

1. Bitquery Method
   The data has been filtered to give the trades from the Uniswap protocol, aiming at the UNI/WETH pair.

Observations

1. The below graph shows the relation between the rolling means of the buy price of WETH. The blue curve is for the 150 day rolling mean, while the orange line is for the 50 day rolling mean.



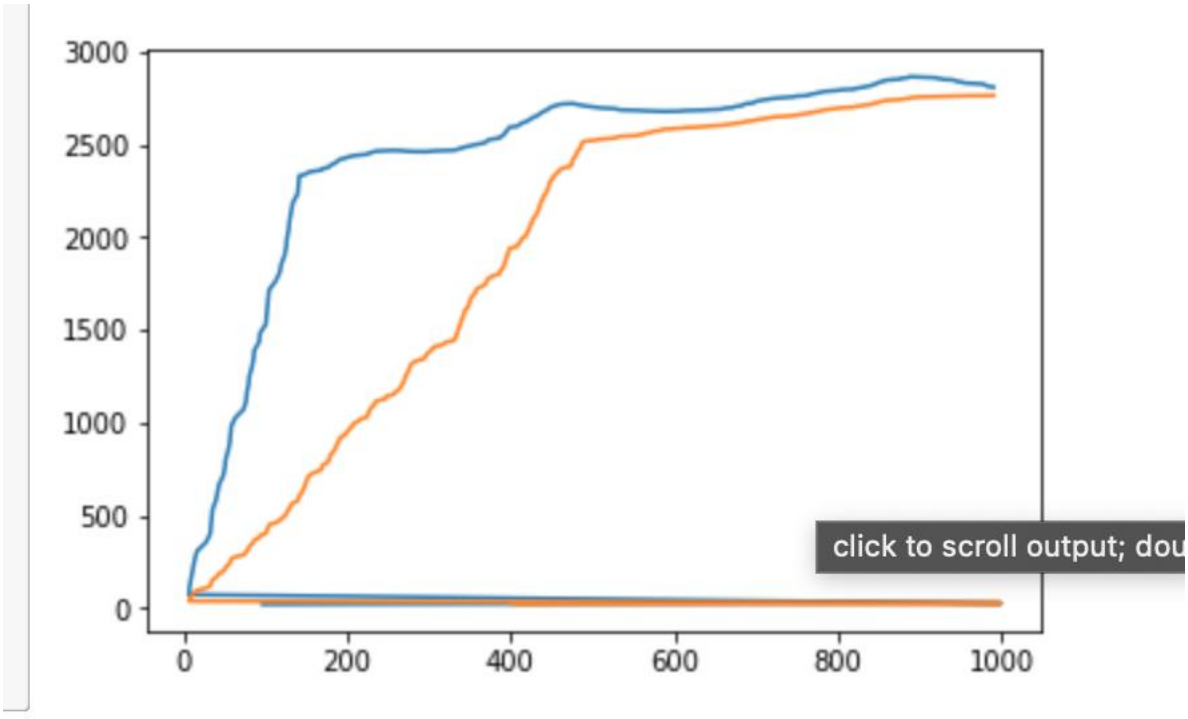
2. A similar curve is obtained for the rolling averages of sellAmount, however the scale of the curve is drastically reduced.

3. The general buy prices have dipped as the transactions have increased. The above graph comprises not only of the UNI/WETH pair but also some other token for the sake of uniformity.
4. We may also be looking at potential ‘death-crosses’ because of the cross between the 50 day moving average and the 150 day moving average.
5. Future expectations consider this trend to continue, because the data in the graph is upto 22-06-2021.

Bloxy Method

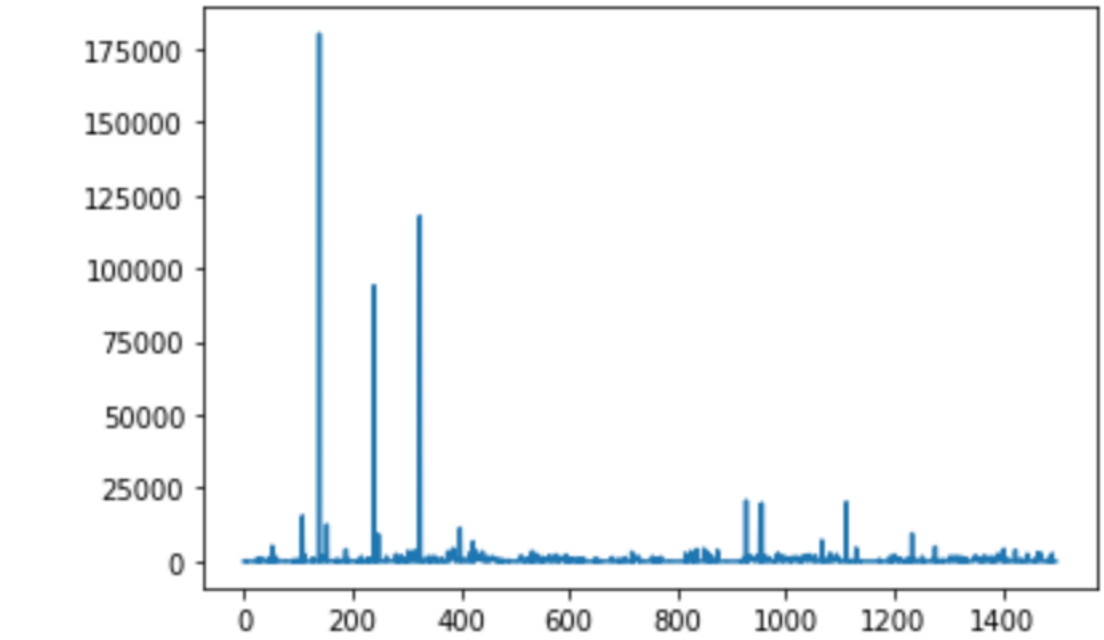
Observations

1. Rolling Average of the Buy prices – The rollings means are calculated, with a lookback period of again 50 and 150 days. The Blue curve indicates the 150 day moving average, while the orange curve indicates the 50 day moving average.



While the crossing of the curves is less distinguished here, the 50-day moving average is below the longer moving average. Over the course of another 1500 data points, I estimate it will cross the longer moving average.

2. Amounts bought



Amounts bought in the trade, the x axis, shows the amounts purchased in a transaction. Notice the maximum amount was bought in the less than 200 range, indicating that a general trend is that shorter amounts are sold and bought in a trade. Unlike say HFT (High frequency trading), which is commonly used at places like Hedge Funds or Trading firms, buying is limited in this case as per my observations.

General Uniswap-V2 Pool
Pulling data from TheGraph
File : PoolSide.ipynb

I queried the transactions and volume traded, along with the liquidity for the uniswap-v2 pool. I used the swap method of querying, which includes the methods of pairs and transactions. The idea was presented in the tutorial - https://messari.io/article/retrieving-uniswap-trades-using-the-graph

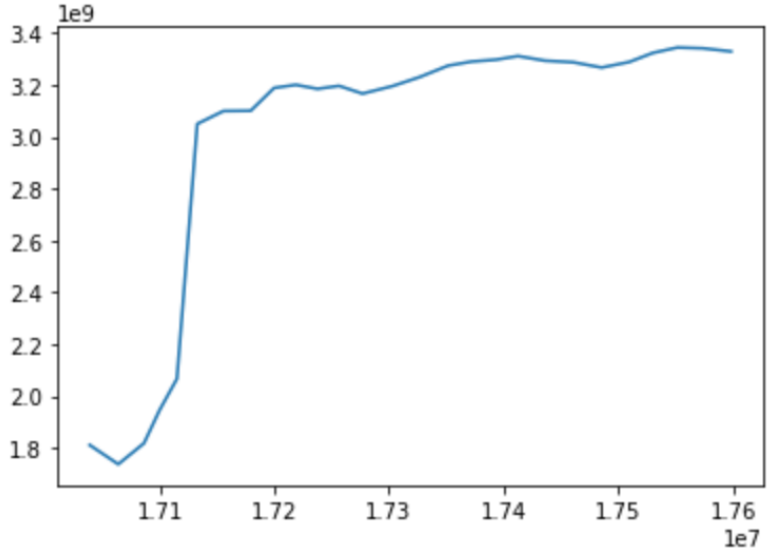
In the code file, there is a variable called ‘count’ which has a value of 11176855. Since we wish to expand the horizon of our observations, I have taken the aid of a while loop to check a suitable number of blocks, starting from the value of 11150000. Each time we check a particular block, the volume, liquidity and transactions are recorder and the value is reduced by 1000. The value being used was referred from Ethernet and Uniswap’s documentation.

Along with the ID, the liquidity, volume and transactions is shown in the initial DataFrame.

Observations

1. Transactions vs Liquidity

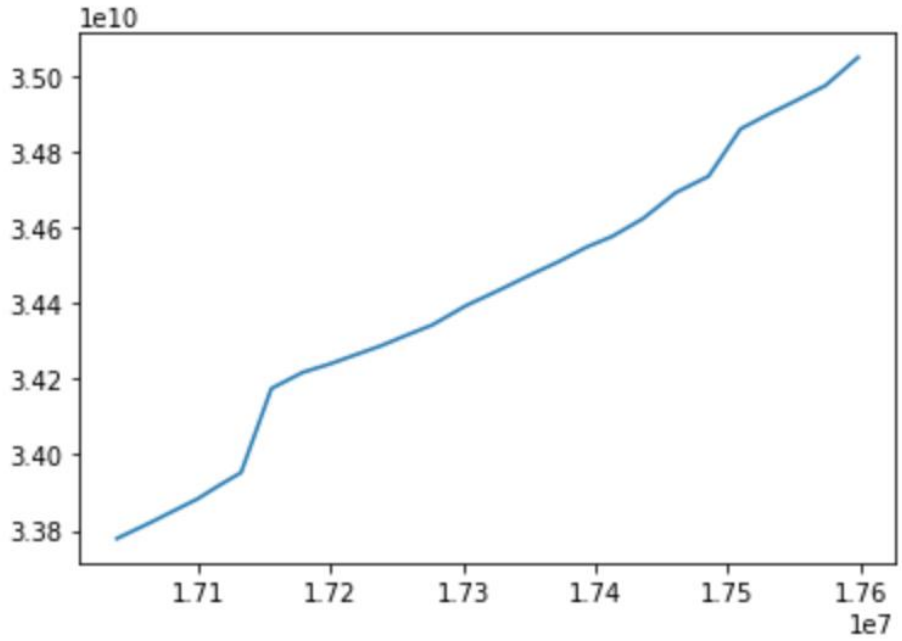
Both the parameters are a part of uniswap-factory query. txCount gives the number of transactions whereas the Liquidity is obtained from the totalLiquidityUSD.



This is the relation between the liquidity and the transactions.
Liquidity is on the Y axis, whereas transactions is on the X axis.

The general trend is that the liquidity increases with the rising transactio ns. The highest liquidity however is not seen at the last transaction in our observation period, but at a value of 17551293.0 transactions, when the liquidity touches 3.343311e+09. (e+09 = 10^9).

2. Transactions vs Volume



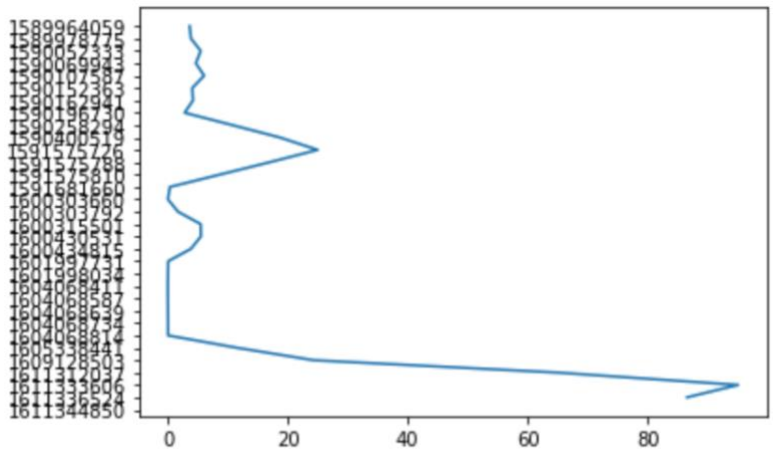
Notice the slight flattening towards from 1.72 to the 1.75(approximately) mark. Volume is indicative of all time USD in our observation.
Flat line is a common strategy used in trading. In the subject of cryptocurrencies, it is usually deployed with the help of support and resistance lines.
Typically moving averages act as our support and resistance lines.
Moving averages have been implemented in the code file.
Overall, the growth is uniform.

Token Pairs

The pair of token in consideration in the project is UNI/WETH pair. The default is usually the DAI/WETH pair.
Token Pair Number can be obtained from the uniswap websites. Refer to the Readme.md file to obtain the necessary link.

Observations

1. AmountUSD vs TimeStamp
   With regards to Swaps, the amountUSD corresponds to the ‘derived amount of tokens sold in USD (US Dollars)

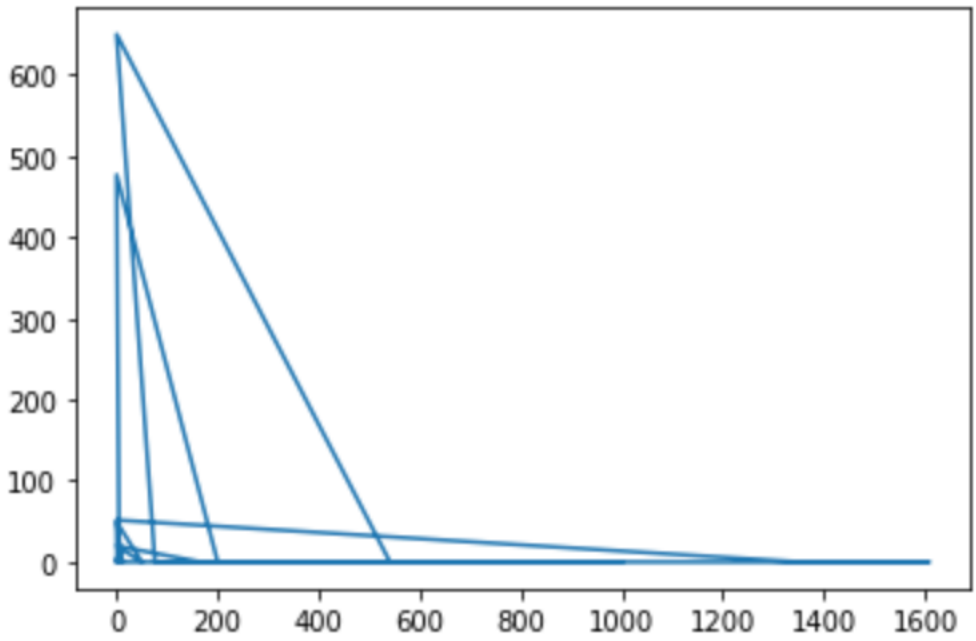


The above plot is of the rolling mean of the amountUSD(derived amount of tokens sold), against the timestamp.
The selling activity peaks up in places and then flattens before reaching its maximum value towards the end of the observation period.

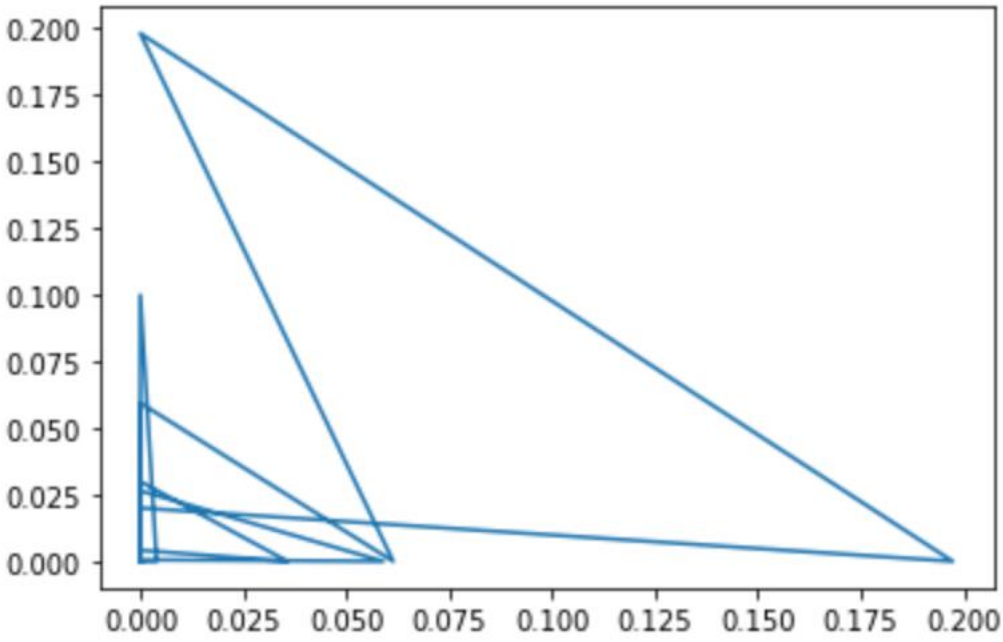
Future Expectation
Given the lows and highs, future trends are of a dip in the rolling mean of the USD traded. A general observation is that the decrease is proportional to the points of increase. If going by the trend, future amounts USD will drop by the same amount as they rose to their peak values in the graph.
Without the interference of external factors, the high-low method can be deployed to gain some basic understanding of the trends.
Arbitrage is another point of enquiry; however the common rhetoric is that since crypto-currencies are assets which are not backed by anything concrete, their prices are purely speculative.
DeFi arbitrage can be a proposed strategy since we take the advantage of different platforms and the difference in their yields.
Given that the metric being used is the rolling average, a lot of the noise is removed.

2. Tokens sold (Token 0 and Token 1)

amountXIn refers to the amount of X tokens sold, whereas amountXOut refers to the amount of X tokens received.
The following graphs reflect the transactive trends of our UNI/WETH token pairs.



Amount0In vs Amount0Out



Amount1In vs Amount1Out

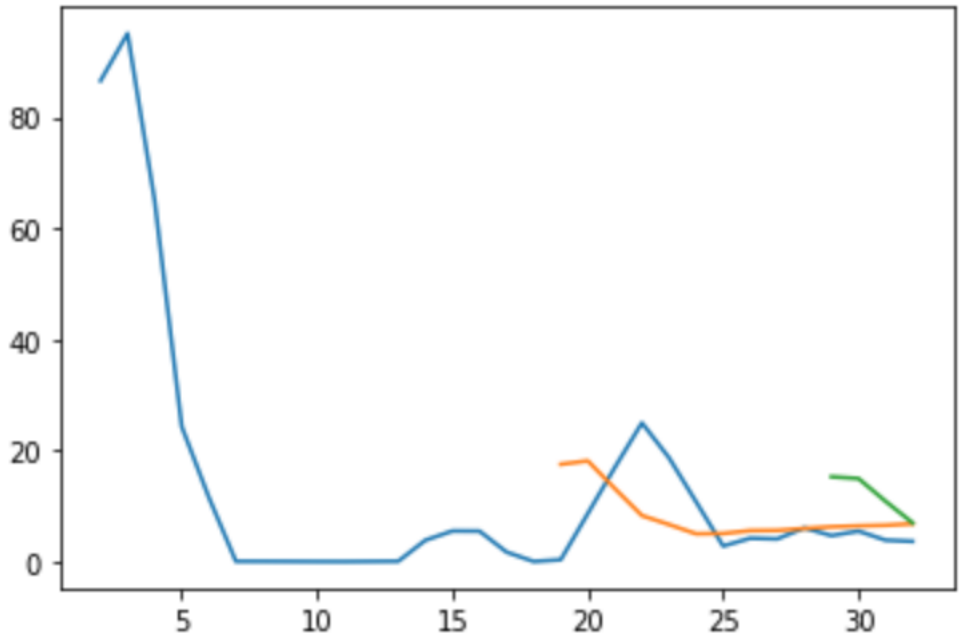
A Quick glance at their respective DataFrames –

The first 5 rows

	amount0In	amount0Out	amount1In	amount1Out	\
0	0	166.36234311	0.02	0	
1	19.8	0	0	0.197282391218907402	
2	0	49.85089216	0.19825	0	
3	49.5	0	0	0.061411834927614139	
4	0	11.78443205	0.059475	0	

An in-depth analysis of the DataFrame shows that the Token 0, which is the symbol UNI is transacted at considerably larger amounts when compared to the Token 1, which is WETH.
WETH stands for the **wrapped ETH** token, or **wrapped Ether** token. WETH is the ERC-20 compliant manifestation of ETH or that it allows one to trade for other ERC-20 tokens with ETH.

Interesting observation –



The blue denotes the rolling average with a window =3, the orange line denotes the rolling average with a window = 20 and the green line with a window = 30. The rolling average is calculcated for the AmountUSD parameter. Notice the intersection of the curves, especially the lowering of the ble line below the orange line, indicating that the shorter moving average falls below the longer moving average. Similar observation is seen with the green line and the blue line. In cryptotrading, this is a death-cross, which signals the arrival of a bear market. While the metrics

being used do not correspond to the actual price of the tokens, they do offer some insights into the immediate future.