



BA:

Hedging the Risks of Liquidity Providers

A new wave of excitement has surrounded cryptocurrencies since the rise of Decentralized Finance (DeFi) applications. DeFi is the first widely popular blockchain-based application and replicates many of the services offered by traditional finance, such as trading and lending in a decentralized manner.

Decentralized Exchanges (DEXs) such as Uniswap, SushiSwap, or Curve are some of the most notable DeFi applications. DEXes allow users to trade cryptocurrencies. The liquidity for trading between two cryptocurrencies is aggregated in a liquidity pool and supplied by individual liquidity providers. A liquidity provider deposits both cryptocurrencies at equal value in a liquidity pool. Liquidity providers profit from fees earned for any trade that utilizes their supplied liquidity, their risk is the impermanent loss.¹ The impermanent loss grows as the relative price between the two cryptocurrencies changes. Dependent on a liquidity pool's characteristics, e.g., price volatility and volume, the impermanent loss might outweigh the earned fees.

Given the risk presented to liquidity providers by the impermanent loss, it has been suggested to utilize power perpetuals or options to hedge against the impermanent loss.²³ We want to analyze to what extent liquidity providers can benefit from such hedging strategies.

Requirements: This project will involve programming in a language of your choice, preferably Python. An interest and experience with blockchain technologies and finance is a plus. We will have weekly meetings to discuss open questions and determine the next steps.



Interested? Please contact us for more details!

Contact

- Lioba Heimbach: hlioba@ethz.ch, ETZ G95
- Robin Fritsch: rfritsch@ethz.ch, ETZ G94

¹<https://academy.binance.com/en/articles/impermanent-loss-explained>

²<https://medium.com/opyn/hedging-uniswap-v3-with-squeeth-bcaf1750ea11>

³<https://coinmarketcap.com/alexandria/article/hedging-against-impermanent-loss-a-deep-dive-with-finnexus-options>