

In this post we review recent performance of the Morpho Spark DAI Vault and Ethena risk updates, and offer recommendations for further iteration on the vault allocation strategy.

Ethena Risk Review

Ethena recently faced its largest stress test yet, with perp markets seeing a sharp drawdown and periods of significant negative funding rates. The project seems to have handled this without issues, and funding rates have now returned to mostly positive levels (although funding remains much lower than last month). The below funding rate heatmap shows the compression in rates, with black boxes indicating periods where funding was negative.

Ethena has seen isolated periods of negative return on their backing, but this has been more than compensated for by other periods where funding remains positive. There has not been a negative impact on Ethena's insurance fund so far, and the insurance fund has continued to grow with weekly deposits.

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[Coinglass Funding Rate Heatmap](#)

[Ethena Insurance Fund Dashboard](#)

During the initial market crash itself, Ethena saw its first significant trache of USDe redemptions of ~35 million over a few hours. Growth of USDe supply has plateaued over the past few weeks as funding rates have remained depressed, with circulating supply now down roughly ~90 million from the peak. In addition to the direct impact of lower sUSDe yield from funding, this may have been driven by lower price of ENA, which factors into users' expected returns from points farming. Slower growth of USDe may also have a reflexive impact reducing expected points yields, as the current sats program is scheduled to last for 5 months or until reaching 5 billion USDe supply, so slower growth implies the program will spread a fixed allocation of ENA across a longer time period (and therefore a lower expected ENA token per point conversion ratio).

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[Coingecko ENA](#)

Ethena Labs CEO Guy offered some commentary on recent market events in [atwitter thread](#), which may be useful for additional context.

Ethena also implemented signed custodian attestations of custody balances, which substantially improves transparency and assurance for USDe reserves. These are expected to be restated on a monthly basis. While more frequent or real time attestations would offer greater assurance, this is a meaningful improvement for Ethena's fundamental risk profile. Ethena also published an [onchain address](#) showing the Gnosis Safe where they hold the insurance fund, comprising roughly ~40% sDAI with the remainder held in USDT, or in USDe stablecoin LP positions. See more details and the first attestations in Ethena's post [here](#).

Recent Vault Performance

We've observed several trends in the past weeks since the vault increased the total allocated funds from 200 million to 300 million DAI. At a high level:

- Vault returns overall have compressed vs last week and previously
- sUSDe pools are consistently returning less vs USDe pools
- 77% LLTV pools are consistently returning much less vs higher LLTV pools

- 94.5% pools are not earning consistent or significant excess returns vs lower LLTV pools

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[Block Analitica Dashboard](#)

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[USDe Morpho Benchmarks and Reallocation Workbook](#)

Vault Return Compression

The declining in overall vault returns may be due to several factors, including reaching natural limits of demand for leverage against Ethena assets, lower expected returns on Ethena assets (from both funding yield and points), higher perceived risk of Ethena exposure during recent market volatility, and user inertia (where the most eager users have already taken exposure during the first two deployments, with remaining sources of borrow demand showing slower activation).

On a vault wide basis, we believe the existing allocation framework remains appropriate. However, with the recent increase in transparency on custody holdings we recommend to reduce the proportional rate targets somewhat, lowering the base spread vs DSR from 120% to 100%, and slope from 7% per 100 million DAI exposure to 5%. Along with the recent reduction in DSR from 13% to 10%, this yields the new allocation benchmark target profile below.

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Chart

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The current average borrow rate of 21.39% is below target, but still above the 18.4% minimum threshold for 300 million DAI exposure that would support a reduction in exposure.

sUSDe Pools

sUSDe collateral has been showing consistently lower returns versus USDe collateral pools. Considering that USDe earns 20 sats per day while sUSDe only earns 5 sats per day, users are likely to have higher willingness to pay for leveraging USDe collateral, particularly in times when the sUSDe cash yield is low. With Pendle fixed yield tokens indicating over 30% yield on USDe through July while sUSDe funding rates trend around 5% (plus yield of ~7-10%+ from sats program with Pendle implied pricing), this trend may continue unless funding rates rise substantially or user expected points yields decline.

[Pendle USDe PT](#)

[Ethena sUSDe Cash Yield](#)

The implication from this is that it will likely be more valuable to reallocate funds from sUSDe pools to USDe pools, to achieve higher returns while maintaining equal or lower risk.

77% LLTV Pools

The 77% LLTV pools have consistently lagged returns offered by other pools. While they also bear lower risk, the overall risk vs return has not been favorable for the past few weeks. Given users' clear preference for higher leverage pools, and consistent underperformance of 77% LLTV pools, we believe they no longer make sense to receive significant allocations from the Spark DAI vault.

94.5% LLTV Pools

94.5% pools have often delivered returns below comparable 91.5% or 86% LLTVs. The most likely cause here is due to these pools' smaller size, which makes it relatively less efficient for users to manage their positions or rebalance across pools to optimize borrowing costs. Users may be effectively discounting the borrow rate due to this increased operational overhead and risk of rate volatility.

Maker is somewhat constrained in the ability to deploy more funds to these high leverage pools due to risk concerns. Given that the pools have limited excess return on average, and it is not recommended to increase exposure any further (which could help improve pool efficiency and performance), we believe the 94.5% LLTV pools present a suboptimal risk vs reward tradeoff and the Spark DAI vault's allocation to these pools should be significantly reduced.

Updated Vault Allocation Framework

We recommend substantially reducing allocations to 77% and 94.5% LLTV pools given the performance concerns noted above. The Spark DAI vault should leave de-minimis allocation of funds just to keep these pools in a semi-active state in case allocation to the pools becomes strategically important in the future. For example, if Ethena exposure grows it may make sense to re-enable the 77% pools to manage risk, or if Ethena's risk profile improves materially the 94.5% pools could be suitable to receive a large enough allocation to achieve market efficiency.

In addition to the previously described vault allocation benchmark scheme, which is concerned with total funds deployed to the Spark DAI vault via the DDM, we propose an additional benchmarking framework to align asset allocation between the four remaining pools with active support: USDe and sUSDe pools at 86% and 91.5% LLTV.

Intra-vault Pool Benchmarking Framework

Funds should be allocated between pools to optimize risk adjusted borrow rates per pool. This will account for differences in pool LLTV as well as the risk and liquidity profiles of USDe vs sUSDe. The reallocation process will be subject to rate limits, to avoid causing excessive impact on borrower UX or destabilizing interest rate models. Each pool will also be subject to minimum balance thresholds to maintain adequate size for market efficiency.

To calculate the adjusted borrow rate used for allocation, first we take the lower of each pool's optimal borrow rate or current borrow rate. Then, we divide the resulting rate by the pool's LLTV. Finally, we divide the rate for sUSDe pools by one plus the percent of total vault assets allocated to sUSDe raised to the power of two. A formula expression of this is shown below.

$$\text{adjusted borrow rate} = \min(\text{optimal borrow rate}, \text{current borrow rate}) * \text{if}(\text{sUSDe collateral pool}, 1 + (\text{percent of vault allocated to sUSDe})^2, 1) / \text{pool LLTV}$$

Funds should be reallocated towards the active pool with the highest adjusted borrow rate. Reallocations will be drawn from inactive pools and active pools with lower adjusted borrow rates. For inactive pools, the amount withdrawn per reallocation action should be selected to result in a utilization of 93%. For active pools, the amount withdrawn per reallocation should be the lowest of: (1) 10% of total assets supplied to the pool, (2) an amount resulting in pool utilization of 90%, or (3) an amount where there is no longer any other active pool with a higher adjusted return.

Finally, reallocations are subject to minimum pool balances, and if a pool is at or below the relevant minimum balance threshold no further reallocation withdrawals should be processed from that pool. We recommend a minimum target balance of 10 million DAI per pool for active pools, and a minimum target balance of 1 million DAI for inactive pools.

These benchmarks have been incorporated into the following reallocation worksheet, which should help simplify the process of calculating amounts to be reallocated. Specific reallocation actions are expected to be triggered on a roughly weekly basis, with amounts to reallocate reconciled by BA Labs according to the above framework and then implemented by the allocator multisig. Actions may be more or less frequent in practice depending on market conditions and borrower behavior. An example reallocation action using pool data from 3 May is shown below.

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[USDe Morpho Benchmarks and Reallocation Workbook](#)

Over time, reallocating between pools should help achieve a better risk adjusted return, and may potentially allow the vault to achieve the upper bound thresholds needed to support further increases in capital allocation beyond 300 million DAI.

Next Steps

We plan to begin using this framework for reallocation actions beginning next week. Specific reallocation amounts will be reported and authorized in the [Spark MetaMorpho DAI Vault Allocation thread](#) as they have been in the past.