

Cruise Finance: Tokenized Asset Hedging

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Abstract

We present the Cruise protocol which enables tokenized asset hedging to provide price protection on volatile assets while unlocking their liquidity for further use. Price pegged wrapped tokens called crTOKENs (ex - crETH for ETH) are minted for hedged assets that have a dynamic price floor of 85% of the market price. The price floor is derived in real time and dynamically adjusts with fluctuating markets. The protocol uses stablecoins to hedge assets and maintains a reserve of USDC to conserve the price floor at the time of withdrawal. The idle capital of the hedged assets is also routed to generate interest on the staked balance which is distributed pro-rata to crTOKEN holders. The protocol thus enables the creation of a new asset class wrapped on top of staked tokens that is price protected, generates interest earnings and is also usable across the broader ecosystem.

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1 Introduction

Most observers of cryptocurrency markets will agree that crypto volatility is in a different league altogether. Compared to stock market indices like S&P 500, the skyrocketing peaks and depressive troughs become pretty clear as they occur at a quicker and more extreme pace in crypto prices compared to prices of assets in mainstream markets. Leverage is one of the main reasons why retail investors end up having a drastic influence on the market. Leveraged crypto trading has essentially created a market in which neither investors nor traders know absolutely for sure what the “fundamental” base values of cryptocurrencies are. This is also what allows for the peaks and troughs during market movements compared to traditional assets. Cryptocurrencies embody innovative technology, high security architecture, prosperity in functionalities, and investment opportunity as an asset which makes them attractive for computer scientists, venture capitalists as well as investors. However, the decentralisation and unregulated markets add an additional layer of uncertainty to its pricing and projection of appreciation. Examples are the closures of exchanges in China based on changing legal situations which cause worldwide price reactions of large magnitude. Especially in the last few years, large shocks and a bubble-like price movement are observable. Long-term confidence in cryptocurrencies remains high, however, with a recent survey of FinTech experts revealing more than half believe bitcoin is capable of becoming the global reserve currency by 2050.

The rise of decentralised finance (DeFi) has removed the control banks and institutions have on money, financial products, and financial services. Anyone with an internet connection can lend, trade, borrow and generate passive earnings using software that records and verifies financial transactions in distributed ledgers. However, the market is fragmented in terms of offerings that provide additional functionality on assets while enabling productivity such as adding a layer of hedged security to prevent drops in value while they are staked for interest generation. While generating interest, the staked tokens still remain vulnerable to market volatility and are therefore subject to undesirable price fluctuations based on market movements. In most cases, this results in impermanent losses where the staked tokens lose value compared to simply holding the tokens.

2 Cruise Protocol

Cruise is the first decentralised protocol that enables tokenized asset hedging to unlock liquidity for price-protected assets. The protocol adds a permanent price floor to assets while making them usable and generating interest earnings on them.

2.1 crTOKENs - Interest Bearing Hedged Assets

2.1.1 Minting crTOKENs

crTOKENs are minted and distributed to the protection taker every time an asset is staked in the Cruise contract. For example, a taker staking WETH in the protocol will receive a corresponding amount of crWETH that is minted and pegged in market price to WETH. Thus, every crTOKEN is a tokenized version of the staked asset that is hedged and represents a claim on both the hedged asset as well as the interest generated on it. Every crTOKEN is a liquid wrapper for the staked underlying token and can be transferred, traded, or used across other applications.

2.1.2 Security Deposit

Protection takers have to stake a stipulated amount of security deposit as collateral for availing the hedging functionality on their asset. This security has to be deposited in the form of CRUIZE-ETH/CRUIZE-USDC LP tokens from Sushiswap of at least the same value as the staked asset. The security deposit will be timelocked for a certain duration depending on the risk exposure the protocol undertakes for the taker, but it will be completely reclaimable after the end of the timelock. This timelock is used to generate enough LP fee interest on the staked deposit to repay the amount covered by the protocol for providing price protection along with the incurred hedging fees. In cases where the taker withdraws below the price floor, the amount covered will be the price difference between the floor price and the market price at the time of withdrawal which will be reimbursed along with the hedging fees from the LP fee interest.

Takers can choose any of the below options for the collateralization ratio of their security deposit.

1. **100%** - LP tokens for staking 50% CRUIZE and 50% USDC/ETH of their staked amount. For example, if a taker wants to hedge WBTC worth \$300 from their wallet, they need to stake LP tokens for \$150 worth of CRUIZE and \$150 worth of USDC/ETH of liquidity provided on Sushiswap markets for CRUIZE-USDC/CRUIZE-ETH.
2. **150%** - LP tokens for staking 75% CRUIZE and 75% USDC/ETH of their staked amount. For example, if a taker wants to hedge WBTC worth \$300 from their wallet, they need to stake LP tokens for \$225 worth of CRUIZE and \$225 worth of USDC/ETH of liquidity provided on Sushiswap markets for CRUIZE-USDC/CRUIZE-ETH.
3. **200%** - LP tokens for staking 100% CRUIZE and 100% USDC/ETH of their staked amount. For example, if a taker wants to hedge WBTC worth \$300 from their wallet, they need to stake LP tokens for \$300 worth of CRUIZE and \$300 worth of USDC/ETH of liquidity provided on Sushiswap markets for CRUIZE-USDC/CRUIZE-ETH.

Higher collateralization ratios have lesser timelocks and can be a preferable choice for investors with more upfront capital. Takers can redeem their hedged asset at any time and depending on the risk exposure of the protocol for the taker's provided protection, the timelock is configured to repay the provided cover in trading fees. Therefore, while the protected asset is immediately redeemable, the staked security deposit will become reclaimable only after the end of the timelock and takers get their entire staked amount back. This ensures that investors looking add price protection to their assets can do so upfront by staking some security deposit which can be reclaimable at a later period with no additional costs.

2.1.2 Trailing Protection

The protocol hedges assets by effectuating a dynamic price floor of 85% on the staked assets. 85% is used as the de facto price floor for hedged assets so that crTOKENs can be fungible and interchangeable. Using different price floors at the time of staking would encode different properties to the minted crTOKENs and therefore create different contracts for each token. This would segregate their liquidity as crTOKENs from different contracts would require the creation of different markets across decentralised finance. Having the same price floor means that every crTOKEN is interchangeable and can easily be used to create liquid markets across other applications.

The price floor is dynamic and adjusts to market movements in real-time using a mechanism similar to trailing stop orders. When the market follows an upward trend, the price floor moves with it to

readjust to 85% of the new high, but it sticks when the markets start falling. This ensures that the price floor only readjusts if the price moves favourably. Once it sticks to lock in a new peak value or reduce a loss, it does not move back in the other direction.

The price protection enforced is permanent and remains active till redemption. Protection is triggered only when markets fall below the price floor which ensures that the staked assets are exposed to rising markets, but are hedged when markets start falling. Due to this, crTOKENs are perpetually hedged against adverse price movements and always make it possible to exit a position favourably.



Fig 1. Price chart without price protection



Fig 2. Price chart with price protection

2.1.3 Passive Earnings

The time value of the staked assets would be higher if they were used to generate interest rather than remain locked in the protocol. The protocol solves not just for capital inefficiency but also for passive yield generation. The staked assets are routed to lending pools in protocols such as Compound and Aave till redemption is exercised. This optimises the value generation of crTOKENs as hedged assets also generate passive earnings through trusted lending pools. In effect, crTOKENs grow in value with rising markets, stem losses when markets fall, and generate interest in all market conditions. In addition, crTOKEN holders also earn CRUIZE rewards at a variable rate which are distributed from the smart treasury at every epoch. This is what makes crTOKENs a better alternative to holding or using the underlying hedged asset.

2.1.4 Market Utility

For every token that can be hedged, their corresponding crTOKEN will be fungible and usable like other ERC-20 tokens. Every crTOKEN having the same real-time price floor would ensure that they are interchangeable and have the same token contract. This makes it possible to create markets for these tokens across different DeFi protocols. crTOKEN holders can provide liquidity to these markets to earn from LP fees in addition to the interest generated on them. They can also be traded, transferred across wallet addresses and used as collateral for borrowing or leveraging assets. In specific instances, adding support for a particular application would require the approval of the governance committee of that application and the proposals for such partnerships would be undertaken based on the demand of the community. Eventually, when the protocol moves to decentralised governance through its DAO, this would become a function of the governance committee.

2.1.5 Liquidation Threshold

Price protected assets have a liquidation threshold of 65%, meaning that the crTOKEN underlying assets are liquidated when the market price falls below 65%. Even after assets are liquidated, takers can exercise price protection by withdrawing at the price floor. However, once an asset crosses the liquidation threshold, it loses upside exposure if the market rises above the price floor. Therefore, while a liquidation event limits the upside exposure of the underlying asset, the price protection mechanism is still enforced if the taker redeems his asset before the market rises above the price floor.

2.1.6 Redeeming Assets

The real enforcement of the price protection mechanism happens at the time of withdrawal when the taker burns their crTOKENs and receives either their staked tokens or USDC depending upon the market price of the token at the time of withdrawal. When a taker tries to withdraw at a market price that is below the price floor, they get USDC worth the value of the price floor. If the withdrawal happens at a price above the price floor, the taker simply receives their staked asset. For example, if a taker stakes WBTC at price of \$57,000 and the market starts rising till it reaches \$60,000 before reversing the trend, the price floor gets locked in at 85% of \$60,000, or \$51,000. If the taker happens to withdraw their stake when WBTC trades at \$55,000, they reclaim their original WBTC which now has a price of \$55,000. However, if they initiate a withdrawal at \$50,000, they get 51,000 USDC instead of WBTC. This ensures that the maximum amount of losses taken by the takers on their holdings never exceeds the price floor at the time of withdrawal. A dynamic price floor means that the maximum losses sustained are always reconfigured to adjust to the latest price movements. At the time of withdrawal, the accumulated interest earnings are reclaimed along with the original staked balance. This would effectively mean that a taker's exit position will always be more favourable and profitable than the rest of the market.

In cases where a taker exits their position below the price floor and receives USDC by burning their crTOKENs, their original staked assets are sold in the market at the market price and the remaining amount, i.e. the difference between the floor price and the market price, along with the hedging fees is reimbursed through the fees generated on their staked LP tokens before they can reclaim their deposit.

2.1.7 Reclaiming Deposits

Staked security deposits can be reclaimed only after the end of the timelock. However, a protection taker can reclaim their deposit beforehand by forfeiting the cover provided depending on the risk exposure undertaken by the protocol. It is to be noted that the fees generated on any risk undertaken by the protocol before reclaiming the staked deposit will have to be paid either through LP fees, increasing the duration before which the taker can actually withdraw their deposit, or paid explicitly by the taker before the deposit can be withdrawn.

By reclaiming their deposits beforehand, takers can only withdraw their staked assets along with any accrued yield interest as is without any price protection. In case the taker has already redeemed their price protected asset, they will have to return any unpaid cover amount before reclaiming their security deposit. The fee interest generated on the deposit leading upto the time of withdrawal is taken as service fees for yield generation. However, the full amount of the staked assets as well the security deposit is returned to the taker's wallet after they reclaim their deposit. Any LP fee generated after that are sent to the wallet address that holds the LP token.

2.2 Stablecoin Pool

The protocol maintains a reserve of USDC for providing price protection. Liquidity providers can stake their USDC to receive CRUIZE multipliers as staking rewards. This means that liquidity providers get CRUIZE tokens worth more than their staked USDC value. It is important to note that these CRUIZE multipliers are not minted at the time of staking and are instead issued from the Smart Treasury that triggers CRUIZE buybacks every time CRUIZE tokens are rewarded to liquidity providers. This has a positive effect on the price every time a liquidity provider is rewarded for adding USDC liquidity to the protocol. This incentivisation mechanism ensures that the USDC staked in the protocol becomes protocol owned and can be used to provide protection without any debt obligations to stakers. Instead of unstaking their balance, liquidity providers can easily trade their CRUIZE tokens with USDC in the market. Their CRUIZE tokens can also be staked in the CRUIZE pool to enable compounding earnings on the staked balance.

The protocol uses a portion of the USDC reserve to generate lending yield on the balance. In the beginning, this portion will be 60%, meaning that 60% of the USDC balance in the reserve will be routed to lending pools to generate yield. The rest 40% will be kept for events of withdrawals that happen when markets are below the price floors. This segregation of capital utility and preservation is used so that transaction and gas costs can be minimised. Routing the whole balance to lending pools would increase the transaction overhead every time a withdrawal is triggered. The balance would have to be unstaked from the lending pool and this would increase the transaction and gas costs associated with every redemption.

The generated interest is distributed thus:

- 50% is sent back to the USDC reserve for compounded appreciation
- 30% is combined with CRUIZE to provide liquidity to CRUIZE-USDC open markets
- 20% is sent to the DAO reserve

In order to maintain sufficient USDC balance to cover asset withdrawals, the protocol uses a shortfall mitigation module that is designed to prevent dry reserves leading to incapacibilities in claiming assets. This module ensures that there is always enough USDC available when a taker tries to redeem their asset below the price floor.

2.3 CRUIZE Token

CRUIZE is the native token of the protocol that will be used in both its incentivisation mechanisms as well as its governance once the move to decentralisation begins. The protocol also has a staking pool to stake CRUIZE and earn a portion of the newly minted CRUIZE that is distributed pro-rata to CRUIZE stakers, along with LP stakers and crTOKEN holders at every epoch. CRUIZE stakers will receive sCRUIZE that is redeemable 1:1 for CRUIZE.

The minting schedule of CRUIZE follows epochs of 8 hours such that the emission rate depends on the staked balance of CRUIZE and LP tokens and is configured dynamically to incentivise the desired staking behaviour based on the liquidity of the pool. The sCRUIZE balance of CRUIZE stakers will keep rebasing on a pro rata basis at the end of every epoch. CRUIZE tokens from the pool have further use in the smart treasury for which the right amount of liquidity will be needed to be maintained.

This minted CRUIZE is distributed thus:

- 60% rewarded to CRUIZE stakers, LP stakers and crTOKEN holders
 - 50% to CRUIZE stakers
 - 40% to LP stakers
 - 10% to crTOKEN holders
- 30% combined with USDC for open market liquidity
- 10% sent to the DAO reserve

3 Protocol Modules

3.1 Smart Treasury

The smart treasury is a specially configured, protocol owned Balancer smart pool that serves as an automatic buyback machine, token issuance pool, and liquidity provider. The treasury uses an automated market maker to enable the economic benefits of buybacks and issuance without the drawbacks of burning and without perpetually increasing token supply. This makes it possible to use the treasury as a module to replace a token burning schedule as it runs the risk of decapitalizing the system by over-concentrating ownership at the expense of liquidity and long-term value. The main purpose of the smart treasury is to maintain a protocol owned reserve of CRUIZE and USDC that is encoded with the functionality needed to handle buybacks, token distribution and shortfall mitigation.

The treasury will have an index of 80/20 for CRUIZE/USDC such that there will always be 80% CRUIZE and 20% USDC in the treasury. The pool will be configured to make it protocol owned such that only the protocol can add and remove liquidity from the pool. The smart pool functionality of Balancer makes this pool rebalance to the set index of 80/20 every time there is a transaction on the pool. This happens by automatically transacting with the open market to produce the desired rebalancing effect on the pool. The smart treasury is configured for the following functionality:

3.1.1 CRUIZE Issuance

Every time CRUIZE tokens are rewarded from the smart treasury, the 80/20 weights are shifted due to the changed CRUIZE balance after issuing them. This causes the treasury to buy back CRUIZE from the open market and which causes the price to appreciate due to arbitrage. This ensures that unlike traditional liquidity mining, incentivising USDC liquidity through the smart treasury actually has a positive effect on the price of CRUIZE. If there are no sellers, the pool responds with a higher CRUIZE price. This opens up an arbitrage opportunity against the price difference which is used by arbitrageurs in the Balancer network to stabilise the price difference across the market. Because the pool is network owned, this process effectively becomes a buyback process while having the same positive effect on price. As income from yield generation flows into the network and moves to the smart treasury, buybacks are triggered in real-time and are automatically managed by the smart treasury.

3.2 Shortfall Mitigation Module

The Shortfall Mitigation (SM) module is designed to handle instances when the balance of the USDC reserve falls below a safe limit needed for providing price protection. The SM module uses USDC from the DAO reserve to cover any deficits. However, in the unlikely event that the DAO reserve is depleted too, the SM module sources USDC from the smart treasury instead. There are 2 thresholds that are configured to handle a shortfall event. The first is used to ensure that there is enough USDC present in the SM module to cover crTOKEN redemptions. The second is used to execute timely refills to avoid delays that are caused while replenishing a completely depleted reserve. To prevent the USDC reserve

from continuously using up USDC from the DAO reserve or the smart treasury, leading to rapid depletion, this two-tiered shortfall mitigation functionality creates separate tranches of USDC for storage and final utilisation. Any redundant withdrawals of USDC can be redirected back to the smart treasury which triggers a CRUIZE buyback event and also counters the effects of sell action that is triggered on the CRUIZE in the smart treasury every time USDC is withdrawn from it.

The first threshold is equal to 25% of the aggregate crTOKEN balance which is the total USDC value of all the circulating crTOKENs issued by the protocol. The SM module tracks the total balance of the USDC reserve and the aggregate crTOKEN balance every 2 hours and confirms whether the balance is above the first threshold. In the event that the first threshold is breached, the SM module is filled up with USDC taken from the DAO reserve in a proportion that brings the total balance up to the first threshold. For example, if the balance of the USDC reserve falls to 15% of the aggregate crTOKEN balance, the SM module is filled up with the rest 10% with USDC sourced from the DAO reserve.

The second threshold is used to finally send the USDC accumulated in the SM module to the USDC reserve and is needed so that USDC isn't directly exhausted from the DAO reserve every time the first threshold is breached. This second threshold is equal to 10% of the aggregate crTOKEN balance. When the balance of the USDC reserve falls below this limit, the SM module is filled up with USDC to bring the total balance up to the first threshold, or 25% of the aggregate crTOKEN balance, and the entire amount from the module is sent to the USDC reserve. If the balance of the USDC reserve is restored to reach the first threshold before the second threshold is breached, the USDC from the SM module is sent to the smart treasury which triggers a buyback event to account for the new, imbalanced proportion of USDC. For example, if after 2 hours from the previous scenario where the USDC reserve balance had fallen to 15% of the aggregate crTOKEN balance and the SM module was filled up with the rest 10% from the DAO reserve, the balance falls further to 5% of the aggregate crTOKEN balance, which is below the second threshold, the SM module is filled up so it has the rest 20% stored in it, and this entire amount is redirected to the USDC reserve to keep the balance above the first threshold. If however, the balance of the USDC reserve recovers to over 25% of the aggregate crTOKEN balance after 2 hours, the USDC accumulated in the SM module is sent to the smart treasury instead. Therefore, the first threshold is used to trigger a refill event for timely utilisation which can be reversed if the second one isn't met.

3.3 Liquidity Provision

Every week, newly minted CRUIZE tokens are combined with a portion of the USDC revenue generated on the reserve pool to provide liquidity to the open markets. The liquidity will be provided to the following Sushiswap markets -

- CRUIZE/USDC
- CRUIZE/ETH

The LP tokens received after providing liquidity are staked in the protocol contract and generate trading fees that are used to buyback CRUIZE and become part of the protocol revenue. A higher proportion of protocol provided liquidity would also ensure more stable liquidity and lesser slippage for CRUIZE trading pools.

4 Incentivisation Mechanisms

4.1 USDC Liquidity

USDC stakers get CRUIZE multipliers worth more than their staked balance. The multiplier function will primarily depend on the ratio of the aggregate crTOKEN balance and the USDC reserve balance. This variable rate is used to game theoretically incentivise the desired liquidity provision outcome such that it decreases when the USDC reserve balance is in excess of the aggregate crTOKEN balance and increases when the USDC reserve balance is in deficit.

4.2 CRUIZE Staking

CRUIZE holders can stake their CRUIZE in the protocol to earn CRUIZE rewards passively that auto-compound after every epoch of 8 hours. CRUIZE stakers receive sCRUIZE that can be redeemed 1:1 for CRUIZE at any time. The sCRUIZE balance associated with every wallet rebases after every epoch and cannot directly be transferred between accounts. The balance can be wrapped to create wsCRUIZE tokens that are transferable. These wsCRUIZE tokens do not automatically rebase after every epoch but accumulate the underlying CRUIZE rewards which can be claimed after wsCRUIZE tokens are unwrapped.

4.3 LP Staking

LP tokens can be staked in the protocol to receive sLP tokens that can be burned to reclaim the original LP tokens along with the rewards accumulated on them. The trading fees accumulated on the LP tokens are used to buyback CRUIZE and rewarded pro rata to sLP holders. Holders of sLP tokens thus receive the fees generated from trading activity in the form of CRUIZE in addition to a variable rate of CRUIZE rewards distributed from emissions every 8 hours. Fees generated from the following Sushiswap markets are used to buy back CRUIZE and distributed to sLP token holders -

- CRUIZE/USDC
- CRUIZE/ETH

5 Protocol Architecture

The core contract consists of the following modules:

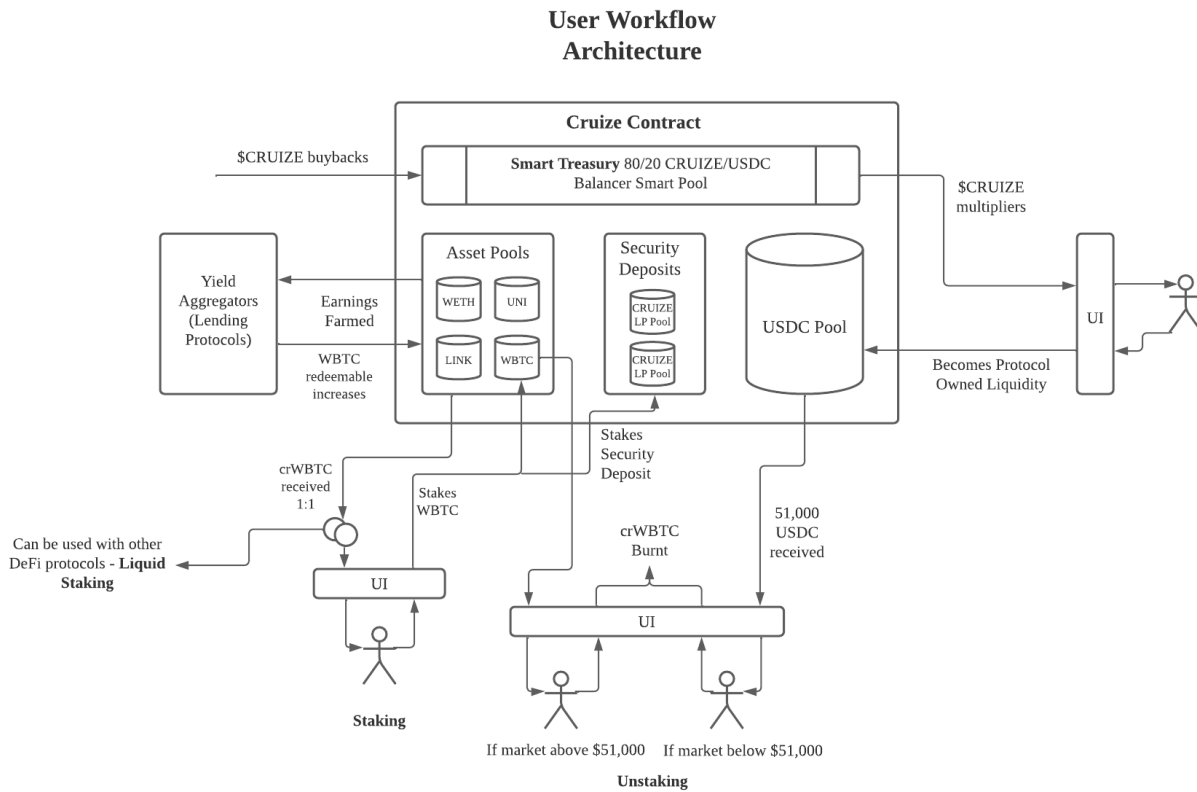
Smart Treasury: Integrated 80/20 CRUIZE/USDC Balancer Smart Pool configured with the incentivisation mechanism for rewarding USDC providers without diluting the token supply. The Treasury interacts with the open markets every time weights are shifted due to token issuance.

USDC Pool: Pooled USDC used to provide price protection when a taker withdraws below the price floor. Provided covers are reimbursed along with the hedging fees by selling the staked asset and reacquiring the price difference and hedging fees through LP fees generated on the security deposit.

Asset Pools: The module that mints crTOKENs for pools of underlying staked assets that are also routed to yield generators to provide passive revenue to crTOKEN holders. This generated yield is

configured to direct 90% of the generated yield to the underlying staked balance and the rest 10% to the DAO reserves

Security Deposits: Pools of CRUIZE LP tokens that are timelocked till the fees generated through trading activity reimburses the provided price protection below the floor along with the incurred hedging fees for protection takers.



6 Pricing Mechanisms

6.1 Hedging Fees

Hedging fees are the service fees charged to protection takers for the risk exposure undertaken by the protocol and are paid for from the fees generated on the security deposit in addition to the cover amount provided for price protection. It is to be noted that the fees are generated only for those days in which the asset position fell below the price floor. The fee function depends on the fee factor, which itself is a function of the price difference between the floor price and the market price and the number of days the asset position was below the price floor.

$$feeFactor (\%) = \left[\frac{(floorPrice - marketPrice)}{((floorPrice - marketPrice) + days)} \times tuner \right] \times 100$$

The tuner is a scaling parameter that scales the fee factor below a set upper limit depending on the duration of the risk exposure. The tuner takes on the following values for different ranges of the number of days below the price floor.

- 0.3 for 1-10 days

- 0.4 for 11-20 days
- 0.5 for 21-30 days
- 0.6 for 31-60 days
- 0.8 for 61-

The final fee that the taker pays will be computed as follows:

$$fee(\$) = (floorPrice - marketPrice) \times \frac{feeFactor(\%)}{100}$$

This fee can be expressed as a percentage of the withdrawal price at the time of redemption:

$$fee(\%) = \frac{fee(\$)}{withdrawalPrice} \times 100$$

6.2 CRUIZE Multipliers

The primary variable for the multiplier function is the reserve ratio, which is the ratio of the aggregate crTOKEN balance and the USDC reserve balance.

$$reserveRatio = \frac{crTOKENbalanceOutstanding}{USDCreserveBalance}$$

To define the upper and lower bounds of this ratio to compute the limits of the actual multiplier function, we need to consider the maximum and the minimum value of the USDC balance in relation to the crTOKEN balance that is needed to keep the reserves fully functioning.

The minimum value of the USDC reserve balance must be 40% of the crTOKEN outstanding balance. When the reserve balance falls below this limit, the deficit becomes unsustainable to provide price protection and further staking and crTOKEN issuance must be halted unless the limit threshold is restored. The reserve ratio will be the highest when the USDC reserve balance is at its lower limit. Therefore, the upper limit of the reserve ratio will be:

$$reserveRatio_{max} = \frac{1}{0.4} = 2.5$$

The maximum value of the USDC reserve balance will be 100% of the crTOKEN outstanding balance, since this is the most amount of the reserve balance needed to provide price protection for all outstanding crTOKEN holders. At this limit, the reserve ratio will theoretically be the lowest, since any excess reserve balance doesn't need to be considered for providing price protection. Therefore, the lower limit of the reserve ratio will be:

$$reserveRatio_{min} = 1$$

This helps us set the range of the reserve ratio which can take any value within this range depending on the aggregate crTOKEN balance and the USDC reserve balance:

$$reserveRatio \in [1, 2.5]$$

Finally, we can scale this reserve ratio linearly into our desired range of the CRUIZE multiplier function which can be defined as:

$$rewardMultiplier \in [1, 2]$$

The final multiplier function to calculate the staking reward can be defined as:

$$rewardMultiplier = \left(\frac{(reserveRatio - reserveRatio_{min})}{(reserveRatio_{max} - reserveRatio_{min})} \times (rewardMultiplier_{max} - rewardMultiplier_{min}) \right) + rewardMultiplier_{min}$$

7 Potential Risks & Mitigation

7.1 Oracle Pricing

The price oracle can be designed to use price feeds from a trusted source such as Chainlink which uses DEXes as one of the price data sources and aggregates data using several layers such as exchange price data, node operators and oracle networks. Cruize primarily uses the Chainlink oracle price feeds which will update the token price feeds at the end of every block. To mitigate oracle risk, such as in cases if the Chainlink oracle does not return an expected result or the latest price feed deviates more than 2% from the last available price, the feed will be tallied with a backup oracle provided via Band Protocol.

7.2 Technical Risks

The technical risks associated with the smart contracts could include design flaws, implementation bugs and cyber attacks. The deployed contracts may be susceptible to security breaches for which robust testing will be needed before any new contract is deployed to the mainnet. After the move to decentralisation and the formation of a governance module is complete, the network will need a strong governance model and efficient control processes to deploy new or amend existing smart contracts. The protocol will also need a robust incident management process to identify and respond to glitches in smart contracts on time.

8 Conclusion

The potential for censorship-resistant tokenized asset hedging is still largely untapped. Primitive alternatives such as trading orders that execute trades at predetermined prices are present only sporadically across platforms and lack a structured approach to value optimisation that combines price protection with earnings and savings. Further improvements to the protocol as well as functional upgrades and new features will vastly increase the utility of the platform. An eventual movement to decentralised governance will also reduce systemic risk and increase the long term viability of the project.

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9 Disclaimer

9.1 No Investment Advice

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