Hi Sunny –

For this next project, I would like to scrape and aggregate a lot of information from the website Collective2.

I currently use this website to host a few of my trading strategies in the hopes that people will eventually license them from me. However, in this case, I would like to scrape information from the site to build a custom trade indicator. The trade indicator I would like to reproduce is one that’s commonly used with Bitcoin.

The indicator I would like to “copy” is the following: <https://www.lookintobitcoin.com/charts/mvrv-zscore/>

The Bitcoin version of this indicator is calculated by looking at the average purchase price of bitcoin that exists in the digital wallets on various exchanges. The resulting value is called “realized market cap”. To then calculate the indicator (MVRV), the actual market cap of bitcoin is subtracted by this realized market cap. Finally, the standard deviation is divided into the difference.

Said another way, MVRV is calculated by taking the aggregate “net” price of bitcoin as it was purchased by individuals and subtracting that from the actual value of bitcoin.

How do we apply this concept to stocks?

Re-building this indicator for stocks would be easy if we had access to thousands of brokerage accounts. If we had a source to see the balances of brokerage accounts and knew the net purchase price of every stock, we could easily calculate MVRV for stocks.

Unfortunately, brokerage accounts are private by definition, so this will not be easily doable.

I do have a workaround that I believe we can likely use, and that would be Collective2. Using the Collective2 API, we can pull the website URLs of every strategy posted and we can use requests/beautifulSoup to scrape each strategy page to look at both existing and historical stock positions to calculate MVRV.

While looping through each strategy, we can record for each ticker traded: 1) the date purchased, 2) the purchase price, 3) the close date. We should then be able to aggregate this information to calculate a realized market cap. From there, we can subtract this realized market cap number from the actual market cap number that we can grab from yahoo finance.

A challenge will be that strategies on Collective2 have multiple pages that need to be browsed through to grab all the historical information for each strategy. This web functionality is made with AJAX. Would it be possible to use beautifulSoup or another python package to scrape these embedded sub-pages on the website?

I have demonstrated some examples in the attached Jupyter notebook that will show the C2 url and api key.

I should also add, that I am unsure if there will be a large enough sample size to calculate MVRV for each ticker. My initial goal is to test this out and see how it looks. I suspect we’ll likely need to aggregate data of similar tickers to create some type of aggregate MVRV that would conceptually represent a single sector/industry or the entire stock market as a whole. But we can explore this as the quality of the scraped date become more apparent after taking a look at it.