



Taler Yield Optimizer (TYO)

Prospectus

Executive Summary

The **Taler Yield Optimizer (TYO)** vault is a high-efficiency lending optimizer designed to capture maximum risk-adjusted yield across the DeFi ecosystem.

The TYO will be developed in multiple phases. Each phase expands its capabilities and enables the TYO to capture more of the yield spectrum in the market over time.

Phase 1 - USDC Morpho Lending Optimizer

V1 leverages Taler's proprietary risk framework to optimize risk-adjusted yields for USDC across whitelisted Morpho markets. The risk framework is used to:

- Whitelist Morpho markets based on a minimum risk threshold to be reached
- Decide maximum allocation thresholds for the integrated protocols (Aave, Morpho) based on their risk score, taking into account Maturity (Time-series TVL), Audits, Admin controls, and exploit history
- Determine maximum allocation thresholds (as % of AUM) for each Morpho market given the collateral asset and market parameters (LLTV, oracle design, liquidation penalty, utilization)
- Allocate capital based on a comparison of opportunities by risk-adjusted yield considering risk throughout all levels (protocol, market)

Other money markets may be added over time, such as Fluid, Euler, Silo, or Dolomite.

Phase 3 - Cross-Stablecoin, Cross-Market Lending Optimizer

V2 adds the capability for the vault to swap to other whitelisted stablecoins to capture yield divergences while accounting for swap fees and slippage. The risk framework is additionally used to:

- Whitelist stablecoins based on a minimum risk threshold to be reached
- Determine maximum allocation thresholds for each stablecoin given their risk score, which assesses backing, redemption mechanism, and counterparty risk.
- Expand the risk-adjusted yield optimization logic to include multiple stablecoins with their risk scores

Aave has mainly served as the protocol to park USDC reserves that serve instant user withdrawals. However, we see an opportunity for running a more sophisticated strategy on Aave which the cross-stablecoin approach allows us to do.

1. Largest DeFi protocol with \$57B in TVL
2. Less competition from other vaults
3. Composable: Other vaults can allocate their USDC reserves to our Aave lending optimizer to maximize yield for their depositors (pending architecture decision)
4. Headstart for Aave V4 which allows for more granular risk management through a hub-and-spoke model

Phase 3 - Going Cross-Chain

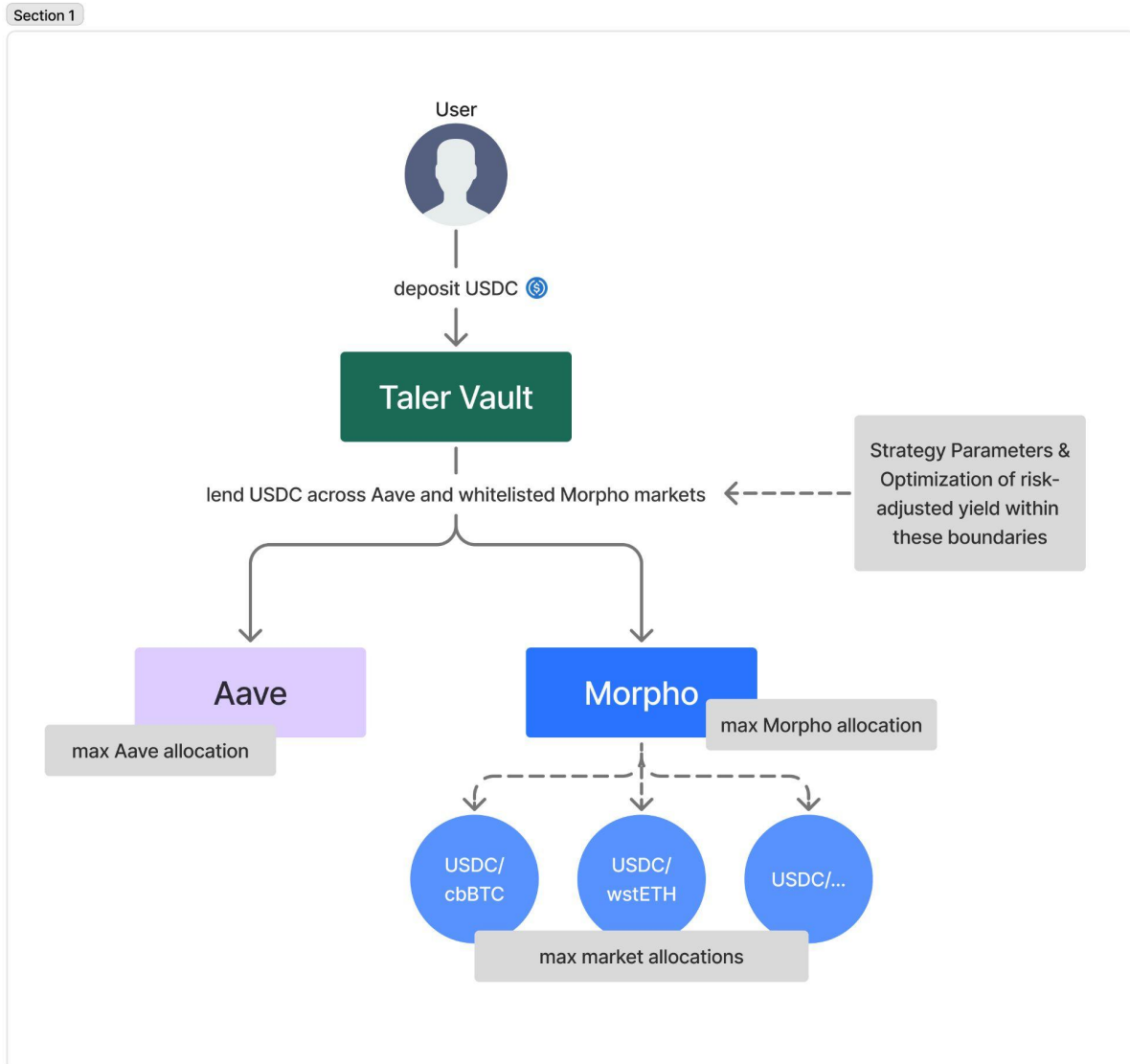
V3 adds bridging capability to capture yield outside of Ethereum Mainnet while accounting for bridging costs. The risk framework's new tasks in Phase 3 are:

- Whitelist chains based on a minimum risk threshold to be reached
- Determine maximum allocation thresholds for each chain given their risk score, evaluating maturity (time-series TVL), uptime, validator concentration, state validation, data availability, and the process in case of sequencer or proposer failure
- Expand the risk-adjusted yield optimization logic to include multiple chains with their risk scores

Taler's risk framework is already equipped to handle all phases of the TYO. Still, improvement to its scoring methodology will be made as the vault progresses and the DeFi landscape evolves.

Phase 1 Strategy

How it works



Users deposit USDC into the vault. The vault lends out the USDC on Aave and across a range of whitelisted Morpho markets based on forecasted (risk-adjusted) yield. Each market has its own allocation cap (% of AUM) determined by its risk score. Additionally, Morpho has a protocol allocation cap across its markets determined by the protocol risk.

Parameters

Protocol allocation caps

Protocol	Allocation Cap (% of AUM)	Risk Assessment
Aave	75%	Aave as a protocol: Gold standard of DeFi lending with the longest track record and highest TVL (\$33B). Only miniscule manipulation of periphery contracts and oracles over the years, protecting lenders from any significant amount of bad debt. Aave as a market: Unified collateral pool and rehypothecation of collateral inhibit granular risk management. However, Aave has, over the years, shown strong curation of asset listings and parameters (e.g. supply caps). This is also indicated by the fact that lenders have not faced bad debt. The risk rating, and therefore, the allocation cap, may change as Aave's collateral composition evolves
Morpho	60%	Second biggest lending protocol with \$6.6B TVL, launched in January 2024. Therefore,

		battle-tested but not to the extent of Aave. Strong audit trail creates confidence. Curators run markets and vaults (admin controls). Curators are reputable institutions. Previous frontend vulnerability, not core protocol. whitehack hacker saved \$2.6m. as bots don't use frontends, this vulnerability is irrelevant to us
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Market allocation caps

Morpho Market	Allocation Cap (% of AUM)	Risk Assessment
cbBTC/USDC	75%	Strong collateral and market parameters make bad debt highly unlikely. Low risk from BTC wrapping via Coinbase
WBTC/USDC	50%	Strong collateral and market parameters make bad debt highly unlikely. Higher tail risk of wrapper than cbBTC
siUSD/USDC	10%	siUSD is a strong implementation (risk tranching, duration matching of assets vs liabilities). Underlying strategy (backing used in low-risk DeFi strategies) still comes with tail risk. infiniFi has expanded its reserves into alternative

		debt with a deployment of 25m USD into Fasanara's mGLOBAL which invests in trade receivables and digital invoices from SMEs with a geographical focus on Europe
wstETH/USDC	75%	Strong collateral and market parameters make bad debt highly unlikely. Tail risk from smart contract and slashing risk (near zero chance)
syrupUSDC/USDC	20%	syrupUSDC lends out its underlying USDC reserves to institutional borrowers, overcollateralized by BTC, XRP, and USTB. The 170% collateralization ratio, together with the 91.5% LLTV of the Morpho market, provide a strong buffer which makes bad debt for lenders highly unlikely. Expected time for withdrawal is 2 days but can take up to 30 days
wsrUSDC/USDC	10%	Reserves are lent out on Aave, Euler, Dolomite, and Fluid, across different stablecoins and chains. Some stablecoins and chains are less tested e.g. USD1, Plasma which introduces tail risk. Given the assessed risk score of wrsUSD and Morpho market parameters, the

		expected loss from depeg for lending USDC against wsrUSD is 0.23% due to tail risk. That is equal to the yield of ~5 weeks, at the time of writing.
sNUSD/USDC	10%	Backed by 93% stablecoins (61% sUSDS. 20% USDe, 11% USDC/USDT) 3.36% OTC hedging strategy. Overcollateralization buffer (3.24%) covers almost the full OTC hedging part
savUSD/USDC	10%	Reserves are used for delta-neutral DeFi strategies, currently USDe and syrupUSDC loops on Aave and Morpho. savUSD has been live since January 2025 and never seen a drawdown

Risk Groups

Markets are categorized into risk groups based on their Taler's risk assessment and the exposure to each group is capped at pre-defined thresholds. This controls for the overall risk the vault is exposed to.

Risk Group	Allocation Cap (% of AUM)	Markets
A	100%	cbBTC, WBTC, wstETH
B	70%	syrupUSDC
C	50%	siUSD, wsrUSD, sNUSD, savUSD

D	20%	
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Additional strategy parameters

- Utilization circuit breaker: The vault will trigger an immediate withdrawal if market utilization exceeds a predetermined threshold (95%), protecting against liquidity lock-ups. The capital is kept idle until a human assesses the situation and reallocates the capital based on the risk framework.
- Dominance Cap: The vault caps its share of total supply in a market at a maximum threshold (5%) to maintain strong liquidity.

Risks

- Illiquidity risk: Withdrawals on money markets may be limited during times of high utilization. Therefore, the strategy monitors utilization rates and share of total supply and prioritizes liquidity by withdrawing assets at early signs of liquidity stress.
- Collateral risk: If collateral used by borrowers cannot be liquidated in time, it may leave bad debt for lenders. If any collateral asset fails, depegs, or becomes unliquidatable, it may lead to bad debt that might need to be socialized across lenders. The vault is trusting Aave's and Morpho's ability to properly liquidate collateral based on its selection of whitelisted assets, parameters, and oracles.
 - Aave-related: First, Aave Umbrella depositors would take a hit.
 - Contagion risk: Due to rehypothecation of collateral, assets are economically connected. A failure in one collateral asset therefore can propagate through the shared pool of assets.
- Protocol risk: Given Aave's and Morpho's long history and high TVL the overall risk can be considered low compared to the overall DeFi ecosystem. The vault manages protocol risk, including smart contract risk and governance risk, via maximum allocation thresholds per protocol based on its risk score.