The Utopia Protocol

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A multi-currency stablecoin protocol with multi-chain and multi-collateral support
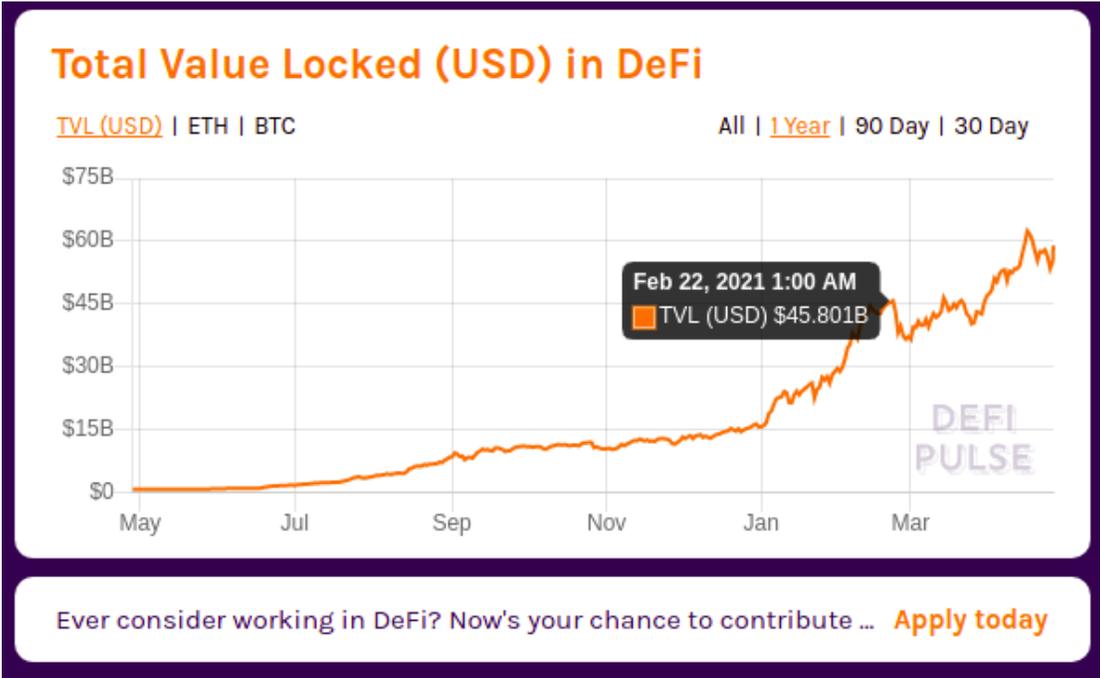
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Abstract

Utopia is an on-chain banking protocol that supports several different blockchains and multiple collateral types. It allows multi-token and multi-LP token holders to generate uStablecoins pegged to a variety of fiat currencies (uUSD, uEUR, and uAUD) without fees and with a lower collateralization ratio compared to other crypto lending protocols.

UC is both the governance token of the protocol and the transaction fee token. Supported collateral assets are selected by the users through the DAO Governance module. Whenever a user deposits collateral assets into a given vault, uStablecoins will be minted; and vice versa, uStablecoins holders are entitled to redeem their uStablecoins for the underlying collateral assets of identical value at any moment.

It is worth mentioning that protocol robustness is ensured using a 4-layer liquidation mechanism.

Background and market challenges

The industry of decentralized finance, or DeFi, experienced explosive growth in 2020 and early 2021. Total value locked in DeFi protocols grew from $867m in late April 2020 to $59 billion in April 2021, an increase of x68.

Total Value Locked (USD) in DeFi

TVL (USD) | ETH | BTC   All | 1 Year | 90 Day | 30 Day

Feb 22, 2021 1:00 AM
TVL (USD) $45.801B

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In turn, the surge of interest in decentralized loans, high-yield staking products, and token swaps caused a boom of demand for stablecoins, which serve as the preferred collateral type and 'fuel' of DeFi. For instance, the market cap of Tether (USDT) reached $45 billion in April 2021, which is larger than the market cap of such banks as Barclays and Deutsche Bank.
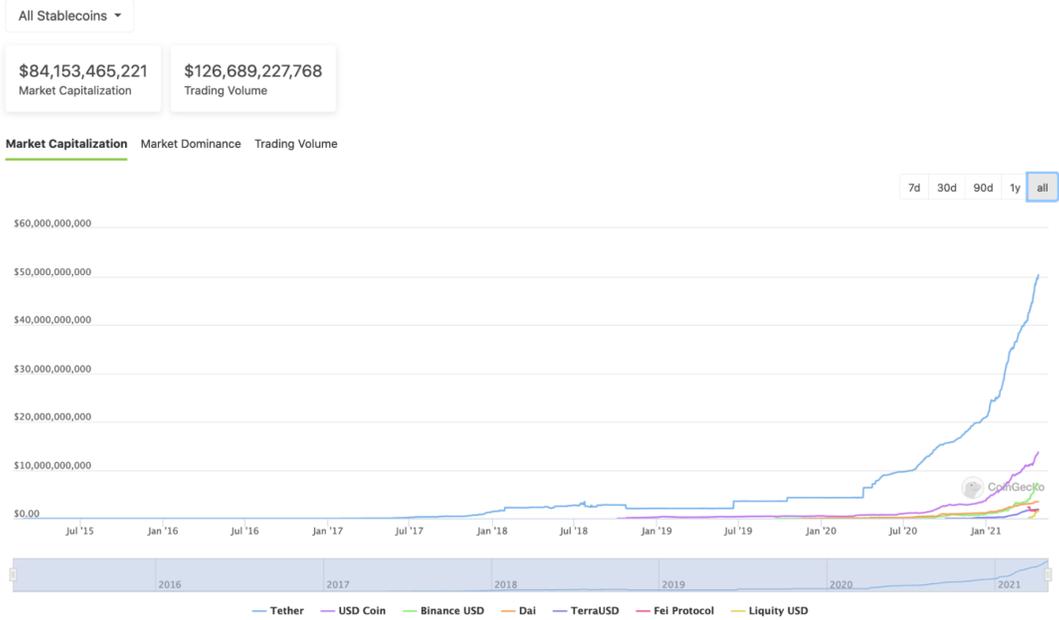
However, the fast rise of DeFi also made it painfully clear that the existing stablecoin and crypto lending protocols are deeply flawed. Here are just a few particularly obvious shortcomings:

1. MakerDAO's high collateralization ratio (150%) and high liquidation fees (13%) mean that the funds are not used efficiently;
2. MakerDAO's liquidation mechanism is semi-centralized and thus far slower and less efficient than on-chain liquidation, which is instant;
3. The Compound lending protocol does not support LP (liquidity provider) tokens as collateral, which reduces the potential pool of funds that could participate in collateralization by more than 50%;
4. In DeFi, USD-pegged stablecoins account for more than 90% of stablecoin transaction volumes, while in the real world, the euro, British pound, Japanese yen, and Australian dollar account for more than 40% of the currency turnover. Holders of these currencies would like to have access to a fully backed stablecoin pegged to their fiat currency.

It is these issues that Utopia aims to solve with its pioneering multi-chain and multi-collateral on-chain banking protocol.

Advantages of Utopia

As a new generation of stablecoin protocol, utopia solves the above problems of the existing stablecoins,our team is taking uStablecoins as the starting point, and committed to creating an onchain banking protocol.UStablecoins can be used in many ways like repaying debts, paying for goods, and cross-border transactions.it's cost-effective and easy. The currency flows through the blockchain within seconds and minimal fee;

1. Possibility to use various tokens, coins, and LP tokens as collateral in different combinations;
2. Support for multiple stablecoins pegged to different fiat currencies: uUSD, uEUR, uAUD, etc.
3. Easy scaling;
4. Relatively low collateralization ratio (110%): a user can obtain a maximum of $100 for each $100 supplied in stablecoins;
5. Stability fees are automatically adjusted on-chain: users will pay a zero or near-zero stability fee when the collateralization ratio is high and a higher fee when the collateralization ratio is low. This will encourage users to repay uStablecoins;
6. A fully decentralized on-chain liquidation mechanism;
7. A deflationary governance token (UC) that allows users to participate in community governance and on-chain voting, accelerate incentives, and earn a percentage of the liquidation fees generated by the protocol;
8. Support for multiple blockchains, including Ethereum, Polkadot, Huobi Eco, Binance Smart Chain, and others;
9. Instant liquidation (no auction);
10. Reinvestment mechanism to maximize returns.

A comparison of stablecoin-enabled protocols

PROJECT/INDEX	MAKERDAO	TETHER	UTOPIA
Collateral asset	*Multi-token/multi-coin*	*USD*	***Multi-token/multi-coin/multi-lp token***
Borrowed asset	*DAI*	*USDT*	***Multi-stablecoins,uUSD,uAUD,etc***
Interest/stability fee	*Variable,vote adjustment*	*0*	***Variable,from negative,algorithm adjustment***
Collateralization ratio	*130%/150%*	*-*	***101%/110%***
Liquidation fee	*13%*	*-*	***8%***
Price oracle	*Centralized*	*-*	***Fully decentralized***
Liquidation	*Decentralized by auction*	*-*	***Fully decentralized,instantly***
Liquidation mechanism	*2 layers*	*-*	***4 layers***
Custody	*Decentralized*	*Centralized*	***Fully decentralized***
Reinvest mechanism	*NONE*	*NONE*	***YES***
Token distribution	*Decentralized but one-time emission*	*-*	***Decentralized;Deflation in 5 years***
Incentive for user	*NONE*	*NONE*	***Collateral asset gain,UC token***
Incentive for liquidator	*Liquidation fee*	*-*	***Liquidation fee,UC token***
Incentive for liquidity provider	*NONE*	*-*	***UC token***
DAO token	*MKR*	*-*	***UC***
Cover	*NONE*	*NONE*	***YES***
Multi-chain	*NO*	*YES*	***YES***
1:1 Pegged	*YES*	*YES*	***YES***

Contracts

Utopia Vault

1. Users deposit assets in the protocol and set their status as collateral. Supported asset types include regular cryptocurrencies, like ETH and USDT, and LP tokens - for instance, received from the ETH-USDT liquidity pool on Uniswap).
2. In exchange, the user gets Ustablecoin in an amount not exceeding 90.9% of the collateral (in accordance with the 110% collateralization ratio);
3. When the user repays 100% of the uStablecoins together with the stability fee (which

can be as low as zero), the vault closes.

Utopia Moat Pool

After the user deposits uStablecoins into the Moat Pool, the protocol destroys uStablecoins in the Moat Pool during liquidation and distributes the resulting liquidation assets to the Moat Pool liquidity providers.

Utopia DAO

The governance contracts in Utopia have a number of unique features:

1) Up to x10 incentive acceleration;
2) Time locks. These are divided into short-term and long-term locks. Short-term locks are used to deploy fast protocol upgrades, while long-term locks allow for gradual governance upgrades, ensuring that the protocol quickly adapts to changing market conditions while upgrading the core part of the protocol over a longer period of time.

Governance parameters include:
- Add or remove collateral assets;
- Generate new stablecoin types or remove them from the list;
- Adjust the asset pool weight;
- Modulate stimulus factor;
- Adjust the healthy ratio;
- Adjust the protocol fee distribution ratio;
- Adjusting the stability cost factor;
- Adjust the reinvestment ratio;
- Adjust the percentage of reinvested income;
- Adjust the price oracle sensitivity factor.

Utopia Price Oracle

While Utopia uses third-party oracle services, such as Chainlink, it adds the oracle sensitivity factor as a global variable to control the maximum price change in the system within a specified period. This helps protect user funds in case of the oracle being exploited by hackers.

For example, if the sensitivity factor is set at 5% in 10 minutes, then the price change cannot exceed 5% over a period of 10 minutes, while 30 minutes will be required for the price to change by 15%. This restriction ensures a sufficient time window for global liquidation.

Protocol architecture
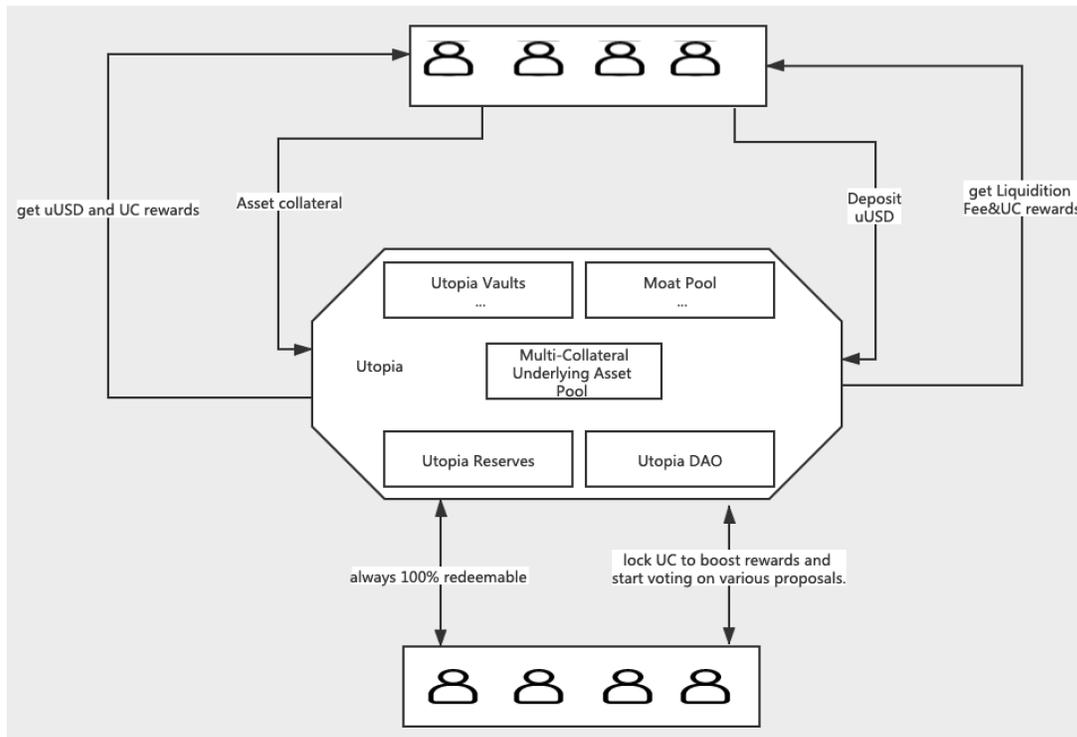
Asset redemption mechanism

The procedure for redeeming funds is as follows:

Case A: the amount to be redeemed is smaller than the value of the liquidation assets in the Moat Pool

The user deposits the uSstablecoins to be redeemed in the Moat Pool and receives liquidation assets from the Moat Pool and from other vaults holding the same collateral assets.

Case B. the amount to be redeemed is smaller than the value of the liquidation assets in the Moat Pool

As the user deposits the uStablecoins to be redeemed in the Moat Pool, the total value of the debt is redeemed using the liquidation assets held in the pool (there is no need to engage other vaults).

Stability fee mechanism

The formula for calculating the stability fee is as follows (kink0>kink1>kink2):

protocol collateralization ratio > kink0:

StableRate = (baseRate + protocol collateralization ratio*multiplier)*0

protocol collateralization ratio>= kink1:

StableRate = baseRate + protocol collateralization ratio*multiplier

protocol collateralization ratio>=kink2

StableRate = baseRate + protocol collateralization ratio*multiplier + (protocol collateralization ratio-kink2)*jumpMultiplier

$$stable\,fee = redeem\ amount \cdot stableRate \cdot d^{\Delta t} \cdot stable\,factor$$

Liquidation mechanism

Utopia protocol features a four-layer instant liquidation mechanism that allows anyone to liquidate vaults whose value falls below the collateralization ratio any time.

First layer: the Moat Pool

The Moat Pool repays the vault's debt and obtains liquidation assets plus 70% of the liquidation fee; the remaining 30% goes into the Reserve.

Second layer: Reserve liquidation

The Reserve is an important element of the Utopia protocol. Its key function is to perform liquidations and respond to extreme events. When first layer liquidation proves insufficient to repay the debt, the Reserve's assets will be used to repurchase corresponding collateral assets and redeem the users.

Third layer: Third-party liquidation

The third-party liquidator is also an important part of the Utopia protocol. The third-party liquidator obtains liquidation assets and liquidation fees by repaying the debt to ensure the stability of the protocol.

Fourth layer: global liquidation

While global liquidation is an extremely unlikely event, it is built into the protocol for the purpose of security. In this situation, generating is suspended, UC is minted by the system and then sold to bidders for uStablecoins.

Price stabilization mechanism

Utopia protocol charges a stability fee to ensure the robustness of the protocol, using a special algorithm to automatically anchor the Ustablecoin target price. In turn, the target price has two important functions:

1. It is used to calculate the collateralization ratio of the collateral asset pool.
2. It determines the value of collateral assets that uStablecoins holders will receive during liquidation.

Ustablecoin holders can redeem their collateral assets at a 1:1 ratio at any time. For example, 1uUSD can be exchanged for ETH assets worth $1. If the price of 1 uUSD falls below $1 (which can happen on rare occasions during periods of market instability), the holder or arbitrageur will be incentivized to redeem the stablecoins, exchanging them for $1 worth of ETH, and get the agio.

Conversely, if the uUSD price grows higher than $1, holders and arbitrageurs will be automatically incentivized to get more uUSD and release them into the market. When the price goes back to $1, uUSD will be repurchased to repay the debt, retrieve the collateral assets, and obtain the agio.

Reinvestment mechanism

Utopia protocol uses a reinvestment mechanism to maximize profitability. The percentage of assets to be reinvested is capped by the strategic reinvestment contract, which allows minimizing gas fees.

The assets that are allocated for reinvestment can be deployed in other yield-generating protocols, such as lending, automated market-making, automated portfolio management, etc.

Any Utopia user can propose, develop, and test reinvesting contracts for integration into Utopia. Such user-generated contracts will be approved and implemented through the DAO governance mechanism. The goal is to minimize risks and maximize returns. 70% of the reinvestment profits will be made claimable by users, while the remaining 30% will be used to purchase UC and burn them.

The formula for the reinvestment asset volume is as follows:

$$reinvest\ asset\ value = (tatal\ underlying\ asset \div total\ uUSD - 1) \cdot tatal\ underlying\ asset \cdot reinvest\ factor$$

COVER mechanism

Utopia will join a third-party cover protocol to maximize the security of the underlying assets, with the costs born by the Reserve.

User roles

Every user in the Utopia ecosystem plays one or more of the following roles, with different incentives for each.

- Liquidity providers: users who supply uStablecoins to the Moat Pool or DEX;
- Borrowers: users who deposit collateral assets in the protocol and get uStablecoins in return;
- Liquidators: users who liquidate the vaults whose value falls below the required

collateralization ratio;

- DAO members: users who lock their UC governance tokens to get the right to vote on governance proposals.

Incentives for the community

Utopia protocol offers several types of rewards below to promote community growth:

a. Governance token (UC) rewards
Borrowers earn UC tokens when they deposit collateral assets, while liquidity providers get UC for adding liquidity to the network. Everyone who holds UC tokens can lock them to become a full DAO user.
Who is entitled: borrowers, liquidity providers, liquidators
b. Reinvestment income
Users can get Reinvestment income by depositing collateral assets.
Who is entitled: borrowers
c. Liquidation fee rewards
Users can get a percentage of the liquidation fees by performing liquidations of defaulted positions, or by simply holding locked UC tokens.
Who is entitled: liquidators, DAO users
d. Deposit fee rewards
The 0.5% depositing fee is 0.5% will be distributed to previous depositors, encouraging sticky liquidity.
Who is entitled: liquidity providers
e. Stability fee
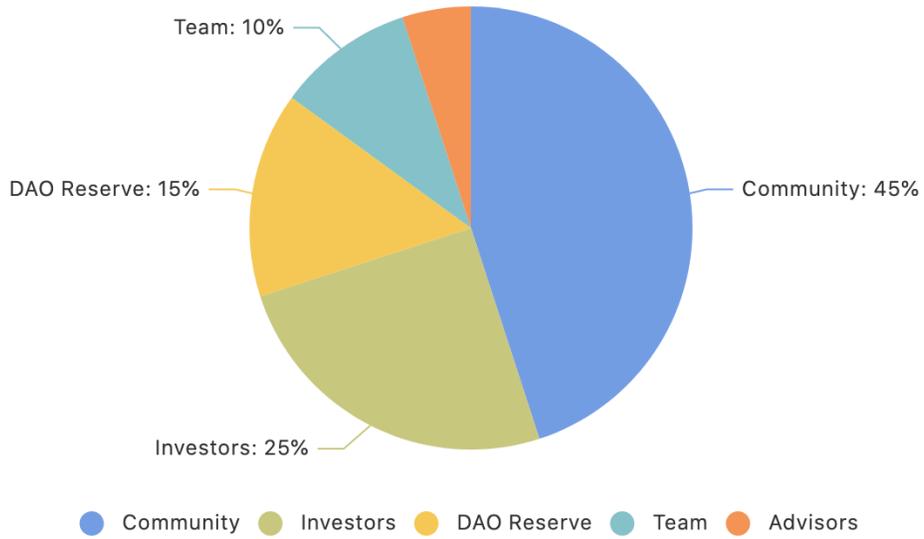Who is entitled: DAO users.

UC token supply and emission structure

The total UC supply is capped at 21,000,000UC, with the emission divided into two stages.

Stage 1
8,400,000UC or 40% of the total supply, to be released in a linear fashion over the course of one year.

Stage 1 emission allocation:
- 45%: community, users, liquidity providers, liquidators;
- 25%: seed round investors;
- 10%: team, development, audit, etc.;
- 15%: reserve, cover, global liquidation, etc;
- 5% : advisors.

Community: 45%

Team: 10%

DAO Reserve: 15%

Investors: 25%

Community   Investors   DAO Reserve   Team   Advisors

Stage 2

12,600,000UC or 60% of the total supply, to be released in a linear fashion over the course of 4 years.
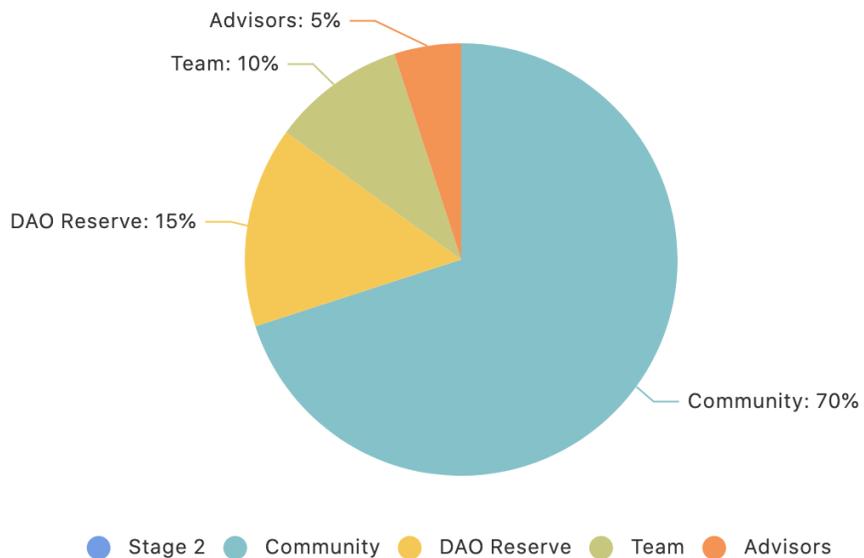
Stage 2 emission allocation:

70%: community, users, liquidity providers, liquidators;

10%: team, development, audit, etc.;

15%: reserve, cover, global liquidation, etc;

5% : advisors.

Advisors: 5%

Team: 10%

DAO Reserve: 15%

Community: 70%

Stage 2   Community   DAO Reserve   Team   Advisors

The UC rewards will be distributed proportionally within each pool, with differing reward allocations in different pools. The daily reward formula is as follows:

daily_reward = block_reward * daily_block_num * pool weight

Roadmap

	White Paper Smart contract development		Testnet launch Bug bounty Contract audit		Ecosystem building uEUR, uAUD, uKWR rollout More work on Utopia Chain	
Q1 2019	AUG 2020	MAR 2021	APR 2021	MAY 2021	JUN 2021	Q1 2022
	Architecture development Utopia chain design		Website launch Smart contract development		Mainnet launch Ecosystem building Integration with stablecoin ecosystems (Curve etc.) Multi-chain development	Utopia Chain testnet release

Risk Notice

Smart contract security

Making Utopia as secure as can be is our #1 priority. We encourage users to research and understand the risks involved prior to engaging with the protocol. Utopia smart contracts have been designed to prioritize safety and have undergone a third-party audit. Prior to any upgrade to the protocol in the future, we will undergo additional security audits; however, we can not guarantee that this measure will eliminate and highlight all potential risks involved. We encourage users to exercise their own discretion and recommend caution when considering suitability for participating in the protocol.

Admin key risk

Utopia is non-custodial and does not have access to user funds. However, we do hold an administrative key with strong privileges that allow us to pause and amend the contracts in case of an emergency. We plan on introducing a time-lock in order to give enough notice such that the community can monitor any changes before they happen. We are big fans of decentralized governance, but also realize the limitations of rushing towards decentralization too fast. Over time, we will be working towards gradually developing Utopia into a fully autonomous, self-iterating system.

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