Below we share initial benchmarks for guiding allocation across USDe and sUSDe pools in the Spark DAI vault on Morpho. This incorporates elements from our risk analysis posts, as well as additional mechanisms for rate targeting to ensure the vault achieves an adequate risk adjusted return.

Exposure Limits

From our previous reports, we recommended to limit exposure to Ethena according to the following heuristics:

- 10% of perpetual futures open interest
- 20% of DAI circulating supply
- 30% of total USDe supply
- Maintaining tail risk exposure within acceptable limits

Given that Ethena recently added Bitcoin as a collateral asset for delta neutral strategies, the constraint on total share of open interest has become less prominent. DAI supply is just below 5 billion, indicating a limit of roughly 1 billion DAI exposure to USDe. Similarly, with 200 million DAI current exposure and 2.3 billion USDe supply, the USDe supply constraint also yields a maximum limit of roughly 1 billion DAI exposure. This makes tail risk mitigation the primary constraint for Maker's USDe exposure growth.

The recently posted [exposure increase analysis]() provides data on the levels of bad debt incurred at various USDe haircuts, depending on how much additional capital is deployed to the vault. Generally speaking, bad debt is minimal unless USDe falls at least 10%, and with moderately higher haircuts of 20-30% bad debt remains manageable even as exposure grows significantly. Higher USDe loss rates begin to present a more serious problem with high exposure; for example Maker could incur roughly 200-250 million of bad debt with a 50% USDe haircut at 600 million DAI total exposure. For now, we believe the 600 million DAI maximum deployment remains appropriate to balance revenue growth vs resilience, with actual amounts deployed dependent on market conditions and continued improvements in Ethena fundamental risks.

Vault Return Benchmarks

We can judge the risk/reward of supplying to the Morpho vault by comparing the weighted average borrow rate of the vault's supplied assets to Maker's marginal cost of capital (DSR). The spread between these values should be sufficiently large to justify the tail risk exposure of Ethena exposure.

We consider borrow rates rather than the vault supply yield because only funds that are actively borrowed enter circulation and impact Maker's cost of capital. Additionally, fluctuations in liquidity utilization ratio on Morpho can introduce unnecessary noise into risk/return calculations, and lead to a negative feedback loop where the vault continuously withdraws funds keeping utilization artificially elevated and preventing the pools from achieving rate equilibrium.

The below chart shows our initial recommended rate benchmarking strategy for managing allocations to the Spark DAI vault. We derive a target borrow rate based on a spread vs the DSR, with the spread increasing as a function of exposure. The equation for calculating target borrow rate is implemented twice, with one version using fixed values for base and slope while the other uses proportional values referencing the DSR. This should ensure that the spread between DSR and target rates is sufficiently large even in low DSR environments, and scales up when the DSR is elevated. We expect to make iterative changes to the target rate benchmark formula over time: changing base and slope parameters, adding other input variables, and potentially changing the reference rate from DSR to value.

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Chart

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Source: [USDe Morpho Benchmarks]()

Target borrow rate increases as exposure grows; this ensures that Maker gains increasing levels of risk compensation with higher Ethena exposure, which places a larger burden on Maker's capital reserves. If exposure weighted average borrow rates consistently exceed the "max borrow rate" target for a multi-day period, this justifies increasing the amount of DAI deployed to the vault (within relevant maximum exposure limits). On the other hand, rates falling below the "min borrow rate" target would justify a reduction in exposure. Our current implementation of rate benchmarking targets a base of 120% higher than the DSR at 0 exposure, and roughly 1% borrow rate increase per 50 million DAI allocated.

Pool Selection

Borrowers' willingness to pay for leverage, and by extension individual pools' equilibrium borrow rates, should depend primarily on their expected all-in returns from the leveraged position. Generally, this means higher LLTVs should yield a somewhat higher average borrow rate, and we've seen some degree of this in relative pool performance since launch.

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Source: [Block Analitica Dashboard]

While the above data has some distortion from fluctuations in utilization rate, we can see a clearer trend by calculating the optimal borrow rate. The optimal rate is slowly adjusted when utilization is above or below the 90% target, so it effectively integrates average borrowing demand over time. The only exception where an asset has a higher optimal rate for a lower LLTV pool is the sUSDe 91.5% pool having higher rate than 94.5% pool. This may be driven by market inefficiency from the much smaller portion of funds deployed to the 94.5% LLTV pool.

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Source: [USDe Morpho Benchmarks]

While higher LLTVs offer a higher yield as expected, we continue to believe that moderate LLTVs of 86% and 91.5% offer the best risk adjusted return, and offer better scalability due to having less tail risk exposure. 77% LLTV pools offer even greater safety against losses, but borrowers' willingness to pay seems to drop off significantly at this level so the tradeoff of risk vs reward is a bit less favorable. This is demonstrated in the above data for optimal borrow rate divided by LLTV, with the 91.5% and 86% pools showing strong efficiency (sometimes even exceeding 94.5% LLTV pools) while the 77% pools drop off a bit. We recommend the majority of additional funds should be allocated into the moderate 86% and 91.5% LLTVs.

Based on a review of borrow rates across pools, and assuming borrowers are targeting roughly 100-200% APY equivalent total return regardless of the pool LLTV or collateral asset (USDe vs sUSDe), we find that the market seems to be valuing sats at around 2-4% APY per sat per day (eg. 10 sats per day is equivalent to earning 20-40% APY). This means that sUSDe would need to earn between 30-60% in cash yield to deliver an equivalent total return to USDe in current conditions. This level of funding yield seems unlikely to be sustained over significant periods. For this reason, along with current user preferences for USDe collateral as demonstrated by higher borrowing rates, we recommend to focus new allocations solely into the USDe pools. However, we will reevaluate this relative split regularly, as users' return expectations from the sats campaign may shift quickly depending on ENA token price and other factors.

Next Steps

We expect to make improvements to the overall vault rate benchmarking methodology over time to account for additional relevant variables. Additionally, as we continue to gain more data on relative pool rates and performance, we will implement some intra-vault optimization heuristics to ensure the Spark DAI vault is achieving optimal risk/reward (eg. methods to judge when the vault should reallocate funds between pools). We also plan to define milestone based framework linking increases in exposure beyond certain total capital thresholds to improvements in Ethena transparency, resilience, and fundamental risk factors.