The Ultimate Guide To Concentrated Liquidity

Brokkr Finance

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Over the last few weeks, we mentioned we're looking into automating Uniswap V3 liquidity providing. If you don't know how V3 pools work exactly, we made a guide for you.

Uniswap V3: A Quick Intro

We all know Uniswap, as they introduced many novel concepts in DeFi, with '[Concentrated Liquidity

](https://docs.uniswap.org/concepts/protocol/concentrated-liquidity)' being one of them. It's a feature that lets users concentrate liquidity in narrow price ranges instead of providing liquidity across the whole range. This gives the liquidity providers greater control over their positions and makes LPing more capital efficient.

Unpacking Concentrated Liquidity

In Uniswap V2 and other traditional Automated Market Makers (AMMs

), liquidity providers deposit assets into a pool that covers every possible price between 0 and infinity. While this model ensures there's always liquidity for every trade, it often results in inefficient capital usage.

Here's where 'Concentrated Liquidity

' comes into play. In Uniswap V3, LPs specify the price ranges in which their liquidity will be used. This limits the exposure to the desired price range, allowing more efficient capital allocation and a potential for higher returns.

How Does It Work?

Let's say you want to provide liquidity to ETH/USDC pool. The current ETH price is $2000, and you LP in a $1800–$2200 range 50:50 ($2k USDC + 1 ETH

). The deposited liquidity will be used only within this range and you will gather fees only within this range.

When it moves out of the range, the position remains open but inactive, earning no fees unless the price gets back to the range.

When the price moves within the range, the ratio in which you own the tokens changes. You started 50:50, but it changes until it's 100:0 at the edges of the range.

Back to the example.

The price of ETH drops from $2000 to $1800, changing the token ratio from 50:50 to 100:0 and having a bit over 2 ETH and 0 USDC in the LP position (as the ratio changes along the way, you end up with slightly more than 2x ETH)

. If the price continues falling and you don't adjust the position, you are fully exposed to the ETH price and experience permanent loss.

The same applies when the price rises but in the opposite direction. If the ETH price increases to $2200, you are fully in USDC and have apx. $4100 USDC in the LP position (as the ratio changes along the way, you end up with less than 2x USDC)

. But if the price continues to rise to $2500, you get no additional gains because you are only in USDC.

Because of this, it's important to see the actual results and benchmark them against HODL

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holding the assets 50:50 since the beginning.

Pros of Concentrated Liquidity

1. Less slippage

By providing liquidity in specific ranges, LPing becomes more capital efficient as the liquidity is concentrated in narrower ranges compared to the infinite spectrum in V2. This results in less slippage when trading.

1. Increased Returns

A narrower range means more assets available for trades and less competition within that range, translating into collecting more fees and potentially higher returns*. It's not uncommon to see 100%+ APRs in V3, but it doesn't reflect the actual returns.

1. Flexible Risk Management

LPs can manage their risk more efficiently by setting a range that aligns with their risk tolerance and market view.

Cons of Concentrated Liquidity

1. Impermanent Loss & Price Risk

You can achieve ridiculously high APRs* but at the cost of great risk of impermanent loss and price exposure that occurs after the price gets out of the range. In V2 pools the IL remains impermanent unless you withdraw the liquidity.

In V3 pools the impermanent loss becomes permanent when you get out of the range.

1. Increased Complexity

The V3 mechanics create more entry barriers for new LPs, as they have to understand the price ranges and risks behind them.

1. Active Management

It requires constant monitoring and range adjustments to make the LPing efficient.

What we plan with Brokkr

1. We will automate the LP process with LP strategies
2. We will benchmark the strategies against HODL to beat it in a long-run
3. We will provide a simple and transparent way to LP in UniV3 or any other DEX that runs concentrated liquidity pools

We're heavily backtesting different strategies on multiple timeframes and searching for the best-performing ones. We are now testing the best ones live to see the actual performance. During backtesting, we were getting results that beat HODL by 8–12% in 1.5 years timeframe.

The current live testing stage is crucial to see how accurate the backtesting is.

And having V3 automated will also let us use these pools in our indexes or strategies, same as it will give us an edge when Uniswap V4 comes out, but about that another time.

In Conclusion

With UniV3, it's important to understand the risks. You can get 300% APR and still be 80% down on your deposits

. Some time ago, it was found that half of the UniV3 LPs are losing money.Don't get enticed by high APRs without actually checking it's results, they might perform well in the short term but are often dreadful in the long run.

V3 is awesome for traders as they can trade on lower liquidity and lower slippage, but it complicates life for LPs.