MYSO Token (MYT)

MYSO Finance

May 2024

Introduction

MYSO Finance aims to become the leading marketplace for sophisticated yield enhancement solutions, bringing covered calls and other TradFi structured product primitives on-chain. To accomplish this, MYSO is partnering with institutional users to deliver competitive yields to DeFi and build a thriving ecosystem of a Million Yield Structuring Opportunities (MYSO). We have served numerous treasuries, helping them generate sustainable on-chain yields, establishing MYSO as the only protocol for trustless covered calls on nearly any ERC20 token.

MYSO Protocol

MYSO v2 is an EVM-compatible DeFi protocol that enables users to settle various liquidation-free loan structures where the loan leg and collateral leg can be any ERC20. The v2 protocol comes with two subsystems, referred to as the peer-to-peer system and peer-to-pool system, which both serve different use cases.

- **Peer-to-Peer System**: This smart contract system primarily facilitates covered call transactions. Covered calls are a well-known yield enhancement strategy from TradFi that can also be applied in crypto. In the case of MYSO, users can earn stablecoin upfront yield for lending an altcoin for a fixed duration with an upside cap. This means that if, at the end of the loan duration, the altcoin didn't exceed the upside cap, the lender gets back their tokens; otherwise, they get converted at the strike price. As of May 2024, MYSO has facilitated around $2 million in organic covered call transactions. These transactions are detailed on the MYSO Dapp[1], with additional information available on the MYSO Medium.[2][3] The peer-to-peer system includes a fee switch where the protocol can charge a fee on the collateral leg. For instance, assuming a covered call with a 120% strike,

[1] See: `https://app.myso.finance/stats`.
[2] See: `https://medium.com/mysofinance/first-native-tlos-covered-call-successfully-completed-cbd69f5e6f3d`
[3] See: `https://medium.com/mysofinance/myso-evmos-treasury-debut-covered-call-strategy-512f6f9b2226`

a 4.5% upfront fee, and a 0.5% protocol fee, if a user was doing a covered call for $100,000 in XYZ altcoin and matched with an institutional trading firm, the trading firm would be sending $126,400 in stablecoins to borrow the aforementioned $100,000 of XYZ altcoin. Of the sent stablecoin amount, around $120,000 would serve as collateral for conversion, $5,688 would be the covered call upfront premium for the lender, and $632 would be the protocol fee.[4] Note that, in contrast to other covered call solutions, with MYSO users can do covered calls for almost any altcoin, and trading firms can access the underlying token, which they can then use for hedging, trading, and gamma scalping. Additional use cases that the peer-to-peer system can support include Initial Open Offerings (see Initial Distribution & IOO), peer-to-peer swaps, zero-liquidation loans, and synthetic buybacks. For example, MYSO has been used by several DAOs to offer loans where their own native token is accepted as collateral. This way, projects can use stablecoin reserves to lend liquidity to their token holders and automatically reacquire their tokens if their token price falls below a certain target threshold and borrowers default.

- **Peer-to-Pool System**: This system allows to create a convertible debt marketplace where larger borrowers can get matched with a pool of lenders. Projects and DAOs can use the system to unlock the borrowing power their treasury tokens by using them as collateral to borrow for example stablecoins and structure the loan with a conversion feature, allowing lenders to participate in the upside of the collateral token. To mitigate the collateral price risk associated with volatile altcoins, borrowers can provide high over-collateralization degrees and attractive conversion ratios, both of which are fully customizable and can be adjusted for each loan case individually. For example, assume a DAO with 1,000,000 XYZ treasury tokens currently worth $10,000,000 is looking to borrow $1,000,000 in USDC to strengthen secondary market liquidity for its own token for the next six months. It could structure a convertible loan with a target loan amount of $1,000,000 and an LTV of 10%, giving lenders the right—but not the obligation—to receive 100,000 XYZ tokens instead of receiving the loan amount back in USDC. At the inception of the loan, these tokens would be worth $1,000,000, but if the token price were to increase, they would be worth more than the originally loaned amount. This optionality allows lenders to participate in the upside of the collateral token. The peer-to-pool system has a protocol fee switch, so if a borrower secures $1,000,000 in loan subscriptions with a 1% protocol fee, the protocol earns $10,000 upon successful loan initiation. Additionally, the peer-to-pool system includes an arranger role that can help matchmake between prospective borrowers and lender communities. The arranger can make loan proposals and onboard both borrowers and lenders to the MYSO protocol, charging an arranger fee for this service. To continue the above example,

[4] For a detailed calculation on how the upfront fee and upfront premium relate to one another, please refer to appendix A.

if an arranger successfully matchmakes a loan proposal with $1,000,000 in loan subscriptions and charges a 2% arranger fee, they would generate $20,000 in arranger fees. This creates strong incentive alignment between arrangers and the MYSO community.

Additional product lines may be rolled out to further enhance and expand MYSO's ecosystem of structured product solutions, such as covered call pooling and MYSO v3. Over time, this will allow the MYSO community to benefit from an expanding set of diversified future protocol fee streams.

MYSO Token

The MYSO Token (MYT) will serve as the centerpiece of the MYSO economy, connecting all economic activity in the protocol and across product lines. There will be three relevant forms of MYT:

- **MYT**: MYT is the native fungible token of the MYSO ecosystem, and can be used for transfers and trading. MYT will be supported on multiple EVM chains using LayerZero's OFT model. Note that native MYT is on Ethereum and itself is not an OFT but can be wrapped into an OFT adapter for cross-chain transferability.[5]

- **oMYT**: oMYT is inspired by TapiocaDAO's token economy model[6] and an option token backed by native MYT, giving holders the option to acquire underlying MYT. oMYT will be non-fungible, meaning that each oMYT will come with a different strike price and expiry date. The strike price refers to the price at which an oMYT can unlock the underlying MYT that backs it, and the expiry date refers to the time until a user can exercise their option. The purpose of the oMYT is to serve as an incentive token that can be distributed to users and contributors of the protocol, requiring holders to "provide value to get value." Settlement proceeds from oMYT will be used to build protocol-owned liquidity for MYT secondary markets, enabling the MYSO community to benefit from trading activity in its own token. Additionally, when users exercise oMYT and take profit, they can use MYSO's protocol-owned liquidity to trade MYT, which in turn feeds positively back into the MYSO ecosystem by generating additional trading fees. Since oMYT will be non-fungible, strikes and expiries can be set flexibly, allowing for incentives to be provided on a flexible, case-by-case basis (see oMYT Incentive Structuring). For example, higher strike discounts (or premiums) may be set to incentivize usage of specific product lines deemed most promising by the MYSO community.

- **tlMYT**: Users can lock their MYT to receive time-locked MYT (tlMYT), which serves as MYSO's governance and fee controller token. The minimum locking period is 3 months, resulting in a 25% output weight, while

[5] See `https://docs.layerzero.network/v2/developers/evm/oft/adapter`.
[6] See `https://docs.tapioca.xyz/tapioca/token-economy`.

the maximum locking period is 1 year, resulting in a 100% output weight. tlMYT holders will collectively control the DAO treasury and all potential future protocol fees. These can be managed and distributed according to the veToken model. Quarterly distributions can be made based on snapshots of tlMYT holders, with governance proposals to deploy and fund Merkle-tree distributor contracts accordingly, or directly on-chain through an epoch-based distribution mechanism.

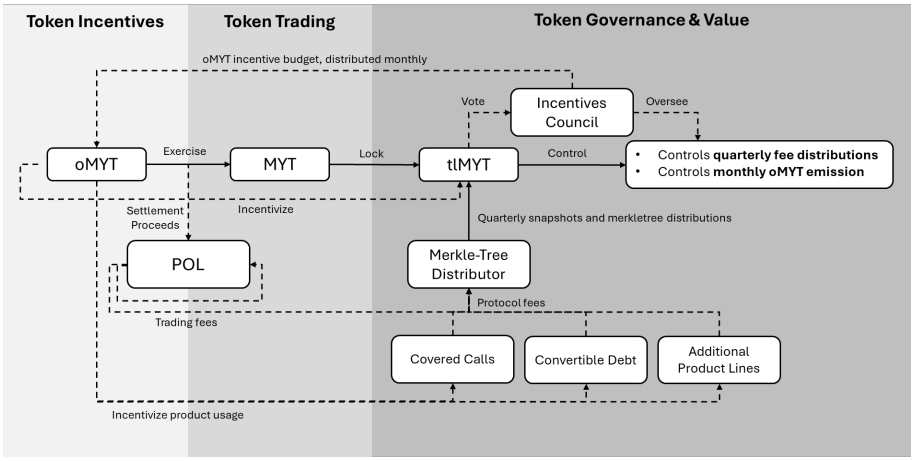

Figure 1: MYT Flow Chart

oMYT Incentive Structuring

Whenever possible, protocol incentives shall be paid out in oMYT to allow the protocol to build up protocol-owned liquidity and strengthen on-chain secondary market liquidity for MYT. Given that oMYT will be non-fungible and parameterizable in terms of strikes and tenors, the question naturally arises of how to structure these. Based on Implied Volatility (IV) assumptions for MYT, one can determine which strike and tenor combinations make sense. An example illustration of this can be seen in figure 2. For example, assume on a given transaction of size X, the protocol would earn $1\% \cdot X$ in protocol fees. Then, in a perfect steady-state scenario, the protocol could pay out an equivalent amount of $1\% \cdot X$ in incentives (in practice, the protocol might need to pay a higher incentive, especially in the beginning, to acquire initial users). If paid out in oMYT, one can see, given different tenors, which strikes would result in an economical value of $1\% \cdot X$ for the reward recipient. One can see that in this example, the oMYT strikes for shorter option tenors are in-the-money or at-the-money, and further out-of-the-money for longer tenors.

Depending on the use case and the underlying economical transaction on the protocol, some transactions with longer-dated capital commitments might need

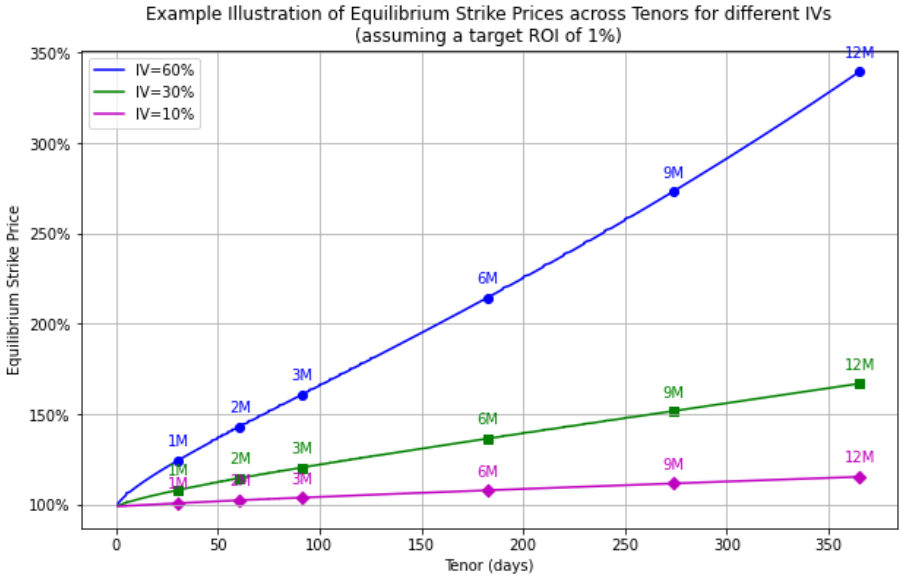

Figure 2: Example of strike and tenor combinations, given a target ROI, for various IV levels.

to be rewarded differently than transactions with a shorter capital commitment. One can also do a similar analysis as in figure 2 but instead of solving for strike and tenor combinations that fulfill a target return one can also solve for a target annualized yield. An example of strike and tenor combinations for this are illustrated in figure 3.

For example, assume one wanted to provide users with an APY of 25% to incentivize protocol usage for a certain product or activity. Further, let's assume one wanted to structure an oMYT incentive that generates given target APY and use an option tenor of 3 months to be congruent with some underlying economic activity (e.g., lending in the protocol for 3 months). Then the question arises: what would be a reasonable strike level to set for the oMYT to provide a users with given target APY? Let's say MYT is trading at \$0.60. Should the strike be \$0.60, higher, or lower? The illustration in figure 3 shows what a fair strike would be, given various assumptions about IV levels for MYT. Note that the IV for ETH tends to be somewhere between 60%-70% across most common strikes and tenors, whereas altcoins typically have higher IV. So, if we assume MYT has an IV close to ETH (e.g., 75%), then a fair strike for a 3-month tenor would be around 130%. Thus, one would set the oMYT strike to \$0.78.

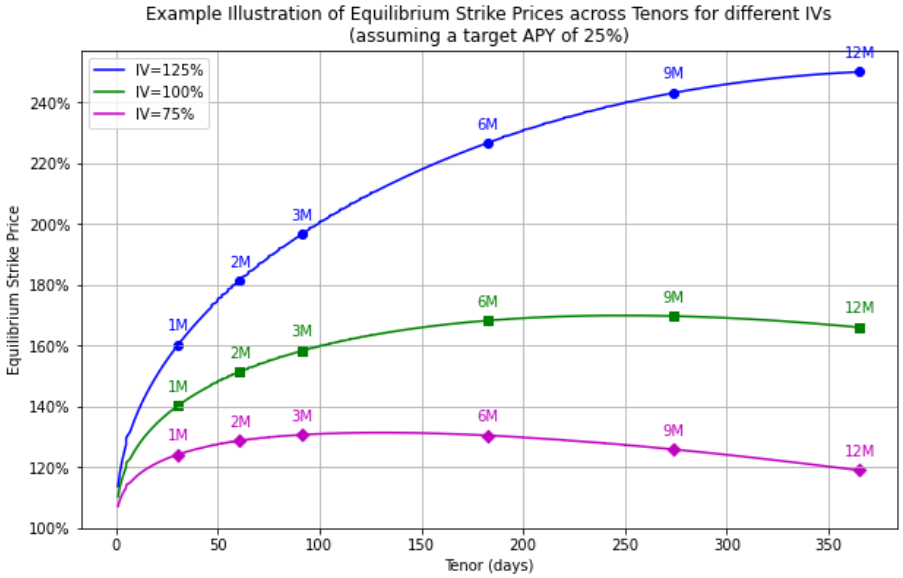

Figure 3: Example of strike and tenor combinations, given a target APY, for various IV levels.

Protocol Fees & oMYT Proceeds

MYSO v2 as well as future product iterations will include a fee switch controlled by the MYSO DAO (i.e. tlMYT holders), where fees are funneled back into the MYSO ecosystem (see MYSO Token). As the MYSO ecosystem grows and more product lines are developed, fee streams can be gradually diversified over time. In parallel to protocol fees, any settlement proceeds from oMYT-related transactions will be funneled back into protocol-owned liquidity, allowing the MYSO community to collectively grow organic long-term on-chain MYT secondary market liquidity, serving as a public good for all MYT participants.

Community Council

A community council shall be established with the mandate to grow the MYSO ecosystem sustainably and with a long-term orientation, representing the interests of the overall MYSO community. It shall be elected by the MYSO DAO and will be responsible for managing incentive distributions across specific product lines, structuring incentives (e.g., oMYT strikes, respective discounts, and tenors), fostering collaborations with third-party communities, and advancing MYSO's vision and brand. The council may also create sub-councils to delegate specific tasks to third-party groups.

Initial Distribution & IOO

MYT will first be made available through a novel token launch mechanism referred to as an Initial Open Offering (IOO) using the MYSO protocol. The purpose of the IOO is to launch MYT in a community-oriented manner by providing early supporters of the protocol with fair access. The way it works is that users can pledge certain tokens as collateral (e.g., stablecoins or LSTs) and borrow MYT. By doing so, users gain upside in MYT with limited downside, akin to a call option.

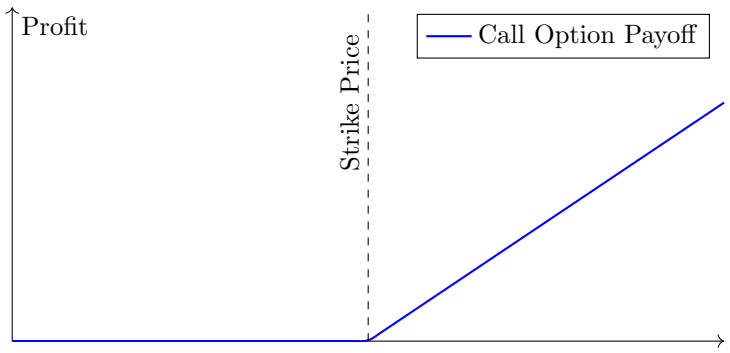

Figure 4: Illustration of call option payoff where value of borrowed token and strike price are denominated in collateral tokens. If the borrowed token value outperforms the collateral value the option is in-the-money, else out-of-the-money.

In the case where LSTs are used as collateral users can keep earning staking yields while they farm MYSO upside, providing maximum capital efficiency. Since loans on MYSO are liquidation-free, users who borrow MYT can keep it if its value outperforms the collateral leg (in which case rational will default on the MYT loan), and otherwise return MYT to reclaim their collateral (meaning they'll repay the MYT loan). This creates an interesting mechanism where MYT only enters into permanent free float if the MYT price develops favorably; otherwise, the protocol reacquires (and potentially burns) MYT, reducing the free float again. Why is MYSO using this distribution mechanism? We believe that the most effective way to convey and educate about a new protocol is through experience. With the IOO, users can utilize their crypto capital to acquire MYT and firsthand experience how borrowing a volatile coin against (stablecoin) collateral can be used to emulate call options. Users have the ability—but not the obligation—to return the farmed tokens and reclaim the crypto capital they deployed. This means users have downside protection in case

the farmed token doesn't perform well. By offering such a novel yield farming opportunity, MYSO aims to stimulate positive spillover effects for its covered call use case as well as third-party IOOs.

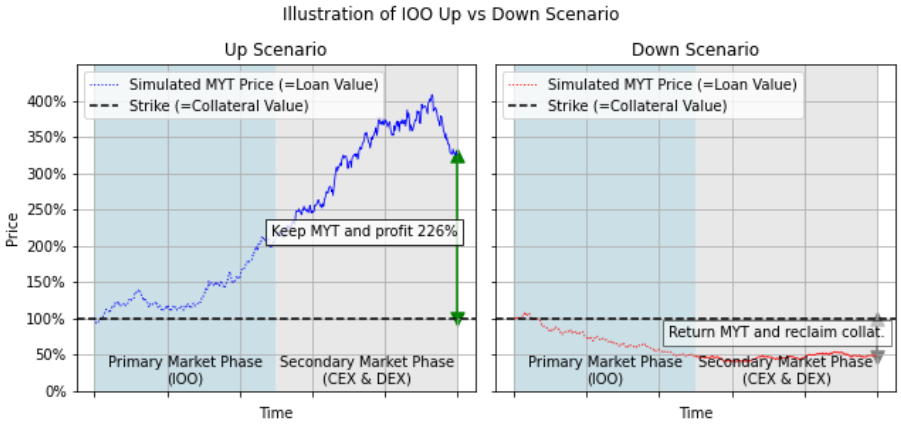

Figure 5: Illustration of default and repayment in the context of the IOO. The left side shows that if the MYT prices outperforms the given collateral price then rational borrowers will keep MYT (i.e., default on their MYT loan). The right side illustrates the alternative scenario, where the MYT price underperforms the collateral then rational borrowers will return MYT (i.e., repay their MYT loan).

For example, third parties can use MYSO to conduct their own IOOs for their tokens. As mentioned earlier, permanent free float only increases if the token performs well; otherwise, the free float is reduced again through loan repayments. This provides third parties with a novel way to distribute tokens in a value-aligned manner: users participate in the project's upside but risk less if the project doesn't develop positively, as they can simply return the borrowed tokens and reclaim their crypto capital. Moreover, setting an interest in the project's token can be used to positively stimulate token demand.

Rational IOO Participation

Rational agents would always want to participate in an Initial Options Offering (IOO) and farm upside as long as the value of the embedded optionality is worth more than the (opportunity) cost for pledging given collateral. Let C denote the value of the optionality acquired per collateral unit and I denote the cost of pledging one unit of collateral for the option duration time. Then a rational user will always borrow if $C > I$. For the sake of simplicity, let's use Black-Scholes to determine C. Further, let X denote the Fully Diluted Valuation (FDV) at which MYT will be traded on secondary markets, $S = \frac{X}{N}$ denote the spot price, and N denote the total supply of MYT. Then, a user borrowing MYT for ΔT

at a strike of K will be acquiring upside worth:

$$C(S, K, \sigma, \Delta T) = S\Phi(d_1) - Ke^{-r\Delta T}\Phi(d_2)$$

where:

$$d_1 = \frac{\ln(S/K) + (r + \sigma^2/2)(\Delta T)}{\sigma\sqrt{\Delta T}}$$
$$d_2 = d_1 - \sigma_i\sqrt{\Delta T}$$

Here, r is the risk-free rate, σ is the Implied Volatility (IV), and Φ is the Gaussian cumulative distribution function. In case the IOO is carried out initially without a secondary market, then S is not known yet. However, one can still calculate the fair relative strike until which it is rational to farm upside for various opportunity cost levels and IV assumptions. The results are shown in Figure 6. For example, in the case of a user pledging USDC, we could expect opportunity costs of around 5% on the USD collateral leg deposit.

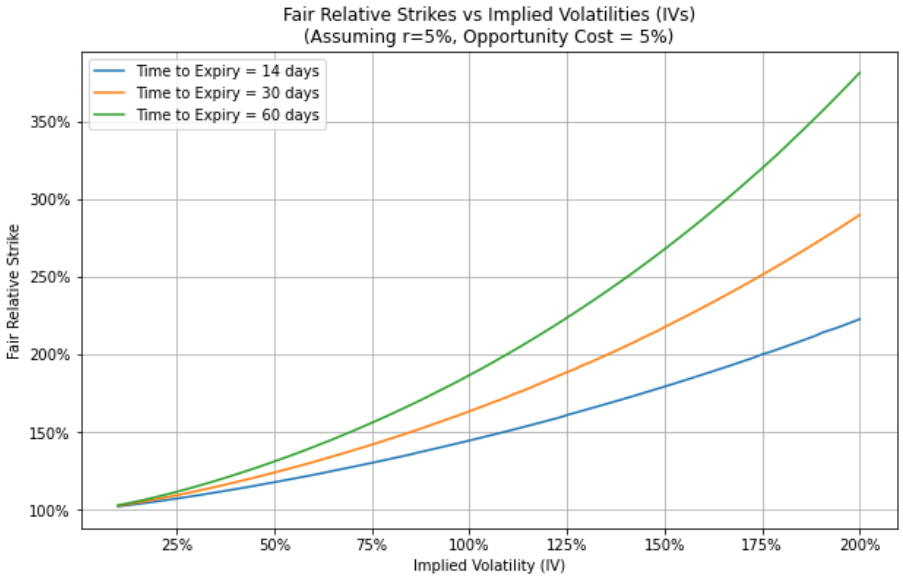

Figure 6: Fair strike boundaries vs. Implied Volatility (IV) levels for different tenors. The higher the assumed IV the higher the fair strike boundary, meaning that any option with a strike at or below this boundary is rational to farm.

One can see that for higher IV, the *fair strike* boundaries are higher, meaning even a further out-of-the-money option is attractive and rational to farm. For example, assuming a 14 days tenor, cost of capital of 5% p.a. and an IV of

100%, a strike of 145% would be fair, for an IV of 70% (which is somewhat around the ETH IV), it would be 127%, and for a very low IV of 20%, still, a strike of 118% would be fair. This means even if the initial underlying price was below the implied strike, it still would be rational to farm the upside, given the time value of the optionality. Note that in the trivial case where opportunity costs are zero, it's always rational to participate in the IOO because $C > 0$, which specifically might be the case when users pledge LSTs as collateral where they continue earning staking yield while they farm MYT upside.

IOO FDV Curve

To distribute MYT and set terms, MYSO will be using an FDV curve that automatically updates based on the cumulative MYT IOO loan volume. The FDV curve will have the following form:

$$P = P_{\text{cap}} - k\left(\frac{b}{e^{ax} + 2b - 1}\right)$$

where x is the cumulative MYT loan volume, P_{cap} is the IOO FDV Cap, k steers the IOO FDV Floor, and a and b control the S-shape of the curve. Figure 7 illustrates the curve where $P = 55$, $k = 66$, $b = 0.8$, and $a = 4.14$.

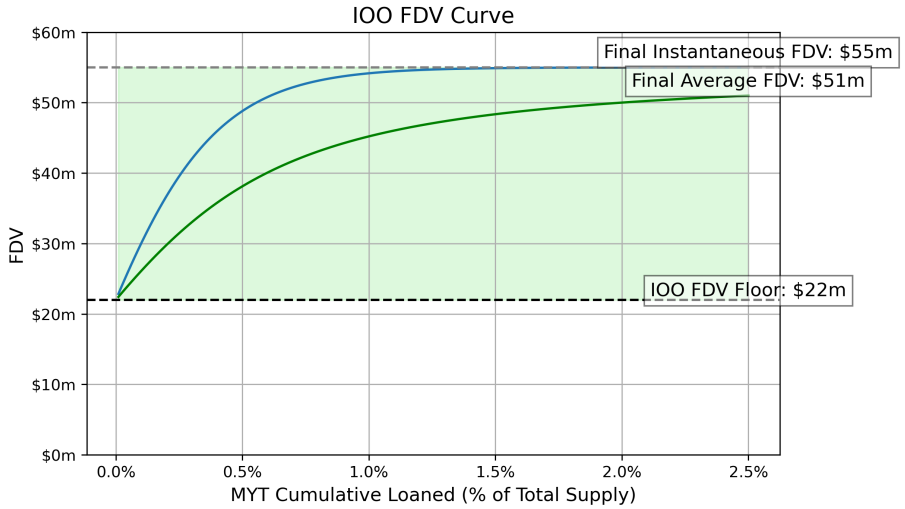

Figure 7: IOO FDV Curve.

To incentivize early supporters of MYSO, the IOO FDV will be floored at the MYSO seed valuation and capped at the IOO FDV Cap. Note that the MYT price on the secondary market might be significantly lower or higher than the IOO (strike) price. The earlier a user borrows, the better terms they get, with tokens distributed on a first-come, first-served basis. More specifically,

earlier users can borrow more MYT per pledged dollar of collateral than later ones. One can think of the IOO price curve as representing the strike prices at which users can farm call options.

Coordination Game

Interestingly, one can view the IOO as a coordination game, in which if all token holders keep the borrowed tokens and don't repay it signals that the token's market price must be higher than the strike, establishing a higher FDV on the secondary market. To illustrate, let's assume there's a project with a $100 FDV and 100 total token supply, which offers to distribute 50 tokens through an IOO at an initial price of $1 per token and with an LTV of 100% (=at-the-money call). Now assume two players, player A and B, each borrow 25 tokens and towards their loans' expiry they need to decide whether to repay or default. If neither of them repays it would mean that the token must be worth more than $1, implying the project's FDV must have increased to $X > \$100$ for this to be the rational choice. In this case both players win, i.e., $(\frac{X}{100} - 1, \frac{X}{100} - 1)$.

Player A\Player B	Default	Repay
Default	$(\frac{X}{100} - 1, \frac{X}{100} - 1)$	$(0, \frac{Y}{75} - 1)$
Repay	$(\frac{Y}{75} - 1, 0)$	$(0, 0)$

Now, let's assume the opposite scenario where both of them repay and return the tokens. In this case both players are neither better nor worse off to the initial state of (0,0).[7] Finally, let's assume one player repays and the other doesn't and the tokens from the repaying player are burned. In this case the non-repaying player benefits from a reverse-token-split effect. If the FDV in this scenario is Y, then the player that doesn't repay has a payoff of $\frac{Y}{75} - 1$. As long as $Y > \$75$ both players are better off defaulting rather than repaying, in which case the overall dominant strategy is to collectively default, which yields $(\frac{X}{100} - 1, \frac{X}{100} - 1)$.

Token Allocation

The total supply of MYSO Tokens (MYT) is capped at a maximum of 100,000,000 and allocated as follows:

- **DAO Treasury (30.00%)**: This allocation is reserved for the protocol DAO treasury to empower the community to collectively fund new growth initiatives and protocol developments.
- **Liquidity & Incentives (30.00%)**: These tokens are set aside to provide liquidity and incentivize users within the MYSO ecosystem.
- **Core Contributors (19.17%)**: Tokens allocated to the core team and contributors who are involved in the development of the MYSO protocol.

[7] Assuming zero interest cost and no protocol fee.

- **Investors (10.93%)**: This allocation is reserved for investors who provided seed capital to support the project's early stages.
- **Ecosystem Growth (9.90%)**: This portion is allocated to support the growth and expansion of the MYSO ecosystem, including airdrops, the IOO, community giveaways, community councils, other community initiatives, strategic partnerships, DAO-to-DAO swaps etc.

Token Unlocks

The total maximum MYT supply will be unlocked over four years in monthly epochs. Figure 8 illustrates the distribution schedule across the various token allocation buckets. While DAO treasury tokens, core contributor, investor, and ecosystem growth allocations will come in the form of native MYT, incentives will primarily be distributed in the form of oMYT whenever possible and practical (initial reward campaigns like the airdrop, the IOO, and similar growth campaigns may be excluded from this).

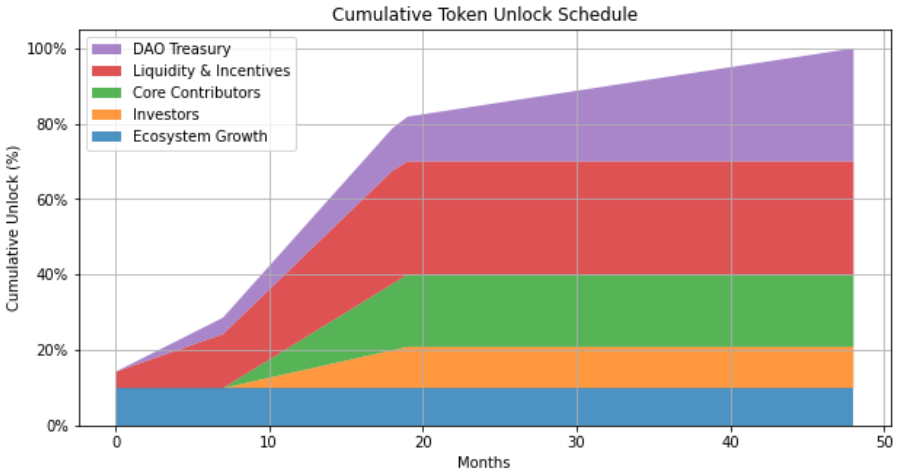

Figure 8: Cumulative token unlock schedule.

Closing Remarks

The MYSO tokenomics framework is designed to evolve alongside the growth and development of the MYSO ecosystem. As new use cases are developed and additional product lines are introduced, the tokenomics model will be continuously refined to meet the changing needs and dynamics of the market. An iterative approach ensures that the protocol remains flexible, resilient, and aligned with the best interests of its users and stakeholders. Future iterations, including

enhancements to existing product lines like the peer-to-peer and peer-to-pool systems, as well as the rollout of new versions such as MYSO v3, will require ongoing adjustments to the tokenomics. Governance by the MYSO DAO, empowered by MYT holders, will play a pivotal role in overseeing these adaptations, ensuring the protocol can dynamically respond to market conditions and user feedback. By doing so, MYSO aims to create a robust and enduring ecosystem that consistently delivers value to its participants.

A Covered Call Protocol Fee Calculations

Let:

x	: gross collateral send amount in \$
f	: protocol fee
u	: upfront fee
k	: relative strike
N	: notional of covered call in \$
p_M	: relative premium from MM's perspective
p_P	: relative premium from prospect's perspective

We need to solve for u and x. We can use the following identities for this:

$$(i) \qquad x \cdot (1-f) \cdot (1-u) = k \cdot N$$
$$(ii) \qquad x \cdot (1-f) \cdot u + x \cdot f = p_M \cdot N$$

Rearranging yields:

$$u = \frac{p_M - k \cdot \frac{f}{1-f}}{k + p_M}$$
$$x = \frac{k \cdot N}{(1-f) \cdot (1-u)}$$

Note that the relative premium from the MM's perspective is related to the prospect's perspective in the following way:

$$p_P \cdot N + x \cdot f = p_M \cdot N$$

Hence, for the prospect's premium we get:

$$p_P = \frac{p_M \cdot N - x \cdot f}{N}$$