MYSO Token (MYT)

MYSO Finance

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Introduction

MYSO's vision is to become the leading marketplace for sophisticated yield enhancement solutions, bringing covered calls and other TradFi structured product primitives on-chain. We aim to create the largest on-chain structured products ecosystem, partnering with institutional users to bring competitive yields to DeFi and build a thriving ecosystem of a Million Yield Structuring Opportunities. 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. As part of our mission, MYSO will be launching the MYSO Token (MYT) and releasing it through an Initial Open Offering (IOO), a novel distribution mechanism aimed at driving protocol adoption and educating users about on-chain structured product primitives. The overarching goal of MYT is to allow users to participate in the growth potential of MYSO and position it as the most flexible EVM-based structured products ecosystem, with MYT standing at the center of the current MYSO v2 and all future protocol versions.

Context

MYSO v2 is an EVM-compatible DeFi protocol that allows users to lend any ERC20 token (loan leg) against any other ERC20 token (collateral leg) at individualized terms and without facing liquidations. In the simple case where the loan leg is a stablecoin and the collateral leg is a volatile coin, lenders underwrite "Zero-Liquidation Loans," meaning lenders earn compensation for taking on collateral downside risk, while borrowers maintain upside in the collateral without facing liquidation risk. Conversely, users can do the reverse too, i.e., use a volatile coin as the loan leg and stablecoins as the collateral leg. By doing so, lenders underwrite vanilla covered calls, where they earn upfront compensation for lending coins and capping their upside, while borrowers acquire long call exposure. This latter use case is particularly interesting for projects and DAOs lending treasury tokens to generate stablecoin revenue, as well as institutional trading firms on the borrow side, allowing them to access the underlying token

for trading and hedging. With over $1.8 million in covered call volume settled, MYSO is currently the only protocol that can facilitate trustless covered calls for nearly any ERC20 token.[1]

MYSO Token

The MYSO Token (MYT) aims to foster cooperation among stakeholders of the MYSO ecosystem to collectively drive protocol growth and adoption. Users who acquire MYT will collectively control the DAO treasury, fee switch and future protocol revenues. The DAO treasury can be used to fund new growth initiatives, protocol developments, and bootstrap liquidity within the MYSO ecosystem, such as creating loan offers exclusively available to MYT holders. Moreover, as part of the MYT launch, MYSO will be pioneering a novel distribution mechanism referred to as an IOO. The purpose of the IOO is to incentivize early adopters, serve as a leading example of the versatility of MYSO v2, and demonstrate how third parties can use MYSO, fostering spillover effects.

IOO – Initial Open Offering

MYT will initially be exclusively distributed through an Initial Open Offering (IOO) using the MYSO protocol. The way it works is that users can pledge certain tokens as collateral (e.g., stables or LSTs) and borrow MYT. By doing so, users gain upside in MYT with limited downside, akin to a call option.

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

[1] See: `https://app.myso.finance/stats`.

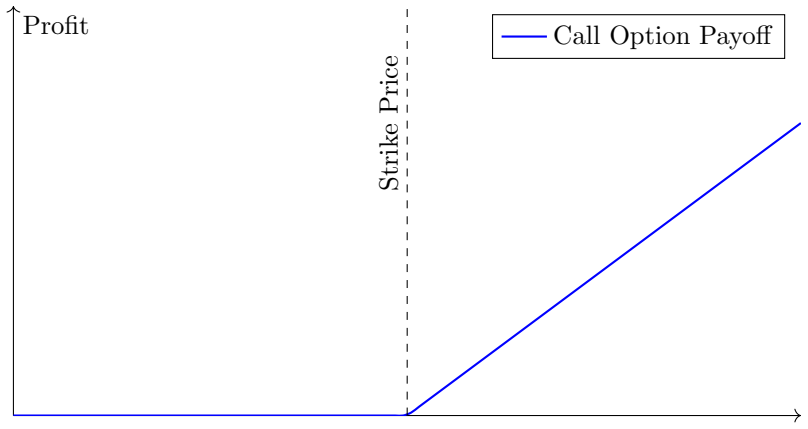

Figure 1: Illustration of call option payoff where value of borrowed token and strike price are denominated in collateral tokens. If the borrowed token value outperforms the collateral value the option is in-the-money, else out-of-the-money.

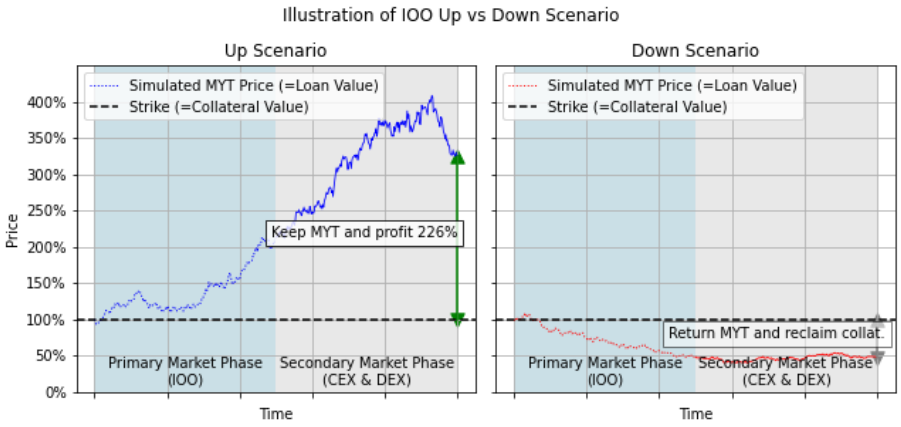

Figure 2: Illustration of default and repayment in the context of the IOO. The left side shows that if the MYT prices outperforms the given collateral price then rational borrowers will keep MYT (i.e., default on their MYT loan). The right side illustrates the alternative scenario, where the MYT price underperforms the collateral then rational borrowers will return MYT (i.e., repay their MYT loan).

third-party IOOs.

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 3. For example, in the case of a user pledging USDC, we could expect opportunity costs of around 5% on the USD collateral leg deposit.

One can see that for higher IV, the fair strikes 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

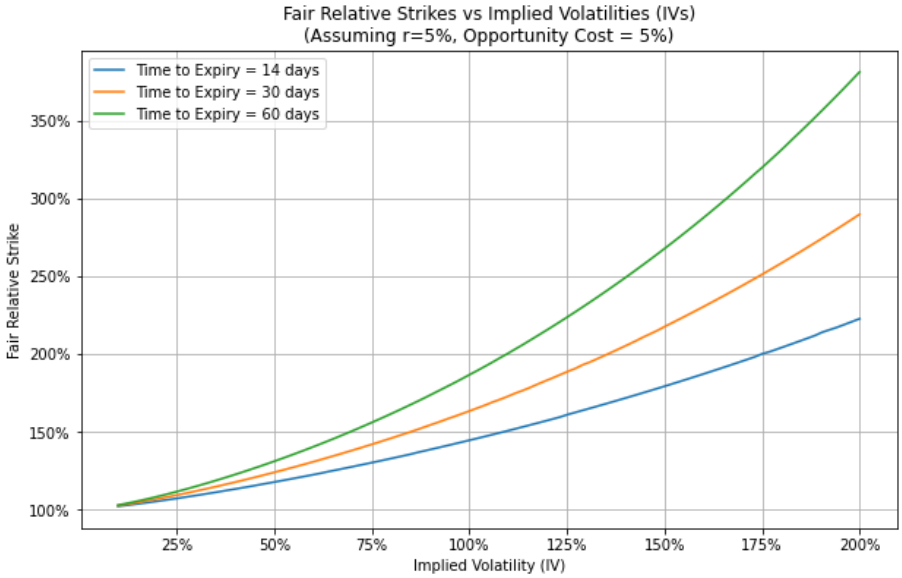

Figure 3: Fair Strikes vs. Opportunity Costs and Implied Volatilities (IVs).

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 4 illustrates the curve where $P = 55$, $k = 66$, $b = 0.8$, and $a = 4.14$.

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.

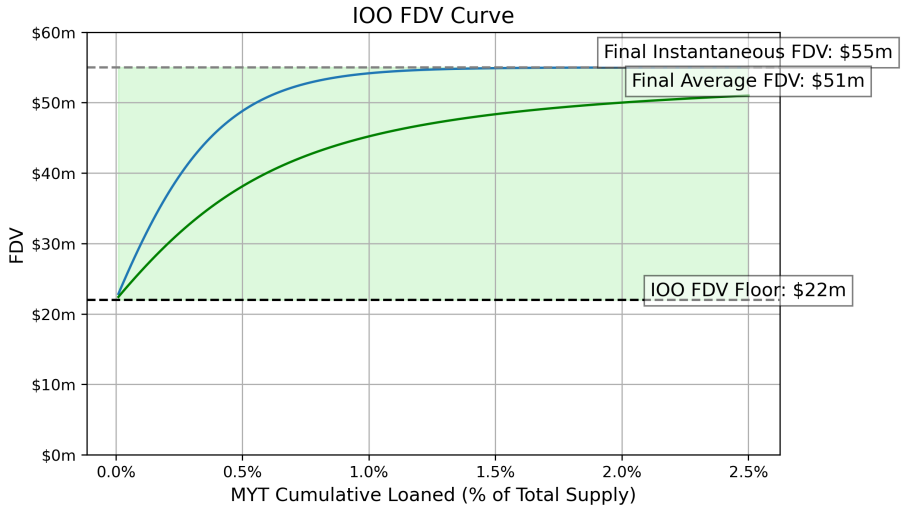

Figure 4: IOO FDV Curve.

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).[2] 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

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

overall dominant strategy is to collectively default, which yields $(\frac{X}{100}-1, \frac{X}{100}-1)$.

Protocol Revenue Streams

MYSO v2 currently comes with two primary product lines, each offering independent revenue-generating opportunities:

- **Peer-to-Peer System**[3]: This smart contract system primarily facilitates covered call transactions. For example, as of May 2024, MYSO has facilitated around $2 million in organic covered call transactions. These can be seen on the MYSO Dapp[4] with additional information also available on the MYSO Medium[5][6]. Lenders can loan tokens to borrowers, such as trading firms, with the collateral held in stables. For example, if a trading firm borrows $100,000 in XYZ tokens, providing $126,300 in stables as collateral, a 4.5% upfront fee would be applied. With a 0.5% protocol fee, the lender earns $5,670 upfront, and the protocol gains $630.[7]

- **Peer-to-Pool System**[8]: This system supports a convertible debt marketplace where borrowers can attract loans from a pool of lenders. For instance, if a borrower secures $1,000,000 in loan subscriptions with a 1% protocol fee, the protocol earns $10,000 upon successful loan initiation. This system will be rolled out as a PoC in conjunction with the Arbitrum LTIPP program.[9]

Both product lines can independently charge protocol fees, ensuring diverse and robust revenue streams.

Revenue Distribution and DAO Governance

As MYSO Finance expands, additional product lines and use cases may be introduced, such as MYSO v3. All revenues from current and future product lines will be funneled back into the MYSO DAO treasury, which will be governed collectively by all token holders using the OpenZeppelin `TimelockController.sol` and `Governor.sol` smart contracts.

All current and future revenues that the MYSO ecosystem accumulates will be funneled to the MYSO DAO treasury and can then be allocated to fund for example:

- Funding new developments and innovations.

[3] See: `https://github.com/mysofinance/v2/tree/main/contracts/peer-to-peer`

[4] See: `https://app.myso.finance/stats/loans`

[5] See: `https://medium.com/mysofinance/first-native-tlos-covered-call-successfully-completed-cbd69f5e6f3d`

[6] See: `https://medium.com/mysofinance/myso-evmos-treasury-debut-covered-call-strategy-512f6f9b2226`

[7] A detailed explanation of how protocol fee and upfront premium calculations relate to one another in the covered call use case can be found in A.

[8] See: `https://github.com/mysofinance/v2/tree/main/contracts/peer-to-pool`

[9] See: `https://snapshot.org/#/arbitrumfoundation.eth/proposal/0xa928e738eb6bf117235ac319dfa86bd56aa15a26c1eec6d3e67d2ed76633a8df`

- Conducting buybacks to support token value.
- Distributing rewards to stakeholders.

Voting Tokens

MYT holders can gain voting power by locking their tokens and earning time-dependent MYT lock reward emissions. MYSO voting tokens are implemented using OZ's `ERC20Votes` and `ERC20Wrapper`, and governance is based on OZ's `TimelockController` and `Governor` contracts. The emissions will incentivize early lockers by providing a high instantaneous yield that decays over time and will be paid out according to the following function:

$$y = \frac{kb}{e^{at} + 2b - 1}$$

where k is the initial starting yield, representing the maximum APY achieved at the beginning of the period, a is a decay factor determining the rate at which the yield decreases over time, b is a scaling factor influencing the shape and scale of the curve, and t is the time passed. Locked tokens can be unlocked again at any time subject to a cool-down period. If users want to withdraw during the cool-down period, a penalty fee is applied for immediate unlocks.

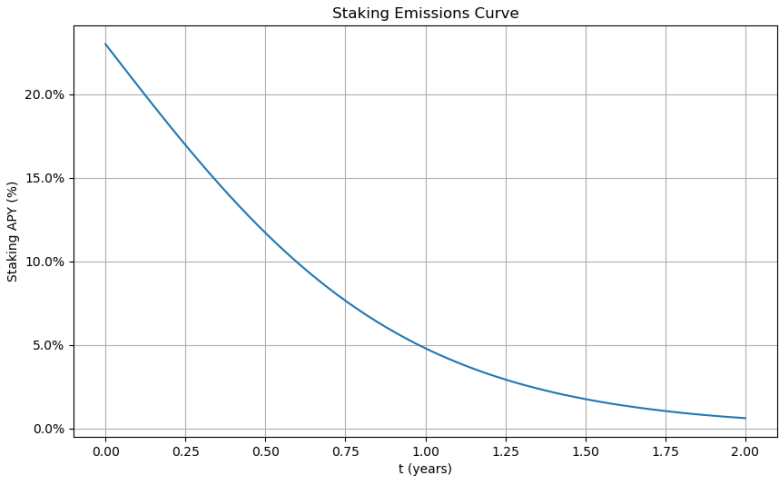

Figure 5: Emission curve with $k = 0.45$, $a = 2.15$ and $b = 1$.

Moreover, users who lock MYT and can distribute *borrow power* to other users on the platform. Users that meet a minimum borrow power threshold and who borrow through the protocol automatically trigger extra reward payouts to matched lenders. In the context of facilitating covered calls, the borrower side

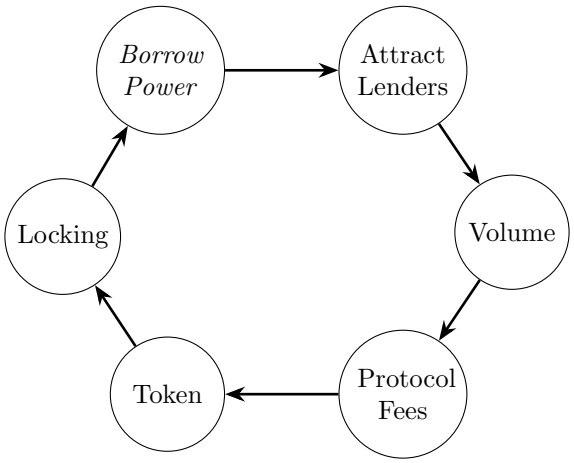

Figure 6: Illustration of flywheel effect of MYT locking, *Borrow Power* and attracting lenders.

is typically taken by institutional trading firms. Trading firms with large borrowing power become more attractive for covered call lenders to trade with, as their counterparties will receive extra MYT rewards, in addition to the covered call premium. This creates a positive feedback loop, where the more a trading firm trades, the more MYT holders will grant borrowing power towards them, attracting more lenders. Moreover, this mechanism helps mitigate wash trading risk, where users might attempt to farm rewards with pseudo-transactions. However, users looking to maximize the value of their MYT holdings would want to assess the given borrowers and only give borrow power to users where they are confident that these are genuine borrowers that bring in long-term growth. Over time, as more transaction data becomes available, it will become easier for MYT holders to assess which addresses are genuine power borrowers. Moreover, as a nice side effect, borrow power delegations allow borrowers to build an on-chain reputation they can use to attract new lenders.

Token Distribution and Vesting

The total supply of MYSO Tokens (MYT) is fixed at 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 (20.00%)**: These tokens are set aside to provide liquidity and incentivize users within the MYSO ecosystem.
- **Ecosystem Growth (19.90%)**: This portion is allocated to support the growth and expansion of the MYSO ecosystem, including airdrops, the

IOO, locking rewards, community giveaways, community councils, other community initiatives, strategic partnerships, DAO-to-DAO swaps etc.

- **Core Contributors (19.17%)**: Tokens allocated to the core team and contributors who are involved in the development of the MYSO protocol.
- **Investors (10.93%)**: This allocation is reserved for investors who provided seed capital to support the project's early stages.

The initial circulating supply mainly consists of airdrops, the IOO, and remaining ecosystem growth reserves. All tokens are unlocked over the course of 48 months according to the schedule illustrated in Figure 7.

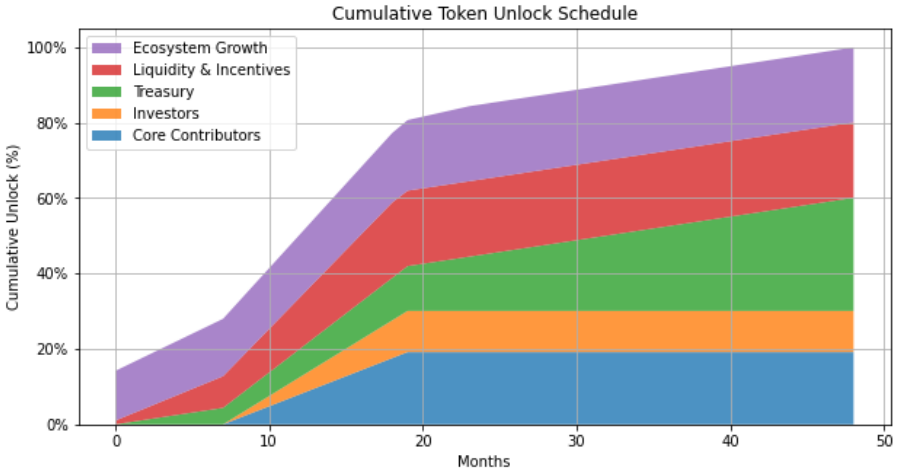

Figure 7: Cumulative token unlock schedule.

Token Utility Hooks

MYSO v2 uses the `IMysoTokenManager.sol` interface[10], which allows adding hooks to protocol-specific interactions such as borrowing on MYSO's peer-to-peer system, as well as depositing and subscribing to loan proposals on MYSO's peer-to-pool prototype. This enables the addition of extra token functionality within MYSO v2 over time. Similarly, with any future versions of the MYSO protocol, a comparable system can be used to integrate protocol functions with the MYSO Token.

[10] See: `https://github.com/mysofinance/v2/blob/main/contracts/interfaces/IMysoTokenManager.sol`.

Closing Remarks

The MYSO tokenomics framework is meant to evolve alongside the growth and development of the MYSO ecosystem. As new use cases are developed and additional product lines are introduced, it is crucial that the tokenomics model is continuously refined to meet the changing needs and dynamics of the market. An iterative approach will be necessary to ensure that the protocol remains flexible, resilient, and aligned with the best interests of its users and stakeholders. The introduction of MYT through the Initial Open Offering (IOO) marks a significant milestone, but it is by no means the end of the journey. 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. This commitment to continuous improvement is essential for maintaining the sustainability and competitiveness of MYSO Finance. The governance by the MYSO DAO, empowered by MYT holders, will play a pivotal role in overseeing these adaptations, ensuring that 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:

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