Proposal: [Non-Constitutional] Pilot Stage – Treasury Backed Vaults research and development

TL;DR

What this proposal does:

- Give Arbitrum DAO more options for doing grants in stablecoins, making long term investments using stablecoins, and having safer access to capital without needing to sell treasury assets like ARB tokens.
- Design and build a system for borrowing stablecoins that prevents liquidations via more assets being pulled from the treasury to increase collateralization.
- Release that Treasury Backed Vault system publicly as a public good which can be used on any stablecoin protocol.
- Complete a security audit on the smart contact code for the TBV, and a thorough risk assessment.
- Report the findings and parameter recommendations to the DAO.

What this proposal does NOT

do:

- Give allowances to move ARB from the treasury to any CDP protocol.
- Create debt or other positions with DAO funds.

Abstract

This pilot stage proposal seeks to complete Research & Development, as well as a comprehensive risk analysis, on a new Treasury Backed Vault (TBV) system which gives Arbitrum DAO the option to borrow stablecoins from existing protocols against ARB, with extremely reduced liquidation risk. It expands on existing discussions/designs of “DAO Owned Liquidations” for CDP protocols. Liquidations are always prevented by automatically pulling more collateral from the DAO treasury, increasing the collateral ratio of the loan.

Pilot Phase

This pilot is designed to give the DAO sufficient information to make an informed decision regarding borrowing stablecoins against assets in the treasury, and the confidence to use our proposed solution safely.

Motivation

The Arbitrum community is seeking ways to more efficiently and effectively use the capital in the treasury. The strategies for grant programs, Mergers and Acquisitions, long term investments, and treasury sustainability seek sustainable solutions that minimize required sell pressure on the ARB token.

The treasury currently has about $3.8B USD worth of ARB tokens. Long term diversification of this is key, but the community also needs access to capital now for grants, treasury management, M&A, and more. Developing an alternative strategy for accessing stablecoins gives Arbitrum DAO more options and power.

Key Terms

CDP - Collateralized Debt Position. A type of financial primitive used by protocol like Maker, Open Dollar, Reflexer, etc… Collateral backs stablecoins with required loan to value ratios.

Liquidation - an event which happens when the value of collateral backing a loan is less than the value of the loan, or below a required threshold. This forces the collateral to be sold in order to pay back the debt.

Specifications

The DAO should have the option to borrow stablecoins against its ARB and other future assets. However, using traditionally structured lending protocols creates too much risk of liquidation. Our proposed solution is a Treasury Backed Vault that severely limits the liquidation risks and lets the community achieve its goals with open access to its capital.

Liquidations are mitigated by a “savior module” connected to a CDP position. The savior module adds an additional step between a vault being marked for liquidation and becoming liquidated. The module automatically pulls more ARB tokens directly from the DAO treasury (or elsewhere), adds them to the collateral of the position until it is raised above the liquidation threshold, and completely prevents liquidations from occurring. Any time liquidation on the DAO’s position is called, the savior activates first. The module contract would be given an allowance of ARB tokens by the Treasury to spend, allowing the Arbitrum DAO to completely control and at any time update the bounds of how many tokens can be pulled from the treasury.

Example usage of Treasury Backed Vaults:

1. Arbitrum DAO deposits 1,000,000 ARB, worth $1,500,000 in a CDP protocol like Open Dollar or others where Treasury Backed Vaults are enabled.
2. Arbitrum DAO gives a TBV savior module permission to spend an additional 1,000,000 ARB, which remains in the DAO treasury. The DAO sets parameters with the savior.
3. Arbitrum DAO borrows 1,000,000 stablecoins worth $1,000,000
4. Due to market conditions, the price of ARB drops 33% suddenly, and the position is under the required collateralization ratio. It is now up for liquidation.
5. Anyone calls the public function to liquidate the position. The vault is marked for liquidation.
6. Before liquidation occurs, the savior module is automatically called. It has been set with specific parameters by the DAO to pull an additional 1,000,000 ARB from the treasury and deposit it in the vault.
7. The position now has 2,000,000 ARB deposited in it, and is safely over the collateralization requirements. No liquidation happens and no additional votes were required to manage the position safely.

Steps to Implement

The implementation is essentially split into 4 phases

1. Research and Development

A team of 3 solidity developers design, build, and document Treasury Backed Vaults with support for Arbitrum DAO specifically in mind.

1. Risk Analysis

A team of 2 financial analysts complete a report on suggested parameters and the greater ecosystem impact of different borrowing scenarios for Arbitrum DAO. This will come with many helpful recommendations that future delegates can lean on to make proposals to use the vaults how they choose.

1. Audit

A public audit contest will be conducted and managed by our team to review the security of the smart contracts of the TBV. This is important to complete at this stage because we want the DAO to be able to feel confident in the readiness of the system. A formal security report will be published and summarized in a post to the DAO. Audit reward recipients will be required to complete compliance and KYC before receiving funds.

1. Reporting

At the end of the pilot a report will be made to the DAO that includes results of the security audit, documentation on using TBVs, and results of the risk analysis. The report will include recommendations like how much ARB should be allowed to be pulled by a TBV to limit risk, how many stablecoins could safely be borrowed at a time if the DAO should choose to use the TBVs, how much sell pressure on ARB could be avoided in different scenarios, suggested collateralization settings, and other parameters for real usage.

Timeline

Overall time to project completion: ~2.5 months

Research and Development, done asynchronous with risk analysis reporting: 1.5 months

Security audit and reporting: 2 weeks

Complete report for the DAO and documentation on usage: 2 weeks

Team

Research and development will be completed by a designated team made up on contributors to Open Dollar and led specifically by CupOjoseph & Pi0neerpat. Open Dollar is the largest Arbitrum native stablecoin protocol by TVL. We will also oversee the third party audit of the code that is developed, and personally present the risk analysis (including recommendations) to the DAO at the end of the pilot.

Overall Cost -

Total cost: 250,000 ARB

Breakdown

Research and Development: 125,000 ARB

Independent Security Audit: 50,000 ARB

Risk Analysis Report: 50,000 ARB

Administrative: 25,000 ARB

Remaining or unspent funds will be returned to the DAO treasury promptly.

Thank you!! Please support our proposal, we think this could be a huge unlock for the DAO and a powerful tool to add to the community's toolbox. We appreciate any further feedback on and off the forum on this proposal and the Treasury Backed Vaults concept overall.

Helpful links:

Treasury Backed Vaults Overview from Open Dollar

Original DAO Owned Liquidations post

Arbitrum Treasury Sustainability Group discussion on DAO Owned Liquidations

Existing proof of concept implementation That's right, we already started building.

EDIT:

Based on the feedback so far we will publish this week a list of specific research and modeling questions that should be answered in the risk analysis report.

Risk Analysis Report Topics

A list of topics, as requested by the community, that will be covered in the report. Each will have a model of different scenarios and specific recommendations to take on short, medium, and long term time horizons.

- Over-Collateralization Ratio requirements for loans are different sizes
- Interest rate settings for loans are different sizes
- Loan sizes based on different market conditions (including worst case scenario)
- Propose Debt ceiling requirements on CDP protocols that integrate TBV
- Sell pressure situations on the stablecoin
- Strategies for paying down debt long term given different market situations
- Percentage of the stablecoin which is backed by TBV or ARB token versus baskets of other assets
- Outline Mechanism for reporting on the health of TBV positions