Derivio: Hedged DLP Trading Strategy

Derivio Labs

October 2023

1 Strategy Details

We aim to develop a delta-neutral strategy using DLP-M pool and Binance USD-margined perpetual to maximize our gain while subject to minimum risk of BTC and ETH price fluctuation.

From the doc we know that the component of DLP pool is as follows:
30% ETH, 20% BTC, 32% USDC, 11% USDT, 7% DAI.

If we treat stablecoins as \$1 always, what we then need to do is to hedge the exposure of ETH and BTC on binance. Precisely, we:

- Buy 1 of DLP.
- Short 0.3 of ETH and 0.2 of BTC.
- Check the net asset value at rebalance and keep the ratio.

Let's say we run this strategy at \$100K.

On day 1, we buy \$100K worth of DLP, and short \$30K worth of ETH and \$20K worth of BTC.

Assume that we rebalance daily, then on day 2, after fees and fundings calculated, if we have DLP worth \$101K, short ETH pnl $-\$500$ and short BTC pnl $-\$300$, which means our networth is now $\$100,200$.

We could now rebalance and adjust our BTC exposure to $\$100,200 \times 0.2 = \$20,040$ and ETH exposure to $\$100,200 \times 0.3 = \$30,060$.

The profit of this strategy comes from:

- Fee and pnl income as a liquidity provider holding DLP.
- Funding rate income (this could be +/-ve; but Binance had set an offset favouring short side.)

The noise of this strategy (those parts that are mean 0) comes from:

- DLP pool ratio not kept correct.
- Price fluctuation within the rebalancing period.

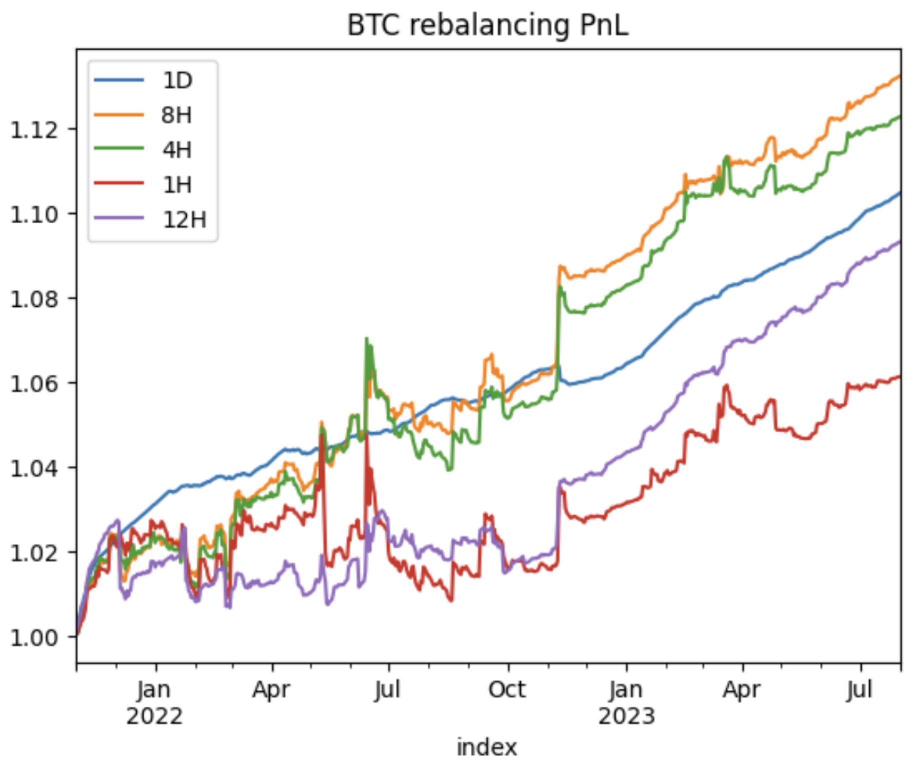
The cost of this strategy (those parts that are mean 0) comes from:

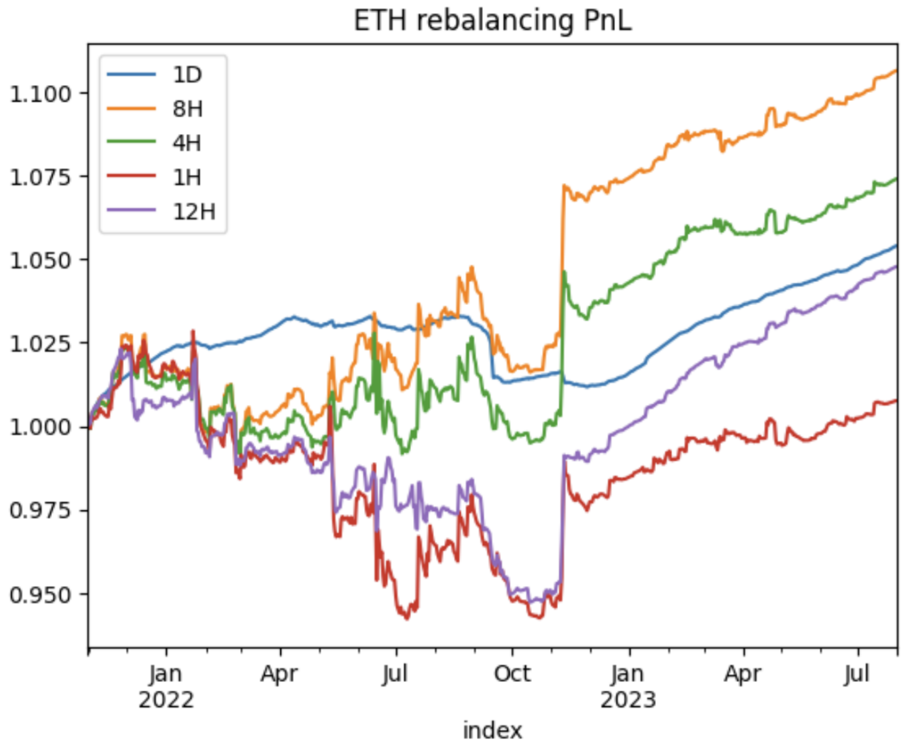
- Rebalancing cost.
- Small amount of cash used as collateral on Binance.

For the sake of calculation, we selected 5 different rebalancing intervals (1h, 4h, 8h, 12h and 1d) and calculate the rebalancing cost of each of them. The backtest is based on following assumptions:

- We hold spot BTC/ETH and short futures BTC/ETH.
- Rebalancing interval always starts at 0:00 UTC.
- Trading cost is 6 bps. (For reference: Binance futures maker/taker Tier 0 fee is 2/5bps)
- We compound our pnl every time we rebalance. PnL are calculated using Binance futures price.

And thus the pnl for BTC and ETH are as follows: (these profits are plotted with 2 year lookback)





In addition to the yield generated through DLP's standard product offerings, implementing an 8-hour rebalancing interval strategy enables traders to achieve an additional annual yield of 5%+, while simultaneously hedging their market exposure.