

TwoX Protocol

Decentralized finance protocol issuing crypto collateralized stablecoin

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Abstract: Herein proposing the concept for crypto collateralized stablecoin enabling decentralized finance economy with a permissionless, trustworthy and fiat-pegging financial instrument. The stablecoin is 100% backed by the collateralized liquidity deposits with the protocol maintaining collateral efficiency by using an adaptable innovation called ‘impermanent settlement.’ This potentialized protocol design identifies a feasible solution alongside the sustainable stablecoin ecosystem into decentralized finance.

This whitepaper does not consist such any kind of financial or investment advice. The sole purpose of this document is to enlighten its readers with core concept ideas in a theoretically presentable manner.

Introduction

TwoX protocol is a decentralized infrastructure that facilitates stablecoin financing by issuing the fiat-pegged cryptocurrency token TUD. The protocol intends to serve as hub for utilizing non-functional liquidity and other raw decentralized crypto assets, thus the name TwoX denotes unlocking another dimension for usecase in parallel to liquidity reserves.

Across the algorithmic stablecoin and asset-pegged token market, there is always risk of the token losing its peg due to inefficient capital management or unrecognized market motives. As such, massive liquidations producing domino effect onto the whole chain of interconnected decentralized finance entities. TwoX protocol sets itself apart as self-sustaining and self-enforcing decentralized infrastructure. The fundamental proposition behind idealizing TwoX protocol is enabling DeFi with supplying a non-volatile utility currency that is fully decentralized and immaterialized to traditional finance resources. Unlike centralized pegged-asset issuer incorporations, the protocol does not reserve

fiat deposits along traditional banking to back its stablecoin.

The outstanding stablecoin market is a whopping ~\$130 billion (as of 28th April, 2023) in the decentralized finance ecosystem. Among, more than approximately 70% is covered by centralized stablecoin issuers. These stablecoins are backed by reserves held in traditional financial institutions, with each unit of reserve backing each unit of stable assets. To solve the issue of centralization in the pegged-asset market, numerous decentralized entities have piloted and experimented in making an efficient cryptocurrency token potentialized to be used as an alternative to fiat currency. With using immutable and self-executing smart contracts, various decentralized stablecoins are released including DAI, LUSD, FRAX and others. These protocols initialize different issuing techniques to facilitate users with dollar-pegged tokens. The overcollateralization is one of the techniques among these decentralized protocols which requires traders to maintain a ratio of minimum over 100% in accordance to secure outstanding stablecoin supply. Whenever the ratio falls below a predetermined account unit, the trader’s collateralized position is liquidated and collateral is sold to live asset markets. As a distinctive decentralized stablecoin manager, TwoX protocol however, accumulates a different approach to this.

TwoX introduces a unique stablecoin offering while drastically minimizing risk on collateral. As the lender deposits funds by ‘*supply()*’ method, the supplier function from the protocol smart contract rewards lender with collateral asset proof along with the protocol’s native token. The *supply* method is the universal function which is triggered on every direct deposit into the protocol. And while triggered, it approves to transact fresh tokens to the lender.

Lenders, in exchange to their supply deposits, are incentivised with liquid derivatives (*tTokens*) for their participation (*supplied collateral*) with native tokens TWOX in equivalent amounts. Lenders would be either using TWOX tokens to mint stablecoin TUD or use the tokens to vote lock and partake in governing the protocol. The native TWOX token is more of a measuring unit to the protocol which also acts in practice to mint stablecoin. While lenders deposit funds, they are essentially collateralizing stablecoin.

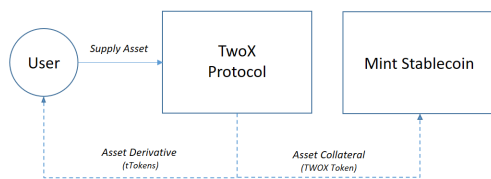


Figure 1.0 - Protocol Design

Advantages for Lenders: As visualized in figure 1.0, lenders are benefited with two tokens; (i) the 1:1 linked collateralized tToken which portray lender's stake in the form of non-custodial and transferable assets. These tTokens are yield bearing derivative tokens that incentivizes holders with its underlying asset utility-yields. (ii) the native TWOX tokens have two separate uses, a) minting stablecoin TUD by burning the TWOX token supply. Once burning the tokens, holder hereafter loses its custody and in exchange receives stablecoin TUD in equivalent amount of fiat (USD) as per the current market rate. b) the TWOX tokens are forbye used to govern the protocol by vote locking the tokens.

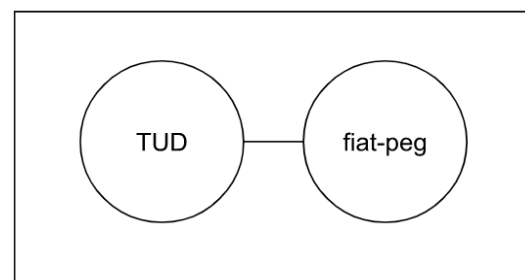
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Stablecoin TUD

The issued stablecoin TUD is an extensively decentralized fiat-pegging cryptocurrency token that is solitary minted by protocol's native asset TWOX. The stablecoin is hence backed diametrically by lenders' deposits.

The stability for TUD-fiat (USD) peg is economically maintained by secondary market and arbitrageurs market making among traders. When the TUD rate rises above 1.00 USD, the market makers prioritizes to be neutral or sell off their TUD holding to profit moderately. In the second case of TUD rate shrinking below 1.00 USD, market makers will start acquiring TUD at discount to benefit repegging. This process of operative market making is performed in secondary markets thus the stablecoin TUD accomplishes transposable stable value. TwoX protocol will also actively participate in this markets alongside traders and market makers.



The TUD supply and its market capitalization never exceed all the combined deposits into the protocol smart contract. Total TUD supply is also subjected to utility and issuance of TWOX tokens. The protocol governance model, following ^[1] *ve(3,3) mechanics*, is indirectly accountable to the stablecoin's supply. The vote locking of TWOX tokens decreases its

stablecoin minting attribute for a period of time which eventually maintains a positive collateral to issuance ratio. As one feasible scenario speculates where at least 5% of the TWOX market circulating supply is vote locked, the 100% collateral is obtainable for 95% of TWOX market valuation to mint TUD.

Total Collateral = 100% of TWOX Market Valuation;

Vote Locked = 5%, TWOX Market = 95% to Total Collateral;

\therefore collateral to TUD issuance ratio is 100:95

[1] ve(3,3) mechanics is a token economics design proposed and formulated by Andre Cronje. The ve stands for vote escrow. This tokenomic model helps DeFi protocols achieve a sustainable ecosystem.

Minting and Redeeming

The minting and redeeming procedure for stablecoin TUD is maintained by token burning mechanism. Token burning process is referred to as an event where underlying tokens are transferred to blockchain's blackhole address, making it unobtainable furthermore. The burned tokens are labeled as not accountable to market valuation and existing token supply or of any use. Minting, on the other hand, is vice-versa to the burning mechanism. The minted tokens are added into existing supply hence increasing token market valuation and liquidity. Both the tokens, TWOX and TUD share a common token standard intersected by value assigning and utility methodology. The minting of new stablecoins requires minter to burn equivalent amount of TWOX tokens which directly impacts on supply-demand ratio hence triggering token value accrual.

Mint: The stablecoin TUD is minted with the process of burning TWOX tokens. This practice involves transacting the native tokens to an inaccessible address, from where its unrecoverable thus deducted from the total stablecoin circulating supply. The newly minted stablecoins are imposed directly to the burner with complete custody. Each one TUD is equivalent to \$1 of TWOX tokens, which indicates the total market value of burning allotment is issued in total TUD.

\$1 TWOX = 1 TUD;

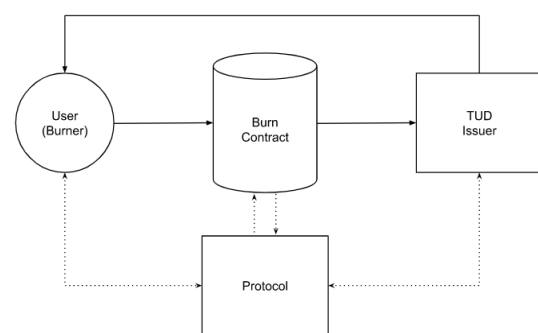
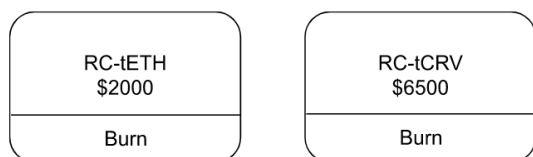


Figure 2.0 - Minting TUD

Into the core protocol infrastructure, the stablecoin issuer contract is constructed as a separate module and it functions independently apart TwoX protocol. However, the issuer contract communicates interconnectivity with protocol to transact stablecoin issuance data and ensures the TUD market avoids outperforming protocol collateral.

Redeem: In the present decentralized finance state, redeeming stablecoin is inefficient process with traders having to offset their overcollateralized positions to obtain back their collateral. TwoX has initiated minting-redeeming non-complexing. As described while minting stablecoin, redeeming stablecoin follows the same; requiring stablecoin holders to burn their TUD along with collateral derivatives or tTokens in equal amounts. The redeem function releases the equivalent collateral amount from protocol by

burning tTokens and stablecoin in a bundling transaction called rc-vaults.



Each redeemable collateral (rc) vault is created by summarizing tToken with stablecoin. These vaults are only managed by traders themselves. As comparing rc-vaults with classic LP-token model, both the tokens require balancing value conveniently. For instance, \$1000 of tETH and the same 1000 TUD creates a rc-vault which rewards burner with \$1000 ETH.

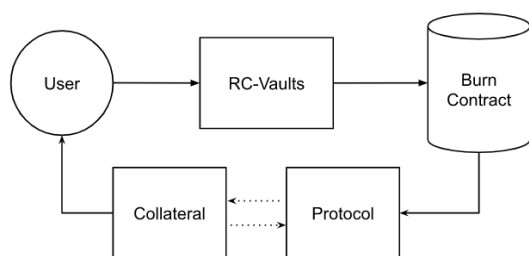


Figure 3.0 - Redeeming TUD

TwoX protocol prioritizes this method to avoid forced liquidations on collateralized positions. The redeeming and minting process is not limited to primary traders only. As stated, these assets (TwoX, TUD and tTokens) are non-custodial hence transferable to any compatible entity address therefore anyone holding it can mint or redeem. Although this method neglects unrealized debt to the collateral and TUD issuance.

Impermanent Settlement

As mentioned earlier in this document, the total TUD stablecoin issuance is not probable to transcend the total collateral valuation. The protocol in addition offers minting 100% collateralized stablecoin which triggers the occurrence of protocol debt since

collateralized asset's market volatility affects the valuation. In an estimated scenario where the collateralized asset's market surges, there exists positive collateral to stablecoin issuance ratio indicating overall good health to the protocol debt. However, the fall in collateralized asset's valuation drives the state of collateral short where TUD market supply lacks backing. TwoX protocol measures both these positive and negative debt in a separate contract in the originally formulated solution dubbed Impermanent Settlement.

The occurred collateral debt, in consequence to collateral valuation momentum, is fetched with a dynamic variable. This dynamic value is either negative or a positive debt. If the collateral is short to the TUD issuance, the protocol debt is positive and if collateral is neutral or greater valued than issuance, the protocol debt is negative. Among both, the positive debt is harmful to protocol health and its overall sustainability. TwoX protocol itself manages and pays off this debt. The protocol employs the settlement contract – under impermanent settlement method – to evaluate and verify collateral asset market valuation in each epoch. Thus, when the collateral to stablecoin issuance ratio changes from 1:1 to 1:X, the settlement contract functionalizes debt recovery by settling accountable *additional collateral* in TwoX tokens. This additional collateral is implicated and not yet deployed to the asset market.

The below described are two attainable collateral debt events which determine increase or decrease to additional collateral in settlement contract;

1. Collateral Short/Positive Debt: When the protocol proclaims positive debt, the settlement contract accounts the capital short in TwoX tokens.

2. Collateral Overflow/Negative Debt: When the collateralized assets' market valuation increases, the settlement contract deducts the

debt from the settlement contract in TWOX token until it reaches 0.

The figure below is visualization on how impermanent settlement methodology secures stablecoin issuance.

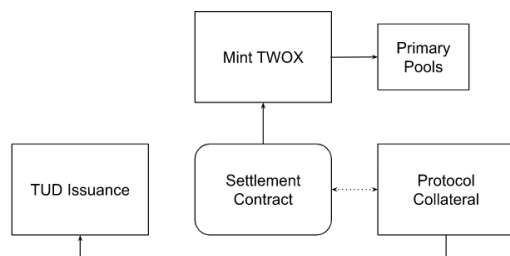


Figure 4.0 - Impermanent Settlement

When the settlement contract finds positive debt it settles equal amounts in TWOX tokens with a dynamic variable. This debt settling process continually verifies positive or negative debt in each epoch to sufficiently recapitulate until a preset positive debt threshold (PDT) is met. PDT can be defined as additional collateral liquidation point that, on triggering, offsets the whole positive debt by minting the same amount in TWOX tokens and selling it on protocol's primary pools. The PDT remains generally between 7% to 10 % to total protocol collateral and is adjustable.

What are the primary pools? Primary pools are protocol implied liquidity pools. These pools are protocol assessed and contain a pair of any collateral asset with the native TWOX token. Moreover, these pools are a liquidity source for inter-protocol operations thus it is managed and maintained by protocol governance.

DAO & Governance

TwoX protocol is governed by TwoX DAO with using vote escrowed TWOX token which is used for both governance and value accrual. Instead of voting directly using native tokens,

TwoX DAO requires participants to use time locked veTWOX tokens for creating proposals and vote on them. veTWOX holders additionally benefit from being incentivised with stablecoin minting and redeeming fees collected by the protocol.

The vote escrowing TWOX offers holders to lock their tokens for minimum of 3 months to maximum 4 years. Participants locking their tokens for 4 years unlocks utmost advantaged voting weight.

Conclusion: This above all explanation is core infrastructure for TwoX protocol. There might be additional products, managerial contracts etc., introduced to sustain the protocol ecosystem and attract market makers to TUD and provide incentives to participants.

Throughout this document, the term 'TwoX' is used, it represents the TwoX protocol infrastructure. And 'TWOX' (with all capital letters) stands for TwoX protocol's native token.

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