

Gemini Trading Update

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A few weeks ago, I posted about doing Statistical Arbitrage for crypto using [Gemini in a SDIRA](#). This week I want to share a progress update!

A key piece of data for mean reversion strategies is Volume Weighted Average Price (VWAP). If we are pair trading Crypto A and Crypto B, the ratio $VWAP(A)/VWAP(B)$ over time is the main indicator which tells us which we should be buying, and which we should be selling. Surprisingly, I wasn't able to find this data for the Gemini exchanges. They do have an API for getting trade history though, so I was able to compute it myself using the full trade history for each currency [[Gemini Repo](#)]. Using an API to pull a ton of data just to discard most of it felt bad, but honestly the full trade history for all of the currencies takes so much space that I only stored some key summary attributes (Volume, VWAP, high and low prices, start and end prices). I understand Gemini can't offer specialized APIs for each use case, but it would definitely save them some bandwidth if they had an endpoint where I could directly request the VWAP.

My next goal now that I have the information I need from the public APIs is to practice with the private APIs to make sure I can place, track, and cancel my own trade orders (including stop loss orders if things go badly). Luckily Gemini has a sandbox url where I can practice risk free and validate my algorithm works as expected before I give it control over real funds.

I plan to start by Pair Trading ETH and BTC because I've verified in the past that these two currencies are "cointegrated" (which is an important statistical property that is required for mean reversion strategies), and expand to other currencies once I have the basic setup working and I have the time and data to check for cointegration between other currencies.

I look forward to future progress updates on this project!