EquitySwap: A DEX that enables fully decentralized trading

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Abstract

EquitySwap has debuted a new market cap growth model that enables projects to always have good liquidity (the ratio of market cap to liquid pool funds is always within a healthy range) during price increases. It also reduces impermanent loss and trading slippage.

For new projects: liquidity is critical, EquitySwap's design criteria is: without external adding liquidity, when the project's market cap rises to ten trillion dollars, it still has good liquidity[1]. It can effectively help newly launched projects to solve the problem of liquidity and provide unlimited development space for all projects in a decentralized environment.

For mainstream coins, the main demand of users is capital preservation, stable profit and reduce impermanent loss: in combination with capital utilization and rate of return on investment, EquitySwap reduces impermanent loss to about one-tenth of Uniswap, and users who add liquidity can enjoy the dividends of rising prices and higher annualized returns, which is very friendly to users and market makers.

EquitySwap can realize precise incentives while enriching the community culture through NFT. After the community members receive the NFT shared by the community leader, the community leader can enjoy the rebate of trading fees and the community members can get better investment and research services, opening the era of DEX rebate. EquitySwap can gradually replace centralized exchanges and realize full decentralization of trading with the above innovative features and precise incentive mechanisms.

1   Introduction

EquitySwap consists of EquitySwap Air, a 3-in-1 decentralized exchange for newly launched projects, and EquitySwap Pro, a 3-in-1 decentralized exchange for already launched projects.

For newly launched projects, liquidity is crucial. In order to meet the demand for decentralized development of projects with different initial volumes and to enable them to have good liquidity in the process of price rising, EquitySwap Air adopts the three market maker formulas, which are as follows:

- AntSwap: $X^4Y = K$

- ElephantSwap: $X^2Y = K$

- WhaleSwap: $XY = K$ (same as Uniswap)

Projects with different initial volumes listed on the appropriate DEX among the three DEXs mentioned above will have better liquidity even as their market cap rises to the ten-trillion-dollar level and there is no external adding liquidity.

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[1]The funds added to the liquidity pool in the initial period are equal or greater than 10,000 USDT, and the funds added to the liquidity pool are equal to or greater than 10% of the market cap, and the ratio of the market cap and total liquidity pool value is less than 80% at the time when the market cap reaches 10 trillion dollars.

For mainstream coins, the main demand of users is capital preservation, stable profit and reduce impermanent loss, Due to Uniswap's impermanent loss being too high, and in order to enable users to enjoy the dividends of rising prices while earning a favorable annualized return and combining it with capital utilization, EquitySwap Pro adopts three market maker formulas which are as follows:

- $X^8Y = K$

- $X^16Y = K$

- $X^32Y = K$

2 EquitySwap Air's Features (using AntSwap as an Example

- Automatically increase liquidity (it can automatically increase liquidity during the price rising).

- Smaller impermanent loss (the impermanent loss is generally over 45% smaller than Uniswap during the rising process).

- Reduced trading slippage.

- Precise incentives mechanism.

2.1 Uniswap's Imperfections

- It is impossible to provide unlimited development space for projects of all volumes, especially for small and medium-sized projects after rising a certain number of times. Due to the lack of liquidity, it is difficult to maintain healthy development in a decentralized environment, and accordingly, projects' decentralized development will be limited to a certain extent.

- Due to the lack of liquidity, it is difficult to retain good projects, and more funds and popularity go to centralized exchanges.

- Excessive impermanent loss during price rises and users are not willing to add liquidity.

- Lack of precise and effective incentive mechanisms.

2.2 Uniswap's Imperfections

- Greater market depth: The three different AMM formulas provide projects of different initial volumes with sufficient liquidity (which can reach several to hundreds of times as much as Uniswap) during their price rises, which offers them unlimited space for growth.

- Better liquidity: it can automatically increase liquidity during the price rising, with sufficient liquidity, EquitySwap enables projects to flourish independently on decentralized exchanges. Getting rid of the dependence on centralized exchanges.

- Smaller impermanent loss: the impermanent loss is significantly reduced in the process of coin price increase, the willingness of users to add liquidity is enhanced, the liquidity of the project is greatly strengthened, and it is easier for EquitySwap and its corresponding public chain to get higher TVL. Notably, for the new AMM formula, with the same cost of adding liquidity, the user's profits can break the ceiling of Uniswap in a certain range, which is greater than the profits of holding tokens in Uniswap.

- Precise and effective Incentive mechanisms: using the Productive Relationship Protocol Stack to bring 0.05% rate revenue to the community through NFT, while providing a constant flow to the community, enabling users to find a reliable community for mutual benefit.

- Reduced Transaction Slippage: Compared to traditional DEX, adding liquidity with the same amount of USDT and the same coin price, as well as any subsequent development process with the same coin price. EquitySwap enables users to use the same USDT to exchange more tokens and use the same tokens to exchange more USDT.

3 Comparison of EquitySwap and Uniswap

3.1 Liquidity

3.1.1 Traditional DEX brings bottlenecks to some programs

The shortcomings of the project's development on traditional DEX: Some initial projects with small and medium volumes are not appropriate for development on conventional DEX, and when the price has risen to high multiples, not only is the liquidity not enough to support the normal trading of the project, but also the ceiling has been hit when the market cap is not large enough, which makes it difficult to maintain sound development. The above problem can only be solved if enough users add liquidity, but due to the high impermanent loss of adding liquidity on conventional DEX, users mostly will not actively add liquidity as well.

3.1.2 Resolution of EquitySwap

In response to these issues, EquitySwap has refined a new mathematical model, introducing three different AMM formulas (read the technical whitepaper for more details), Making projects always have sufficient liquidity on the rising process (which can be multiple to hundreds of times greater than Uniswap) , and provides them with unlimited space to develop. The following is an example based on EquitySwap's AntSwap:

Its constant product formula is: $X^4Y = K$ The pricing formula is: $= \frac{4Y}{X}$

Therefore, adding liquidity to Uniswap has a 1:1 ratio of token to USDT, and adding liquidity to EquitySwap has a 4:1 ratio of token to USDT. This enables the projects to get more liquidity in the early stages of launch, and correspondingly healthier, Adding liquidity initially to EquitySwap is worth 2.5 times as much as Uniswap.

Adding liquidity to EquitySwap and Uniswap with the same amount of USDT, and after the price has risen to a certain level, the amount of USDT and tokens in the EquitySwap liquidity pool is $P^{0.3}$ times and $4P^{0.3}$ times as much as Uniswap, respectively, Correspondingly, the EquitySwap liquidity pool is worth $2.5P^{0.3}$ times as much as Uniswap. This level of increased liquidity is extremely difficult to achieve even with the additional adding liquidity to Uniswap.

The X-axis of the graph below is the multiple of the token price increase, and the Y-axis is the ratio of the amount of USDT in EquitySwap to the amount of USDT in Uniswap.
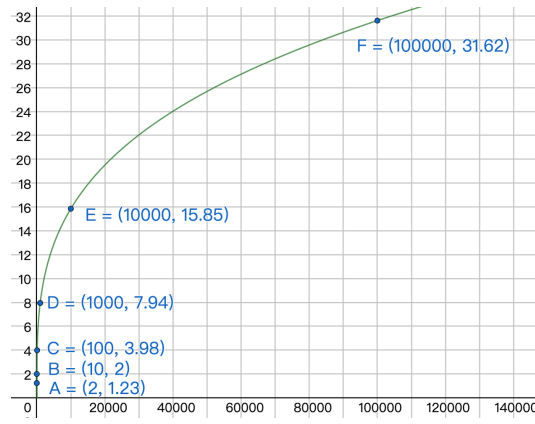
Figure 1: Multiplier relationship of USDT at the same price.

The X-axis of the graph below is he multiple of price increases, and the Y-axis is the ratio of the value of the EquitySwap liquidity pool to the value of the Uniswap liquidity pool.
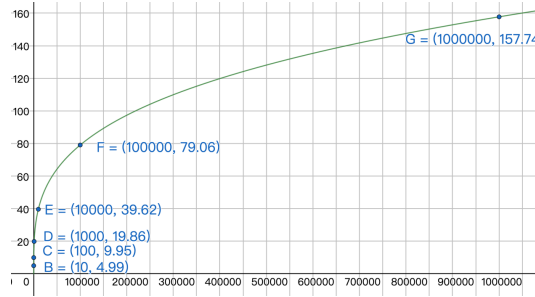

Figure 2: Multiples of the value of the liquidity Pool at the same price.

As an example: the total supply of the token is 10 million. The subsequent development after adding liquidity is shown in the following table: After calculating and deducing, using the same amount of USDT in EquitySwap and Uniswap to add liquidity, respectively, the data comparison during the price rises is as follows:

Liquidity (LP)		Unit Price	Market Cap	Market Cap/ LP	
Uniswap	EquitySwap			Uniswap	EquitySwap
10,000 U	10,000U	0.01U	100,000U	10	10
100,000 U	398,000U	1U	10 million U	100	25
1 million U	15.8 million U	100U	1 billion U	1,000	63.1
\	16.8 million U	107.948U	1.079 billion U	\	64.1
2 million U	\	400U	4 billion U	2000	\

Figure 3: Adding liquidity with 10,000 USDT.

Liquidity (LP)		Unit Price	Market Cap	Market Cap/LP	
Uniswap	EquitySwap			Uniswap	EquitySwap
1 million U	1 million U	1U	1000万U	10	10
10 million U	39.8 million U	100U	1 billion U	100	25
100 million U	1.58 billion U	100,000U	100 billion U	1,000	63.1
\	1.68 billion U	10,794.8U	107.9 billion U	\	64.1
200 million U	\	40,000U	400 billion U	2000	\

Figure 4: Adding Liquidity with 1 Million USDT.

As you can see from the two tables above, projects will not be able to carry large amounts of funds in or out of Uniswap after it has risen by a certain multiple due to a lack of liquidity. Due to the lack of liquidity in Uniswap, many projects are unable to develop further, and outstanding projects only use Uniswap as a springboard. After a certain period, they have to go to a centralized exchange.

EquitySwap enables projects to maintain their market cap/liquidity pool within a reasonable range during development, making them healthier with more liquidity, and enabling large amounts of funds in and out of the market. EquitySwap helps project owners to solve their liquidity problems, so they prefer to develop on EquitySwap. Users also prefer exchanges with better liquidity and greater market depth, resulting in a positive cycle.

The following AMM formulas are selectable for projects of different initial volumes (in USD).
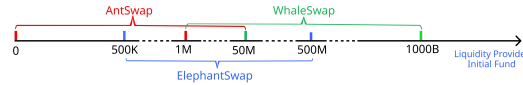
Figure 5: Adding Liquidity with 1 Million USDT.

3.2 Reducing Impermanent loss

EquitySwap's impermanent losses during project price increases are generally more than 45% smaller than Uniswap's, users adding liquidity at the same cost, and the total value of the added LP is several hundreds of times greater than Uniswap after a certain multiple of price increases. It means more people are willing to come to EquitySwap to add liquidity.

Correspondingly EquitySwap and corresponding public chains are more likely to have higher TVL and be more friendly to liquidity providers.

Using 1 token and 1U with a total cost of 2U, the impermanent loss after adding liquidity is shown in the following table (1% of the initial liquidity pool)

LP	Unit Price	Value of Adding Liquidity	Value of Holding Token	Impermanent Loss
100 100U	1U	1 token+1U=2U	2U	0%
50 200U	4U	0.5 token+2U=4U	5U	20%
31.62 316.22U	10U	0.316 token+3.16U=6.32U	11U	About 42.5%
10 1000U	100U	0.1 token+10U=20U	101U	About 80%
1 10000	10000U	200U	10001U	About 98%

Figure 6: Uniswap's impermanent loss.

Costing 2USDT to add liquidity on Uniswap and EquitySwap respectively, the values when rising to the corresponding prices are shown in the following table

LP	Unit Price	Value of Adding Liquidity	Value of Holding Token	Impermanent Loss
100 100U	1U	1 token+1U=2U	2U	0%
50 200U	4U	0.5 token+2U=4U	5U	20%
31.62 316.22U	10U	0.316 token+3.16U=6.32U	11U	About 42.5%
10 1000U	100U	0.1 token+10U=20U	101U	About 80%
1 10000	10000U	200U	10001U	About 98%

Figure 7: Comparison of Uniswap and EquitySwap for adding liquidity.

As shown in the table above, when the unit price rises to 4 and 10 times as much as the original, the benefits of adding liquidity to EquitySwap are not only much greater than Uniswap, but surpass the benefits of holding tokens in Uniswap, which means breaking through the ceiling of Uniswap.

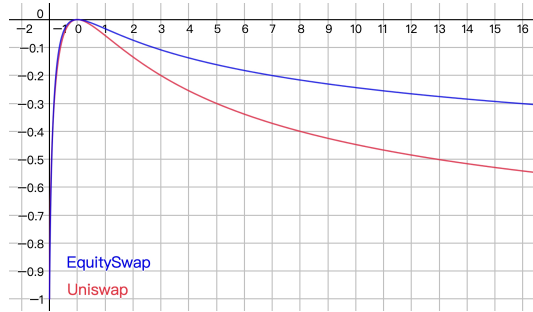The Impermanent loss curves of EquitySwap (AntSwap) and Uniswap are shown below

Figure 8: Impermanent loss curve.

Note: EquitySwap's impermanent loss is always smaller as the project price rises, and EquitySwap's unreimbursed loss will be larger than Uniswap's when the project price falls by about 88.2%. Users generally withdraw liquidity before this point.

3.3 Precise incentive mechanisms

Precise and effective incentives to use the production relationship stack to bring 0.05% rate revenue to the community, while providing a constant flow of traffic to the community, so that users can find a reliable community to achieve mutual benefit and win-win situations. Opening of the DEX rebate era.

3.4 Smaller trading slippage: buy more, sell more

Compared to Uniswap, adding liquidity with the same amount of USDT and the same coin price, as well as any subsequent development process with the same coin price.

EquitySwap Air enables users to use the same USDT to exchange more tokens and use the same tokens to exchange more USDT.

It's more user friendly and there is no doubt that users will prefer to trade at EquitySwap.

Unit price	1U	4U	10U	100U
Uniswap	2U	4U	6.32U	20U
EquitySwap	2U	4*1.515=6.06U	6.32*2=12.64U	20*3.98=79.62U

Figure 9: Comparison of Trading Profit Data between EquitySwap and UniswapComparison of Uniswap and EquitySwap for adding liquidity.

The above summarizes the advantages of the EquitySwap Air 3-in-1 exchange that is appropriate for new launches, while we will also be launching 3-in-1 decentralized exchanges that are appropriate for mainstream coins.

4 EquitySwap Pro

EquitySwap Pro is a 3-in-1 decentralized exchange appropriate for mainstream coins, The three market maker formulas used are:

- $X^8Y = K$

- $X^16Y = K$

- $X^32Y = K$

After the project adds liquidity to Uniswap, when the price increases to 300% (the price is 4 times of the original), the impermanent loss is up to 20%, but EquitySwapPro enables the project to realize the impermanent loss is only around 1.8% when the price increases to 300%.

The total cost of BTC and USDT is 60,000 USDT, and adding liquidity to EquitySwap (AMM formula is $X^{32}Y = K$) and Uniswap, respectively.

Initial LP: 1,000,000 USDT		Initial Unit Price: 1U		
	100,000 USDT	1,000,000 USDT	100,000 PE	1,000,000 PE
Uniswap	90,661	499,248	90,661	499,248
EquitySwap	93,917.2	635,151	93,784	589,415
Initial LP: 1,000,000 USDT		Initial Unit Price: 1U	Unit Prices Rise to 100 USDT	
	100,000 USDT	1,000,000 USDT	100,000 PE	1,000,000 PE
Uniswap	989.8	9,090	4,985,720	9,086,180
EquitySwap	996.2	9,824	8,580,040	34,110,200
LP at the Unit Price of 100U				
Uniswap	10,000,000	EquitySwap	39,810,717	About 4 times more than Uniswap

Figure 10: Adding liquidity with BTC and USDT at a total cost of 60,000U.

The total cost of ETH and USDT is 60,000 USDT, and adding liquidity to EquitySwap (AMM formula is X32Y=K) and Uniswap, respectively.

Unit Price	Impermanent Loss		Value of LP		Multiples of LP's value
	Uniswap	EquitySwap	Uniswap	EquitySwap	
30,000U	0%	0%	60,000U	60,000U	1
120,000U	20%	1.8%	120,000U	230,400U	1.92

Figure 11: Adding liquidity with ETH and USDT at a total cost of 60,000U.

In the figure below, the impermanent loss curve for EquitySwap (AMM formula for $X^{32}Y = K$) is shown in blue, and the impermanent loss curve for Uniswap is shown in red.
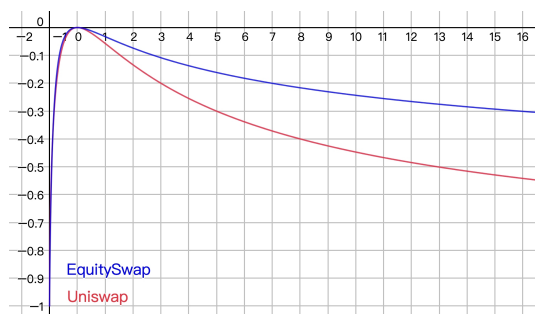
Figure 12: Impermanent loss curve.

4.1 Mainstream coins can continue earning revenue at Equity Swap Pro

Many users have held mainstream coins such as BTC, ETH, and BNB for a long time, and this part of the token has not generated other value. On the one hand, they don't believe in centralized exchanges and are worried about centralized exchange's FUD. On the other hand, the current common DEX's impermanent loss is too high, and after adding liquidity, they may still lose money when the bull market comes.

If users add liquidity to EquitySwap with their holdings of BTC, ETH, BNB and other tokens. Users can enjoy both the dividends of rising prices and 0.1% trading fee rate income during the waiting period for the bull market to arrive. The total daily trading volume of a trading pair with good liquidity on the chain can be up to 1-10 times of the pool. The corresponding annualized income can reach 36.5%-365%.

At present, influenced by regulatory pressure, some mainstream coins are removed by centralized exchanges. If the mainstream coin community organizes community members to EquitySwap to add liquidity, on the one hand, it is equivalent to this part of the tokens being locked, which can stabilize the coin price. On the other hand, since EquitySwap has a greater market depth than traditional swaps, it can meet the normal trading needs of the project.

4.2 For projects that have added liquidity on other DEXs

4.2.1 EquitySwap provides better liquidity

For projects that already have liquidity added at other DEXs, users can go to EquitySwap to add liquidity. Liquidity providers can enjoy the dividends of rising prices and earn a high annualized return while still providing liquidity to their projects.

4.2.2 Community-initiated staking

The community encourages users to add liquidity to EquitySwap while staking LPs to contracts.

In this way, the community can increase liquidity and achieve the purpose of token staking.

For the user, they receive both revenues from price increases (low impermanent losses) and trading fee revenues ranging from 36.5%-100% annualized, as well as staking incentives from the project owner or the community.

5 Summary

For new projects, EquitySwap can occupy a large market or even replace centralized exchanges.

For mainstream projects or projects that have added liquidity to other decentralized exchanges, adding liquidity to EquitySwap enables users to enjoy the dividends of rising prices as well as get an annualized trading rate of 36.5%-100% due to the extremely low impermanent loss. Therefore, for the previous mainstream coin market, EquitySwap can also get a large part of the market share.

Combined with the precise incentive and rebate mechanism, EquitySwap will gradually take over the old and new business of centralized exchanges and achieve complete decentralization of trading.

6 License

EquitySwap follows the BSL protocol. Protocol (valid until 2026-07-30).