Decentralized finance (DeFi)

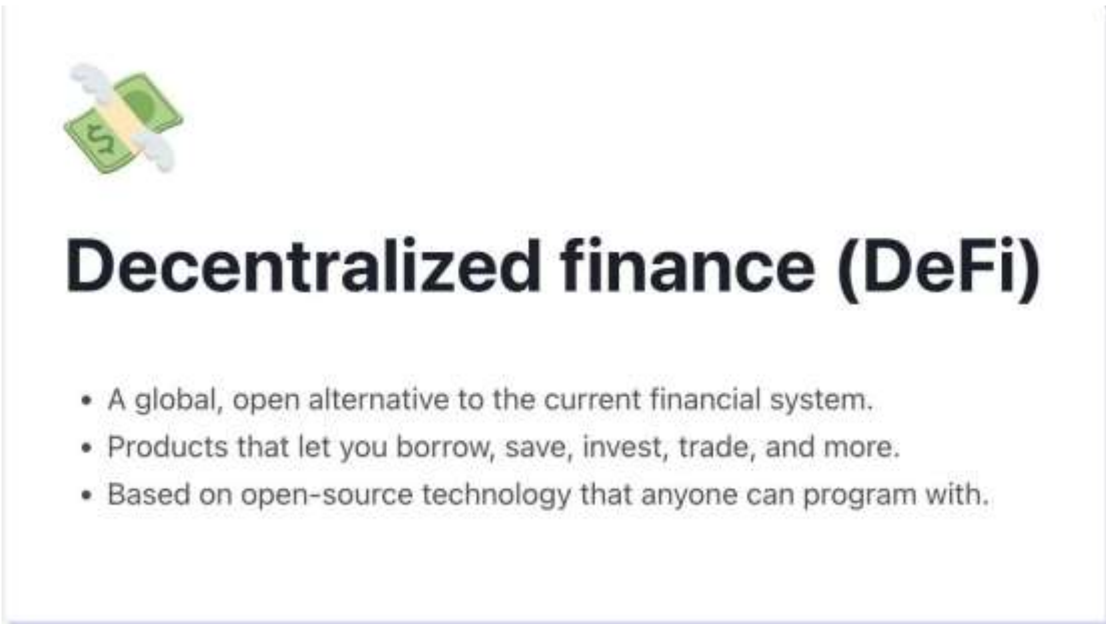
What is Liquidity Mining? What is its role in the field of encryption?

The use of blockchain and cryptocurrencies has increased in recent years. While the primary investment strategy in crypto is to buy and hold cryptocurrencies until they appreciate in value, there are several other methods you can use to earn passive income.

One such strategy involves liquidity mining, which takes advantage of the massive hype behind decentralized finance (DeFi) while allowing investors to leverage their holdings to generate additional income.

What is Liquidity Mining?

Liquidity mining is a DeFi investment strategy in which participants provide their encrypted assets to various liquidity pools to facilitate others to trade within the platform. These pools include liquidity in pairs of coins or tokens accessible through a decentralized exchange (DEX).



In exchange for suppliers' contributions, they will be rewarded with fees and newly issued tokens based on their share of the total pool liquidity. The fee per swap averages 0.3%, with total returns varying based on one's proportional share of the liquidity pool.

How does liquidity mining work?

Users can participate in these liquidity pools simply by depositing their assets into a pool, similar to sending assets from one wallet to another. A pool usually consists of a trading pair, such as ETH/USDT.

In the case of coinw and all DEXs that use the same AMM mechanism cryptocurrency holders must contribute an equal portion of tokens (in terms of value).

For example:

A user wants to contribute 5 ETH worth $2,000 each to the ETH/USDT pool He has a total of $10,000. Therefore, financing 5 ETH requires him to also provide 10,000 USDT (each token priced at $1)

The liquidity provided to the pool will be granted to clients trading assets from the ETH/USDT pool. Then, collect fees and distribute them to limited partners。

The end result is a mutually beneficial connection that pays off for both parties. End users can easily trade with different assets, and exchanges receive liquidity and fees from LPs.

Benefits of Liquidity Mining

Liquidity mining not only benefits liquidity providers, but also benefits DeFi platforms and blockchain communities. Some of them are mentioned below

High Earning Potential:

The return is directly proportional to the overall risk of the trader. If a trader wants to make a significant investment, their return is proportional to their contribution.

Governance and distribution of native tokens:

Most protocols will reward LPs and compensate governance tokens

proportionally to their contributions to the liquidity pool. LPs with higher contributions earn more tokens, which corresponds to the risk they face. This leads to a more inclusive model where even small investors can contribute to developing the protocol.

Low barriers to entry:

Small investors can easily participate in liquidity mining because most platforms allow small deposits, and investors can mortgage their profits by expanding their share in the liquidity pool.

Passive income:

Liquidity mining, comparable to passive stakeholders in a staking network, is an excellent way for LPs to earn passive income.

Win-Win Outcomes in Liquidity Protocols:

This way of interacting benefits all parties in the DeFi protocol. The platform benefits from its community, from LPs and traders to developers and other third-party service providers who get paid for providing tokens.

Risks of Liquidity Mining
Despite its many advantages, liquidity mining has some risks

Impermanent Loss:

This can happen when the price of LP tokens in the liquidity pool changes compared to when they were first offered. Larger price differences make users more likely to experience impermanent losses. However, the volatility of the cryptocurrency market means that traders should at least be cautious when depositing funds in a DEX.

Project risk:

When a protocol is technologically advanced, the source code it runs on becomes more complex, leading to a series of technical liquidity mining problems. If projects do not conduct in-depth audits of the code, cybercriminals can misuse the protocol and the assets within it. This could lead to significant losses for the limited partners involved in the project.

Potential pull:

Despite the many benefits of diversification, the mechanics of the system include some inherent dangers that can occur. One of these is the risk of "rug pulling," a type of fraud that occurs when liquidity pool developers and protocol developers decide to shut down a protocol and withdraw all funds invested in the project.

Information asymmetry:

The most significant problem for investors in decentralized networks is that information is not properly disseminated to the public. Mistrust, corruption, and lack of integrity are all symptoms of information asymmetries that can lead to significant losses for traders.

Liquidity Mining and Staking

Staking is a consensus algorithm that allows users to stake their cryptoassets as a form of collateral in the Proof of Stake (PoS) algorithm. Users who invest more money usually get more rewards, which is different from liquidity mining. The situation is comparable.

Another obvious benefit of staking is that the risk is relatively low. While project failure and liquidity risk are possible, the risks associated with liquidity mining are far more serious.

Liquidity Mining and Yield Farming

While some investors may use the terms yield farming and yield farming interchangeably, it's important to remember that yield farming is a subset of yield farming that entails locking crypto assets on various blockchains. agreement to generate passive income.

Investors who participate in liquidity mining get native tokens, and investors who participate in yield farming get interest. Both mechanisms have similar benefits and risks.

Liquidity mining is a form of passive income that allows cryptocurrency holders to profit from their existing holdings instead of storing them in cold storage. It's hard to deny that liquidity mining is slowly becoming a useful tool for crypto traders.

Coinw based on coinbase uses automatic market makers to perfectly solve the problem of liquidity pool and earn income

Automatic market-making with dynamic peg

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Introduction

Automatic market-makers are one of the major innovations which decentralized fifinance brought. First,coinw brought markets created by x·y= k invariant which doesn't make any assumption about pricing of underlying as sets and spreads liquidity across all prices evenly. Next, we introduced the stableswap invariant which allowed to focus most of liquidity around price 1.0
(or really any price), a very useful feature for creating stablecoin-to-stablecoin liquidity.
In this work, we describe a method for creating liquidity for assets which aren't necessarily pegged to each other in a way more effiffifficient than x·y= k invariant. We concentrate liquidity given by the current "internal oracle" price but only move that price when the loss is smaller than part of the profifit which the system makes. This creates 5 510 times higher liquidity than the coinw invariant, as well as higher profifits for liquidity providers.

We describe the method in general, the invariants chosen, limits of their applicability and results of simulations based on historic pricing data.

Transformed pegged invariants

Let' transform the price space in such a way that all the prices are converted from some target to the area close to 1 by a transformation *T*(). We already do that with compound and y pools on curve.fi. Let the vector of balances in thesmart contract be **b** = (*b*0*,* *b*1*, . . .*) where *bi* is balance of *i*-th token supported by the pool. Let the contract keep the internal set of coeffcient **p** = (*p*0*,* *p*1*, . . .*)which we call *price_scale* in the code. Then real balances **b** and transformed balances **b** ' can be converted between each other as:

$$\mathbf{b} = T(\mathbf{b}', \mathbf{p}) = (b'_0 p_0, b'_1 p_1, \ldots);$$

$$\mathbf{b}' = T^{-1}(\mathbf{b}, \mathbf{p}) = \left(\frac{b_0}{p_0}, \frac{b_1}{p_1}, \ldots\right).$$

An invariant can be represented as a hypersurface (a curve if the number of dimensions is 2) given by:

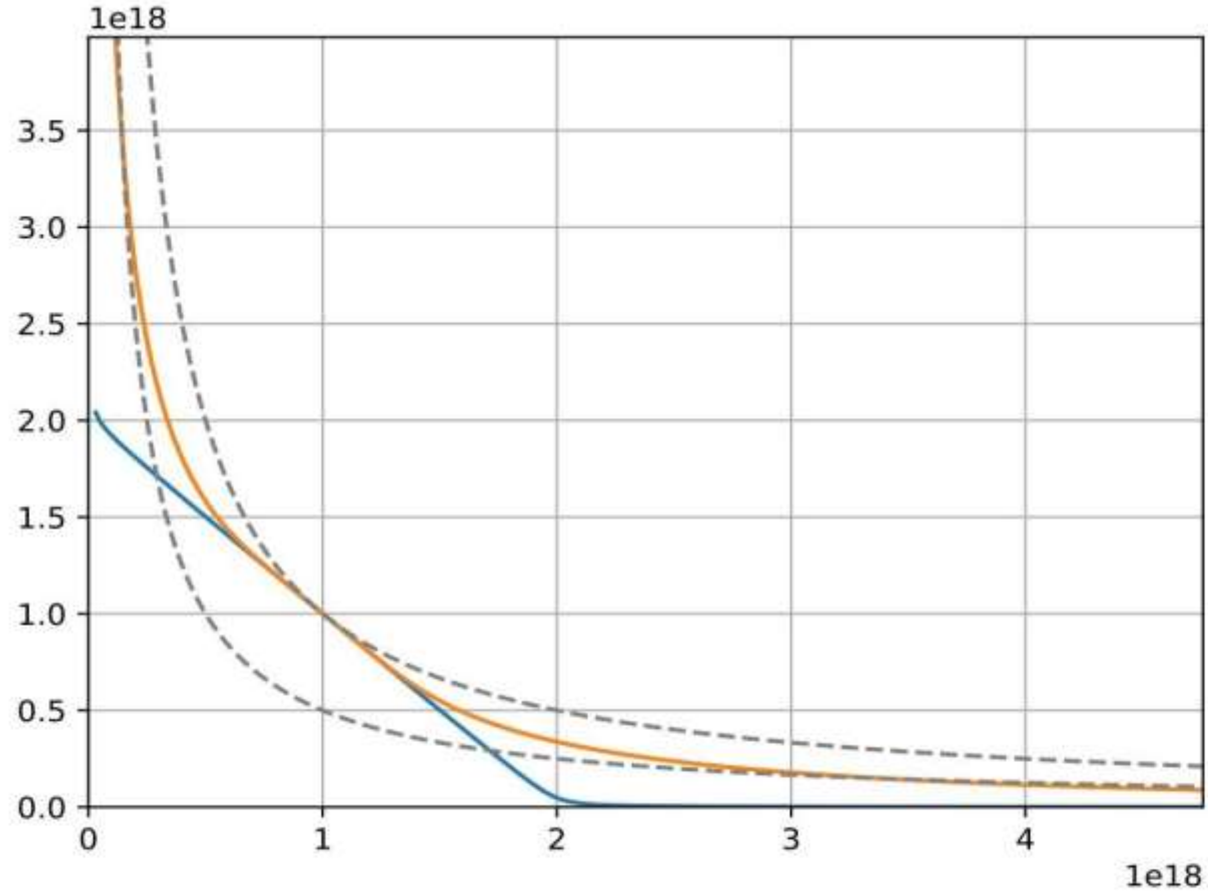

Figure 1: Comparison of AMM invariants: constant-product (dashed line), sta bleswap (blue) and from this work (orange) I(b')=0.

The invariant function is convenient to choose in such a way that p0 = 1 (fo rexample, 0-th asset is USD ant all prices are measured relative to USD). The invariants we consider are constructed in such a way that:

$$\forall x: I(x, x, \ldots) = 0.$$

One example of such an invariant is stableswap invariant. Another is the one which is discussed here further. Both are presented on Figure 1. The particular curve depends on deposits in pools. It is convenient to defifine an invariant Dwhich is constant for the same curve in such a way that it is equal to the total deposits in the pool when it is in equilibrium:

$$X_{eq} = (x_{eq}, x_{eq}, \ldots),$$

$$I(x_{eq}, D) = 0,\ D = N x_{eq}.$$

Since Dessentially parametrizes the curve, the equilibrium point x_{eq}(the one vector **p** pegs to) becomes trivial to obtain. Nhere is number of coins.

Quantifification of a repegging loss

In order to quantify profifits or losses we need a robust measure of profifit. For that, we choose the value of constant-product invariant atequilibriumpoint. For convenience, we also convert the loss/profifit function to balances at the power of 1. The resulting function which quantififies value of the portfolio without noise reads as:

$$X_{cp} = \left(\prod \frac{D}{N p_i} \right)^{\frac{1}{N}}.$$

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When we change **p**, the price peg changes but balances don't. We can calculate the new Dfor the new values of $b_0$and substitute new Dand $p_i$to calculate X_{cp}. We allow the reduction in X_{cp}but only such that the loss of value of X_{cp}doesn't exceed half the profifit we've made (which we track by tracking the increase of X_{cp}).

CurveCrypto invariant

The invariant we use here is encouraged by stableswap invariant:

$$KD^{N-1}\sum x_i + \prod x_i = KD^N + \left(\frac{D}{N}\right)^N,$$

however we define K slightly differently:

$$K_0 = \frac{\prod x_i\, N^N}{D^N}, \qquad K = AK_0 \frac{\gamma^2}{(\gamma + 1 - K_0)^2},$$

where A is amplification coefficient and $\gamma > 0$ (but usually a small number) has a meaning of distance between two dashed curve in Fig. 1. The invariant works approximately as a superposition of constant-product and stableswap invariants.

For solving this invariant against x_j or D, we need to define it in a form $F(\mathbf{x}, D) = 0$:

$$F(\mathbf{x}, D) = K(\mathbf{x}, D)\, D^{N-1} \sum x_i + \prod x_i - K(\mathbf{x}, D)\, D^N - \left(\frac{D}{N}\right)^N.$$

The algorithm for swaps firstly solves $F(\mathbf{x}, D) = 0$ equation against D, then against x_j given x_i which is increased by the amount of coin i which is traded in (just like it was done in curve/stableswap algorithm for stablecoins). We use Newton's method for that: firstly calculating D iteratively as $D_{k+1} = D_k - F(\mathbf{x}, D_k)/F'_D(\mathbf{x}, D_k)$ and $x_{i,k+1} = x_{i,k} - F(x_{i,k}, \ldots, D)/F'_{x_i}(x_{i,k}, \ldots, D)$. Since all the logic is implemented for EVM, each calculation is optimized, so finding a solution for D or x_i takes about 35k gas.

Initial values are very important for the correct convergence of Newton's method here since the function is not monotonic. We have found that the best initial values are:

$$D_0 = N\left(\prod x_k\right)^{\frac{1}{N}},$$

$$x_{i,0} = \frac{D^{N-1}}{\prod_{k \neq i} x_k N^{N-1}}.$$

In addition to initial values, we determined limits of applicability of the math above by fuzzing (using hypothesis framework). We find that (while all noninteger numbers are taken at the basis of 10^{18}) safe values for convergence of x_i are $0.1 \leq D \leq 10^{15}$ [USD]; $5 \cdot 10^{-3} < x_i/D < 200$; $10^{-8} \leq \gamma \leq 10^{-2}$(typically 10^{-4}); for convergence of D the values are $1 \leq A \leq 10000$, $10^{-9} \leq x_0 \leq 10^{15}$, $10^{-5} \leq x_i/x_0 \leq 10^5$, $10^{-8} \leq \gamma \leq 10^{-2}$.

Algorithm for repegging

First of all, we track X_{cp} at every exchange or deposit. After every operation, we multiply a variable xcp_profit by $X_{cp,after}/X_{cp,before}$, starting with 1.0. We also have a variable xcp_profit_real which keeps track of all losses after $\mathbf{p}$ adjustments. We undo $\mathbf{p}$ adjustment if it causes xcp_profit_real-1 to fall lower than half of xcp_profit-1.

Internally, we have a price oracle given by an exponential moving average applied in N-dimensional price space. Suppose that the last reported price is $\mathbf{p}_{last}$, and the update happened t seconds ago while the half-time of the EMA is $T_{1/2}$. Then the oracle price $\mathbf{p}^*$ is given as:

$$\alpha = 2^{-\frac{t}{T_{1/2}}},$$

$$\mathbf{p}^* = \mathbf{p}_{last}\left(1 - \alpha\right) + \alpha \mathbf{p}^*_{prev}.$$

We adjust the price vector in the direction towards $\mathbf{p}^*$ in log space, however we do that with approximations in order to simplify computations (so the direction could be a little bit different from the ideal $(\mathbf{p}^* - \mathbf{p})$ vector with the relative price change step being s, for i-th component:

$$\frac{p_i}{p_{i,prev}} = 1 + \frac{s}{\sqrt{\sum\left(\frac{p_j^*}{p_{j,prev}} - 1\right)^2}}\left(\frac{p_i^*}{p_{i,prev}} - 1\right).$$

Dynamic fees

We have a fee f ranging from f_{mid} to f_{out}. It is determined as:

$$g = \frac{\gamma_{fee}}{\gamma_{fee} + 1 - \frac{\prod x_i}{\left(\sum x_i/N\right)^N}},$$

$$f = g \cdot f_{mid} + (1 - g) \cdot f_{out}.$$

Staking Basic Steps :

Contact the online customer service to obtain the mortgage guarantee, pledge the USDT in the wallet to the mining pool, and start earning income after the pledge reaches the required application. Received after the pledge ends.

Basic steps of redemption :

Click swap in the mining pool to convert the earned ETH into USDT, then click send to redeem the USDT

response rate :

Liquid mineral income daily dividends 0.012-0.06, 1001-10000 USDT daily dividends 0.012, 10,001-50,000 USDT daily dividends 0.024, 50,001-100,000 USDT daily dividends of 0.03,100,001-500,000 per day, 0.036,5001 -100,000 per day. 0.06 daily dividend for 1,000,001 USDT and above. Note that the dividend token is ETH.

coinw