Background

The Treasury & Sustainability Working Group was initiated within the scope of thePlurality Labs grants. Its primary aim is to explore optimal practices for addressing treasury management challenges and recommend which practices, tools, or service providers the DAO should adopt.

karpatkey was awarded a grant by Arbitrum's Treasury and Sustainability Working Group to conduct research focused on three key areas:

1. Assessment of ARB Price Impact:

Understanding how ARB sales might influence current market dynamics and recommendations to reduce the price impact on ARB.

1. Sequencer Revenue Utilisation:

Exploring the use of sequencer revenues, evaluating their prospective allocation and efficiency in advancing the organisation's objectives.

1. Developing Guidelines for Effective Treasury Management:

Set of principles and strategies for efficient and sustainable treasury management, ensuring the organisation's long-term financial health.

Here's the final report:

docs.google.com

[

](https://docs.google.com/document/d/1UV8ZjlWmRXGJr4XMrU3E3sUoa0MrdvKl67w7inHcf7M/edit?usp=sharing)

Arbitrum Treasury and Sustainability Research

This Doc is private

TL;DR

Background

This section offers details about the Arbitrum DAO and the ARB token, with a particular focus on the initial distribution of the DAO's funds and their utilisation as of today:

- more than 179 million ARB tokens have been designated for various proposals, representing around 5% of the Arbitrum DAO's initial treasury allocation in ARB.
- The average daily allocation by the DAO, considering all active proposals, breaks down as follows:
- About 260,826 ARB per day from the token generation until July 31st, 2024, when distribution to all initiatives except for staking will end according to the built calendar.
- Around 358,636 ARB per day from when allocations started (August 7th, 2023) to July 31st, 2024.
- With an average daily net revenue of 25.89 ETH from the sequencer over the past year, the DAO is only generating about 10% of its current ARB allocations based on the closing prices as of January 9th, 2024.
- About 260,826 ARB per day from the token generation until July 31st, 2024, when distribution to all initiatives except for staking will end according to the built calendar.
- Around 358,636 ARB per day from when allocations started (August 7th, 2023) to July 31st, 2024.
- With an average daily net revenue of 25.89 ETH from the sequencer over the past year, the DAO is only generating about 10% of its current ARB allocations based on the closing prices as of January 9th, 2024.
- Based on current trends, the DAO's expenditure is expected to account for roughly 10 to 15% of the treasury by the end of the ARB vesting period in March 2027. This trajectory suggests that the Arbitrum DAO will maintain a significant margin to allocate additional resources for the growth and development of the Arbitrum ecosystem.

ARB Price Impact

This section delves into the matters related to the price impact of ARB sales in the open market, focusing on the circulating supply and liquidity, both on-chain and off-chain. This includes an analysis of trading volumes and market depth.

- In the past 30 days, the average daily trading volume was approximately 428.84 million ARB, equivalent to $670.43 million at the current price.
- Of this trading volume, 75% occurred on Centralised Exchanges (off-chain CEXs), while the remaining 25% occurred on Decentralised Exchanges (on-chain DEXs).
- The current market can absorb approximately $13.5 million in ARB sales daily with a 2% price impact, considering the combined liquidity from both on-chain and off-chain trusted sources.
- To reduce the potential market effects of ARB liquidation, several measures can be considered, including but not limited to:
- Diversifying the funding currency for initiatives;
- Implementing payment streams to regulate the flow of ARB;
- Optimising the frameworks for grants and incentives;
- Increasing ARB's on-chain liquidity;
- Enhancing ARB's use cases within the DeFi ecosystem;
- Adding more utility features to the ARB token; and
- Considering ARB buybacks using the DAO's revenue.
- Diversifying the funding currency for initiatives;
- Implementing payment streams to regulate the flow of ARB;
- Optimising the frameworks for grants and incentives;
- Increasing ARB's on-chain liquidity;
- Enhancing ARB's use cases within the DeFi ecosystem;
- Adding more utility features to the ARB token; and
- Considering ARB buybacks using the DAO's revenue.

Sequencer Revenue Allocation

This section examines potential strategies for deploying the net revenue generated by the Arbitrum sequencer, which is currently unutilised and held in the Treasury Timelock.

- Since the launch of the sequencer, the Arbitrum DAO has accumulated nearly 14,000 ETH in net revenue, averaging over 700 ETH per month in the past year. However, as of today, the DAO has not actively deployed this substantial revenue.
- Exploring how other rollups utilise their sequencer revenue:
- Optimism directs its sequencer revenue towards the Retroactive Public Goods Funding program (RPGF). So far, three funding rounds have been exclusively financed with OP tokens. However, at least in part, future rounds are anticipated to incorporate ETH funding.
- Optimism's total on-chain net revenue is around 9,422 ETH as of the time of this writing.
- Base, an L2 built on the OP Stack in collaboration with Optimism, contributes 2.5% of total sequencer revenue or 15% of net on-chain revenue (whichever is higher) to the Optimism Collective as part of the collaboration agreement.
- Since Base Chain's launch, the sequencer has accrued 3,493 ETH in net revenue.
- Metis is the only rollup with a clear commitment to decentralising its sequencer.
- Metis has recently introduced a staking mechanism requiring METIS token stakes for operating a sequencer node, aimed at attracting more sequencers and reducing METIS's circulating supply.
- The Arbitrum community has proposed various uses for the sequencer revenue; however, regulatory and operational considerations are crucial in evaluating these initiatives:

- Funding public goods;
- Establishing a permanent ecosystem fund;
- Returning value to stakeholders;
- Creating protocol-owned liquidity; and
- Developing a custom Liquid Stake Token (LST).

- Funding public goods;
- Establishing a permanent ecosystem fund;
- Returning value to stakeholders;
- Creating protocol-owned liquidity; and
- Developing a custom Liquid Stake Token (LST).

- Proposed utilisation pathways by karpatkey:
- Funding Grants for Ecosystem Development: Consider using the ETH from the sequencer to diversify grant funding mechanisms, reducing reliance on ARB tokens and diminishing market selling pressure.
- Building DAO Owned Liquidity (DOL) and later transitioning to a Buyback and Make Strategy: Use sequencer-generated ETH and ARB from the treasury to form a liquidity pool position on major DEXs like Balancer or Uniswap, enhancing ARB's on-chain liquidity and reducing the dependence on centralised, off-chain, CEXs. After reaching a liquidity threshold, transition to a "buyback and make" strategy, repurchasing ARB for ecosystem development and grant funding, benefiting ARB holders through increased buying pressure.
- Allocating ETH to a Liquid Staking Protocol (LSP): Engage in staking activities for validation rewards. Options include forming a partnership with a leading LSP, creating a custom staking solution, or launching an Arbitrum-specific LST. An additional option includes providing ARB holders with staking rewards, akin to the approach used in the Golem Foundation's Octant project, which supports public goods. However, if the DAO considers this route, conducting a thorough legal evaluation is advisable due to the current uncertain legal environment. This precaution is essential as the legal landscape could evolve in ways that might not favour such initiatives in the future.

- Funding Grants for Ecosystem Development: Consider using the ETH from the sequencer to diversify grant funding mechanisms, reducing reliance on ARB tokens and diminishing market selling pressure.
- Building DAO Owned Liquidity (DOL) and later transitioning to a Buyback and Make Strategy: Use sequencer-generated ETH and ARB from the treasury to form a liquidity pool position on major DEXs like Balancer or Uniswap, enhancing ARB's on-chain liquidity and reducing the dependence on centralised, off-chain, CEXs. After reaching a liquidity threshold, transition to a "buyback and make" strategy, repurchasing ARB for ecosystem development and grant funding, benefiting ARB holders through increased buying pressure.
- Allocating ETH to a Liquid Staking Protocol (LSP): Engage in staking activities for validation rewards. Options include forming a partnership with a leading LSP, creating a custom staking solution, or launching an Arbitrum-specific LST. An additional option includes providing ARB holders with staking rewards, akin to the approach used in the Golem Foundation's Octant project, which supports public goods. However, if the DAO considers this route, conducting a thorough legal evaluation is advisable due to the current uncertain legal environment. This precaution is essential as the legal landscape could evolve in ways that might not favour such initiatives in the future.

Guidelines for Effective Treasury Management

This section explores strategic methods to manage the existing treasury effectively, aligning with the DAO's objectives and goals. Our approach advocates for a top-down strategy anchored by formulating an Investment Policy Statement (IPS).

- According to the principles of a robust IPS and the strategic aims outlined in the DAO's Amended Constitution, the primary goal of the Arbitrum DAO is to ensure the sustainability, viability, growth, and development of the Arbitrum ecosystem through responsible management and strategic resource allocation, guided by the established principles.
- This leads to several key guidelines for treasury management:
- The treasury should support initiatives that drive growth and the long-term prosperity of Arbitrum products.
- Capital preservation is paramount, with the goal of the returns at least covering a significant part of the grants and incentive programs, considering the treasury's substantial size.
- The long-term aim is to generate returns that can perpetually fund all necessary initiatives.

- Capital preservation takes precedence over maximising returns.
- The investment horizon is long-term, with a conservative approach to risk.
- Preference should be given to proven investments and instruments with a solid track record.
- Ethereum-aligned investments are favoured.
- Investment opportunities on Arbitrum should be prioritised.
- The treasury should support initiatives that drive growth and the long-term prosperity of Arbitrum products.
- Capital preservation is paramount, with the goal of the returns at least covering a significant part of the grants and incentive programs, considering the treasury's substantial size.
- The long-term aim is to generate returns that can perpetually fund all necessary initiatives.

- Capital preservation takes precedence over maximising returns.
- The investment horizon is long-term, with a conservative approach to risk.
- Preference should be given to proven investments and instruments with a solid track record.
- Ethereum-aligned investments are favoured.
- Investment opportunities on Arbitrum should be prioritised.

- Two case studies that illustrate how other prominent DAOs manage their treasury are presented: the ENS Endowment and the Gnosis DAO.
- Both DAOs, despite differing objectives, have implemented a trustless, non-custodial tech solution usingZodiac Modules. This allows them to retain custody of funds while granting the designated manager enough flexibility to respond to market shifts and unusual situations, like exploits.
- This is facilitated by role-based access permissions for the manager, predetermined and whitelisted by the DAO through voting, allowing only specific actions.

- Both DAOs, despite differing objectives, have implemented a trustless, non-custodial tech solution usingZodiac Modules. This allows them to retain custody of funds while granting the designated manager enough flexibility to respond to market shifts and unusual situations, like exploits.
- This is facilitated by role-based access permissions for the manager, predetermined and whitelisted by the DAO through voting, allowing only specific actions.

- The treasury currently exhibits a significant imbalance, with ARB tokens making up 99.7% of its composition. This heavy reliance on ARB tokens introduces substantial risk due to market volatility, highlighting the need for strategic rebalancing.
- Considering these insights, it's evident that the DAO requires a diversification strategy that balances both risk management and return optimisation.

Return Objective

- With the DAO's commitment of 103,481,000 ARB towards various initiatives, the total amount of Investable Assets — those that could theoretically be diversified for yield generation — is estimated to be in the range of 3.4 to 3.5 billion ARB ($6.2 to $6.4 billion).
- To meet the financial demands of its approved ARB distribution initiatives, the DAO's required rate of return on its investments would vary between 1.19% and 2.54%. This variation depends on whether the Staking Initiative is included in the analysis and whether Sequencer Revenue is considered.

Risk Objective

- The DAO must structure its treasury to ensure the sustainability of its expenses from the yields of its assets, even in challenging market conditions marked by significant downturns.

Recommended Assets

Given the DAO's unique situation and objectives, three assets are recommended for the treasury's portfolio:

- Stablecoins and Real World Assets (RWA), mainly US treasuries with a maximum maturity of one year;

- ETH; and
- ARB.

Diversification of Investable Assets

- To achieve a desired diversification target, measured as the share of ETH vs the share of Stablecoins/RWAs, the DAO would need to allocate between $2.4 billion and $5.3 billion towards yield-generating strategies. This range depends on the inclusion of the Staking initiative in the analysis. A Worst-case Scenario that considers a significant decline in the price of ETH is also presented.
- In the optimal scenario where ETH value is stable or rising and conservative expense projections are applied, the DAO would need to allocate about 40% of its treasury to yield-generating assets. It is essential to recognise that these allocation needs will likely change as the DAO and the Arbitrum ecosystem develop and mature over time.

Treasury Management Architecture

- Drawing from the experiences of the ENS Endowment and Gnosis DAO, it would be advantageous for the Arbitrum DAO to adopt a trustless, non-custodial, and role-based treasury management approach.
- This method offers a balance of agility and flexibility for quick market response while maintaining the security of not relinquishing fund control to any external manager or committee.