Capsule Protocol White Paper

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The capsule protocol is an important component of the defi loans ecosystem, namely permissionless loans for alt-coins and microcaps, collectively referred to as “Alts.” The proportionate market size is approximately 90% of the overall crypto-asset market cap outside of Bitcoin, Ethereum, and stablecoins, herein referred to as “Primaries.”

Funding Supply

The funding supply in crypto markets is notoriously low which is demonstrated by anomalous premiums in the derivatives market.

[...] chart1 series DYDX Funding Rates for Primaries

[...] chart2 series Binance Funding Rates for Primaries

Borrower Rates

Lending markets for Primary tokens are, nevertheless, resilient. In certain cases yields are up to one hundred times smaller by notional interest[1]. This indicates that while outside funding is low and has the capacity to cause wild changes in the yield curves, the intra-crypto market funding is plentiful and stable.

[...] chart3 series DYDX Funding Rates compared to listed token AAVE Rates (annualized)

[...] chart3 series DYDX Funding Rates compared to listed token Curve Finance Rates (annualized)

Low Liquidity In Alts

Alternative tokens and microcaps have low and inconsistent liquidity. They tend to be listed on fewer exchanges, or not listed at all relying on defi liquidity pairs only. The illiquidity causes extremely high volatility and high slippage. This makes these assets highly illiquid, volatile and difficult to accurately determine their fair market value and their liquidation price. They are also much more susceptible to abuse.

[1] For example, an annualized borrow interest may be under 0.6% for MAI, while funding rate rate for CRV on dydx is -165%, amounting to an over 250% difference in absolute annualized rates.

Force Majeure Risk in Alts

Unlike more traditional assets, alternative and microcap tokens have substantially increased force majeure or black-swan risks. For example, the managing team could disband or pressure from regulators from one of the thousands of global jurisdictions can pull the plug, in certain cases literally. There are cyber-security flaws, protocol hacks, and even involvement with sanctioned violent groups. These risks make the Alt especially more risky than Bitcoin or Ethereum, or even fiat currencies that themselves have been implicated in countless crimes and violations.

Liquidation Risk

The low liquidity of Alts creates a major liquidation issue, with potentially unknown slippage. In certain force majeure cases, such as a rug-pull or a governmental asset and token trading freeze, the effective liquidation value is 0. Consequently, the protocol design must be such that these risks may be normalized, quantified, and where possible mitigated for the funding node.

No-Recourse Lending

The defi paradigm does not envision an enforcement mechanism that reaches outside the smart-contract to fulfill lending obligations in case of default, unlike a court of competent jurisdiction. Quite the opposite, this paradigm is specifically designed to be free from external coercion. Thus, all loans on the capsule-protocol are non-recourse.

Risk-Adjusted Terms

The terms to provide liquidity for such high risk assets are adjusted in order to account for such risk, and the protocol supports such customizations. For example, adjusting the lock-up period to several years, setting the LTV substantially low, limiting early pay-off, permitting equity access in risk-adjusted tranches, and permitting the hypothecation or conversion of the collateral token to a stable, hybrid, or other instrument to mitigate the risk are supported by the protocol.

Risk Prevention Controls

In addition to supporting risk-adjusted terms, the protocol utilizes several functional risk prevention controls, or buffers.

a) Buffer 1: Minimum Cool-Down Period: the period between the time the borrower loads the capsule and when they are permitted to begin withdrawing a stablecoin. This serves as a buffer to absorb any price shocks that may be associated with the circumstances for accessing liquidity in the first place. This is a setting that may be set by the funding node of the capsule, with the default value of 7 days.

b) Buffer 2: Tranche-based liquidity access through dynamic LTV setting. Borrowers are able to access liquidity in tranches, over time. This is achieved by increasing the LTV over time.

c) Buffer 3: Asset-specific volatility-triggered halts. The protocol may be halted during times of extraordinary volatility of the collateral token to prevent abuse.

Benefits to the Lender

Sophisticated lenders may now access an entirely new market segment, and thus enjoy higher premiums, lower costs of loan origination, and lower competition.

Benefits to the Borrower

The holder of Alt assets will finally have an avenue to access equity in their holdings without outright selling the asset. This provides short-term liquidity while the borrower remains a supporter of the Alt project. The project may incentivize their holders for utilizing the protocol with rewards and perks that may be delivered via the protocol.

Benefits to the Underlying Alt Project

The Alt project, although not a necessary party to the protocol transaction, may utilize the protocol to provide additional incentives and rewards to its token-holders that are users of the capsule protocol. Digital incentives may be managed and delivered through the protocol.

Additional Risks

The Capsule Protocol is subject to substantial and probable risks inherent in finance, defi, and crypto markets. Although great care is put into the security of the protocol, the protocol may nevertheless get hacked. There may be unknown flaws in blockchain, nefarious actors, system and power outages, network issues, and a sleuth of over known and unknown risks. This protocol should be used only by sophisticated defi and blockchain users only.

Conclusion

The Capsule Protocol is a necessary part of the defi ecosystem. It permits alternative and micro-cap token holders to access equity in their alternative holdings without outright selling and thus maintaining their support for the alt project over the long term.