COMPREHENSIVE ANALYSIS OF INCENTIVE PROGRAM EFFECTIVENESS AND VALUE GENERATION FOR LTIPP PARTICIPATING PROTOCOLS ON ARBITRUM

BY TEAM LAMPROS DAO

Preface

The rapid expansion of decentralized finance (DeFi) and blockchain-based applications has catalyzed innovative strategies for user acquisition and retention. As competition intensifies among blockchain networks, ecosystems like Arbitrum have strongly supported more grants and incentive programs to drive growth, attract liquidity, and enhance user engagement. This report evaluates the impact of Arbitrum's Long-Term Incentive Pilot Program (LTIPP), designed to encourage sustained participation and foster a thriving ecosystem.

The LTIPP was introduced at a key moment for Arbitrum to strengthen its market presence and prove how incentives can encourage ongoing user engagement and liquidity. However, questions persist regarding the long-term efficacy of such programs, particularly in balancing benefits across diverse sectors and preventing issues such as resource concentration and inequitable advantages.

This report provides a detailed analysis of the LTIPP's influence on key sectors within the Arbitrum ecosystem, including decentralized exchanges (DEX), gaming, perpetual, and yield farming. By examining metrics such as daily active users (DAU), monthly active users (MAU), transaction counts, and retention rates, we uncover the nuanced ways in which the LTIPP has shaped user behavior and sectoral growth.

Moreover, we delve into user actions with ARB rewards and explore the unintended incentivized behaviors that may arise from varying reward structures. Our analysis includes a thorough evaluation of ARB token distribution from June 3 to September 2, 2024, categorizing incentive mechanisms into four main groups: Proprietary TVL, Partner TVL, Volume-Based Incentives, and Miscellaneous. This segmentation allows us to assess the performance and effectiveness of different strategies in attracting liquidity and engaging users.

Furthermore, this report looks into how mercenary users operate within the Arbitrum ecosystem. We will examine how many users are engaging with more than one protocol, how they move between them, and what this means for the overall system. Our focus is on understanding the behaviors of users who interact with a large number of protocols. By analyzing their transaction patterns, we aim to offer insights that could help improve incentive programs and ensure they are more effective in encouraging genuine, long-term participation.

Preface

In addition, we examine the correlation between reward/user ratios and market demand, emphasizing the importance of understanding how user activity influences reward levels. By analyzing transaction data before, and during the incentive period, we identify key trends and correlations that inform the development of balanced incentive structures promoting long-term network growth.

The insights drawn from this comprehensive analysis aim to serve as a valuable resource for delegates, governance participants, and other stakeholders involved in designing effective incentive programs within decentralized ecosystems. By understanding the dynamics at play, we can craft more efficient programs that achieve desired outcomes while minimizing potential imbalances or inequities. Ultimately, this report contributes to the broader conversation on sustainable growth strategies in the decentralized space, providing a data-driven perspective on the complex interplay between incentives, user behaviour, and ecosystem development.

Acknowledgement

We are sincerely grateful to the Arbitrum ecosystem for entrusting us with this task and providing us the opportunity to contribute to such a significant initiative. This experience has allowed us to gain valuable insights into the ecosystem and make meaningful contributions to the broader community.

We would like to extend our heartfelt appreciation to <u>Matt</u> from StableLab, the LTIPP program manager, for his efficient management of the LTIPP program and seamless coordination between the council members and the team.

Furthermore, we are thankful to the Council members – <u>GFX Labs</u>, <u>404 DAO</u>, <u>Wintermute</u>, <u>GMX</u>, and <u>Karel Vuong</u> – for their continuous support and constructive feedback. Their insights and encouragement not only enriched our work but also helped us refine our approach, enabling us to achieve a more comprehensive and impactful outcome.

We also want to thank Hayden from <u>Blockworks</u> for being there to guide us wherever required.

Team Information

Lampros DAO is an open community of builders and governance enthusiasts dedicated to fostering transparency, decentralization, and inclusivity within the Web3 ecosystem. Our mission is to empower emerging Web3 developers by enhancing their skills and knowledge, ultimately contributing to a more decentralized and resilient community. We actively engage in governance, collaborate on innovative projects, and provide mentorship to new builders, all while promoting a transparent and inclusive environment.

Our contributions to the Arbitrum community focus on several key areas: governance engagement, protocol development, ecosystem expansion, research and education, and geographic growth strategies.

We want to share an update with everyone that we have rebranded from "Lampros Labs DAO" to "Lampros DAO". Everything else remains the same, including our values, mission and team members.

This project was focused on research, and the following team members from our team contributed significantly to its success.



Euphoria

Euphoria holds a management postgraduate degree from a Tier 1 institute, specializing in data analysis, project management, and marketing. He played a vital role in coordinating the research efforts, ensuring that insights derived from complex datasets were effectively communicated and utilized to drive the project forward.



Chain-L

Chain_L brings extensive experience from the blockchain industry, having developed various projects across multiple ecosystems. His contributions included analyzing on-chain data and tracking key metrics, which were essential in evaluating the project's impact and guiding future decisions.



ARDev

ARDev is proficient in data warehousing and ETL processes, specializing in integrating on-chain data and ensuring data quality. His expertise in using Dune Analytics allowed him to create interactive dashboards that provided valuable insights into user behavior, enhancing the project's research outcomes.



Jason

Jason is an expert in statistical analysis and data mining, utilizing programming languages like Python for exploratory data analysis. His work focused on econometric modeling and quantitative analysis, providing critical assessments of the financial mechanisms involved in the project, which greatly informed the research findings.

For a comprehensive view of our past work and contributions to the Arbitrum ecosystem, please visit our Notion page Lampros DAO | Arbitrum Contributions.

Methodology

Data collection methods

In this analysis, we focused on collecting data from several key sources to provide a thorough understanding of user interactions and the effectiveness of incentives within the Arbitrum network. We gathered on-chain transaction records and user data from Dune Analytics, which offered valuable insights into user behavior. Additionally, we sourced Total Value Locked (TVL) data from DefiLlama to assess the liquidity across various protocols. We verified ARB reward distribution addresses through <u>Arbgrants/Powerhouse Connect</u>, ensuring the accuracy of the information regarding funding mechanisms employed by different protocols. After manually confirming these addresses, we ensured their validity to support the accuracy of our analysis. Furthermore, we collected Layer 2 gas fee data from Dune Analytics to analyze the transaction costs associated with user activities.

Data Processing

Following the data collection, we focused on cleaning and processing the data to ensure accuracy and consistency. We utilized Python and its libraries, particularly Pandas, to handle this task. This process involved filtering out inaccuracies, managing missing values, and organizing the data into a structured format suitable for analysis. Thorough data processing was essential to establish a solid foundation for the subsequent analyses, ensuring that the insights derived would be reliable and valid.

Visualization Creation

Once the data was cleaned and organized, we proceeded to create visualizations to illustrate key findings and trends. We employed both Dune Analytics and the Python library Plotly to generate interactive visual representations of the data. These visualizations played a crucial role in highlighting important patterns in user behavior, protocol performance, and the impact of incentive programs, making the analysis more accessible and easier to interpret.

Dashboard Creation

To further enhance our analysis, we created dashboards using both Dune Analytics and Python. These dashboards served as user-friendly interfaces for community members to engage dynamically with the data, facilitating informed decision-making and deeper exploration of insights.

Report Creation

Finally, we compiled all the insights, visualizations, and findings into this comprehensive report. This report encapsulated the methodology, analysis, and conclusions drawn from the data, presenting a clear narrative about user interactions and the effectiveness of incentive programs within the Arbitrum ecosystem.

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A. Definitions

DAU (Daily Active Users): The average number of unique users interacting with the protocol per day.

MAU (Monthly Active Users): The average number of unique users interacting with the protocol each month.

TVL (Total Value Locked): The total capital locked within a protocol, representing the value of assets staked or provided as liquidity.

Transaction Count: The number of transactions within the protocol per day.

Transaction Volume: The sum of the transaction amounts within the protocol per day.

Retention Rate: The percentage of users who were active before the incentives and continued their activity on the protocol during the incentive period.

Pre-Incentive Phase: The period from March 4, 2024, to June 2, 2024, used to establish performance benchmarks before the incentives started.

Incentive Phase: The period from June 3, 2024, to September 2, 2024, when the incentive programs were in effect.

ARB Token Distribution: The process of allocating **ARB** tokens to protocols as part of Arbitrum's Long-Term Incentive Programs (LTIPP).

Layer 2 (L2) Gas Fees: The fees paid by users for transactions executed on Layer 2 blockchains like Arbitrum, measured by subtracting L1 gas costs from the total gas used.

Unique Users: The number of distinct users interacting with a protocol, used to assess the scale of protocol engagement.

Dollar-Cost Average (DCA) of Incentives: The average cost of distributing ARB tokens based on the incentive mechanism, is calculated across multiple protocols.

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A. Definitions

Proprietary TVL Mechanisms: Incentive structures aimed at boosting internal liquidity within a protocol through capital locking, staking, or pool allocation.

Partner TVL Mechanisms: Incentives that promote liquidity growth through external collaborations or partnerships with other protocols.

Volume-Based Mechanisms: Incentive strategies focused on increasing protocol activity, transaction volume, or user engagement through rewards like fee rebates and referral programs.

Miscellaneous Mechanisms: Incentives that do not fit into the above categories, such as borrowing/lending incentives, quests, and reward programs.

Daily Transaction Count: The total number of transactions that occurred throughout the day.

Daily ARB Rewards: The total ARB rewards distributed by the protocols within a day.

B. Abbreviations

ARB: Arbitrum Token

DAU: Daily Active Users

L2: Layer 2

LTIPP: Long-Term Incentive Pilot Program

MAU: Monthly Active Users

TVL: Total Value Locked

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Executive Summary

Area of Focus

This report evaluates the impact of Arbitrum's Long-Term Incentive Pilot Program (LTIPP) on user engagement, value generation, and protocol growth across various sectors of the ecosystem, including "Quests," "DEX," "RWA," "Gaming/Gambling," "Stables/Synthetics," and more. It also explores how users manage ARB rewards, highlights unintended incentivized behaviors, and assesses the effectiveness of different incentive strategies like Proprietary TVL, Partner TVL, Volume-Based, and Miscellaneous incentives.

Major Findings

The analysis of sector growth, user interaction, and incentive effectiveness revealed varied outcomes across different areas of the Arbitrum ecosystem. In terms of user engagement, the "Quests" sector recorded the highest Daily Active Users (DAU), while the "Wallet" sector saw growth and the "Perpetual" sector experienced a decline during the incentive period. Monthly Active Users (MAU) spiked in sectors like "RWA" and "Gaming/Gambling" but showed declines in "DEX," "Quest," and "Liquidity/Leverage." When looking at value generation, the "Stables/Synthetics" and "Lending" sectors experienced the most significant growth in Total Value Locked (TVL), while sectors such as "Bridge" and "DEX" saw either modest or negative changes. Transaction volumes surged in the "RWA" and "Gambling" sectors but dropped in "Oracles" and "Stables/Synthetics." Retention rates were the highest in "Options" and "Oracles," while they were the lowest in "Gaming/Gambling" and "Stables/Synthetics." Proprietary incentives proved to be the most effective in driving TVL growth.

In terms of user actions with ARB rewards, selling/swapping ARB tokens was the dominant activity, accounting for 47.8% of total ARB spent, followed by liquidity provision at 17.6% and lending/borrowing at 17%. Unintended behaviors, such as circular transactions and holding rewards without further action, were also identified, potentially undermining the effectiveness of the rewards program.

The effectiveness of the Long-Term Incentive Pilot Program (LTIPP) varied across different incentive strategies. Proprietary TVL strategies, such as liquidity incentives and native token staking, resulted in the highest TVL and user engagement, although they also led to higher gas fees. Partner TVL strategies, while creating substantial liquidity, were less effective in attracting user engagement compared to proprietary methods and incurred lower gas fees. Volume-based incentives drove moderate levels of TVL and user engagement, particularly excelling in trading activity, but were less effective in retaining liquidity. Miscellaneous incentives like quests was impactful in terms of TVL, but they attracted a diverse range of user participation and incurred the lowest gas fees.

The analysis of mercenary users, who tend to prioritize short-term rewards over long-term engagement, showed that 41.76% of users engaged with more than one protocol, with a small group of 13 users receiving rewards from over eight protocols. These mercenary users participated in 51 governance proposals but showed minimal involvement in governance voting, with only 9% actively voting, despite holding up to 12% voting power in some cases.

Lastly, in terms of ARB reward distribution, D2 Finance had the highest ARB/user ratio, indicating a concentrated reward distribution among a smaller user base, while Primex and Yield Yak had the lowest ratios, suggesting a more equitable distribution. Temporal changes in the ARB/user ratio around specific dates indicated that although higher rewards led to short-term spikes in user engagement, the relationship between rewards and user activity was inconsistent over time.

Conclusion

The LTIPP had a variable impact across sectors, with the most substantial effects in "Quests," "RWA," and "Gaming/Gambling." Proprietary incentives were the most effective in driving TVL and user engagement, particularly in sectors like "Options" and "Oracles." However, sectors such as "Perpetual" and "Stables/Synthetics" showed minimal growth or declines, underscoring the need for more tailored incentive programs.

The presence of mercenary users poses risks to long-term engagement and decentralized governance, as they prioritize short-term rewards and have minimal participation in governance. Meanwhile, the diverse utilization of ARB rewards demonstrates both the success and unintended consequences of incentive programs, such as immediate sell-offs and circular transactions that reduce long-term effectiveness.

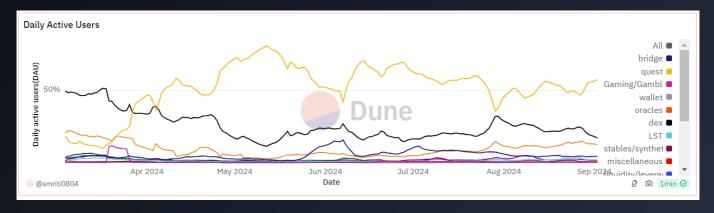
To achieve sustainable growth, future incentive programs should focus on sector-specific strategies, encourage governance participation, and address unintended behaviors through mechanisms like blacklisting, incentivized holding periods, and penalties for inactive rewards. Furthermore, a comprehensive approach that integrates both monetary and non-monetary incentives will be essential for fostering long-term user engagement within the Arbitrum ecosystem.

Sector Growth, User Interaction, and Incentive Effectiveness In this section of the analysis, all 86 protocols involved in the LTIPP have been considered irrespective of the fact that they have received incentives or not. Daily Active Users (DAU), Monthly Active Users (MAU), transaction count, transaction volume, and retention rate have been computed using data from all the protocols. However, Total Value Locked (TVL) has been calculated using data from only 54 protocols, based on the availability of information from DeFiLlama.

Daily Active Users (DAU)

1. Daily Active Users (DAU): Normalized to Percentage

To understand daily user engagement patterns across sectors, we created a graph showing the normalized percentage of DAU for each sector. Sectors in this analysis include Decentralized Exchanges (DEX), Yield, Lending, Perpetual, Options, Stables/Synthetics, Liquidity/Leverage, Real World Assets (RWA), Bridge, Liquidity Staking (LST), Gaming/Gambling, Wallet, Oracles, Quest, and Miscellaneous.



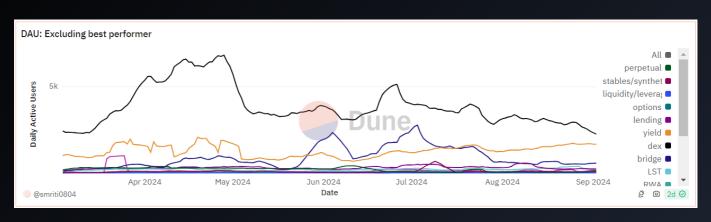
Visualization Link - Daily Active Users (Normalized to percentage)

The graph shows changes in DAU across these sectors, revealing engagement trends over time. We used a 7-day moving average to smooth data fluctuations and highlight consistent activity levels within each sector covering 3rd June - 10th June for accurate transition data.

The period before 6th June is the pre-incentive phase, while the period after is the incentive phase. Notably, "Quest" showed the highest DAU, with DEX following closely. Meanwhile, sectors like Options, Lending, and RWA consistently reported low DAU, indicating low user interest or limited impact from incentive programs in these areas.

2. Daily Active Users (DAU): Excluding Best Performer

To provide a clearer analysis, we created a graph excluding "Quest," the highest-performing sector. This allowed us to highlight DAU trends in other sectors during the pre-incentive and incentive phases.



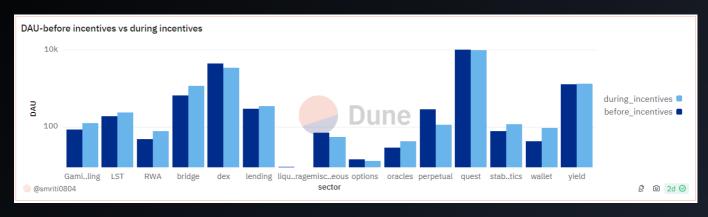
Visualization Link - Daily Active Users (Excluding best performer)

This view focuses on the remaining sectors, again using a 7-day moving average for DAU over time. This visualization reveals notable fluctuations in user engagement across sectors, which could reflect responses to market conditions or specific sector events.

The data shows significant increases in DAU for Bridge and Lending, which peaked during the incentive phase, indicating that incentives effectively boosted activity in these areas. In contrast, Oracles, Wallet, Miscellaneous, LST, RWA, and Gaming displayed consistently low DAU throughout both phases, suggesting limited impact from incentives on these sectors.

3. Daily Active Users (DAU): Before Incentives vs. During Incentives

This comparison visualizes average DAU across sectors before and during the incentive program, highlighting how incentives impacted user activity.



Visualization Link - Daily Active Users (Before incentives vs During incentives)

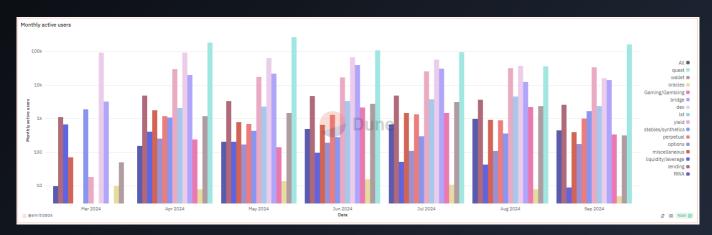
The bar graph displays DAU changes across sectors, with light blue bars for DAU during incentives and dark blue bars for DAU before incentives. The Wallet sector showed the highest growth, with DAU increasing by 125% during the incentive period, suggesting incentives strongly encouraged user participation here.

Conversely, sectors like DEX, Miscellaneous, Options, Liquidity/Leverage, Quest, Perpetual, and Options experienced declines, with a notable 60% drop in the Perpetual sector. This may suggest either a limited effect of incentives in these areas or that external factors impacted user activity. Sectors such as RWA, Gaming/Gambling, Wallet, Bridge, Oracles, Lending, LST, and Yield saw moderate growth, indicating that tailored incentive strategies could potentially enhance their engagement further.

Monthly Active Users (MAU)

1. Sector-wise Monthly Active Users (MAU)

This section provides an overview of user engagement across different sectors by analyzing changes in Monthly Active Users (MAU) over time. The analysis covers data from March 4, 2024, to September 2, 2024, including both pre-incentive and incentive periods. The sectors examined include Decentralized Exchanges (DEX), Yield, Lending, Perpetual, Options, Stables/Synthetics, Liquidity/Leverage, Real World Assets (RWA), Bridge, Liquidity Staking (LST), Gaming/Gambling, Wallet, Oracles, Quest, and Miscellaneous.



Visualization Link - Monthly Active Users (MAU)

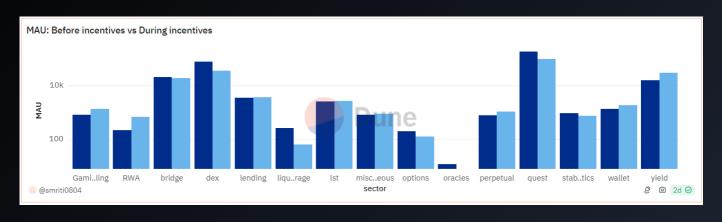
The bar chart illustrates trends and sectoral performance in MAU, showing user activity spikes, particularly around June 2024. These peaks suggest that sector-specific events or incentives may have boosted engagement.

The Quest and DEX sectors recorded the highest MAUs across the entire observation period. The Gaming/Gambling sector showed significant activity increases in June and August 2024, pointing to potential engagement peaks. Sectors like Bridge, Yield, and Perpetual had steady user engagement, though not as high as in Quest and DEX.

A key finding is the sharp rise in MAU across several sectors in June 2024, likely tied to specific incentive programs introduced then. While MAU offers valuable insight into overall engagement, it's less effective for day-to-day growth analysis compared to Daily Active Users (DAU), which remains a more precise metric for such purposes.

2. Monthly Active Users (MAU): Before Incentives vs. During Incentives

This section assesses the impact of incentives on MAU across sectors, comparing user activity levels before and during the incentive period. In the graph, light blue bars represent average MAU during the incentive phase, while dark blue bars represent MAU before incentives.



Visualization Link - Monthly Active Users (Before incentives vs During incentives)

The data highlights a 222% MAU increase in the RWA sector during the incentive period, the highest growth among all sectors. Similarly, the Yield sector saw an 88% rise, indicating that incentives had a substantial impact on user engagement in these areas. Other sectors, including Gaming/Gambling, LST, and Wallet, also showed increases in MAU, suggesting positive responses to the incentive program.

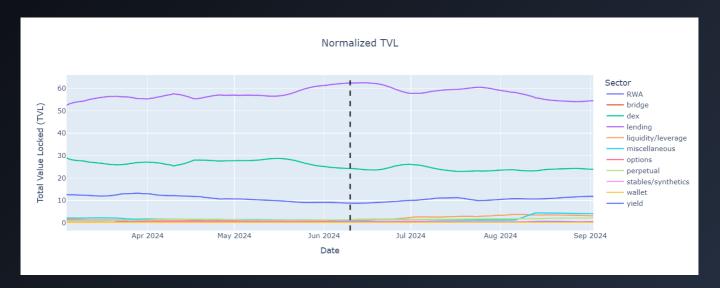
In contrast, sectors such as DEX, Quest, Oracles, Stables/Synthetics, Liquidity/Leverage, and Options experienced declines in MAU during the incentive period. The Liquidity/Leverage sector had the largest drop, with a 76% decrease, implying that incentives were less effective in this area, or that other factors may have negatively influenced user engagement.

Total Value Locked (TVL)

This section explores Total Value Locked (TVL) across various sectors using data from 54 protocols provided by DeFiLlama. The analysis focuses on sectoral TVL trends, examining the effects of incentives on value concentration and distribution across sectors such as Decentralized Exchanges (DEX), Bridge, Wallet, Yield, Perpetual, Liquidity/Leverage, Real World Assets (RWA), Options, Miscellaneous, Stables/Synthetics, and Lending.

1. Normalized TVL

The line graph displays normalized TVL across sectors from March 4, 2024, to September 2, 2024. Daily TVL data is smoothed using a 7-day moving average, with a black dotted line marking the incentive period's start on June 10, 2024, with an overlap buffer from June 3 to June 10.

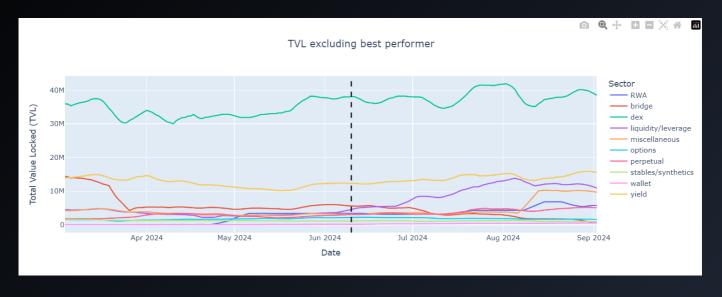


Visualization Link - Normalized daily TVL

The analysis shows that the Lending sector consistently held the highest TVL, indicating a strong concentration of value in this area. In contrast, sectors like Wallet, RWA, Miscellaneous, Perpetual, Stables/Synthetics, and Liquidity/Leverage consistently displayed lower TVL levels, suggesting that value is more centralized within the Lending sector.

2. Total Value Locked (TVL) Excluding Best Performer

To better understand TVL distribution outside of Lending, this graph focuses on sectors excluding Lending, which held the highest TVL. The analyzed sectors include DEX, Bridge, Wallet, Yield, Perpetual, Liquidity/Leverage, RWA, Options, Miscellaneous, and Stables/Synthetics.

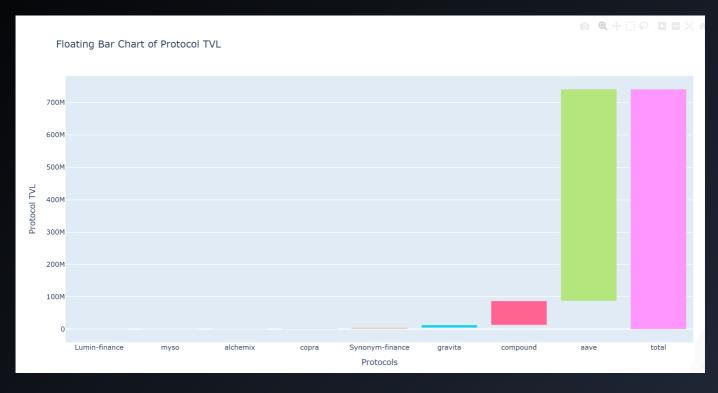


Visualization Link - Daily TVL excluding best performer

The graph captures sectoral TVL from March 4, 2024, to September 2, 2024, with a 7-day moving average for stability. By removing Lending, the trends in other sectors become clearer. Wallet saw a sharp 359% increase in TVL during the incentive period, while DEX experienced minimal change with a 2.8% rise, indicating varying levels of responsiveness to incentives.

3. Distribution of TVL within Lending Protocols

The following chart displays TVL distribution across specific protocols within the Lending sector, highlighting each protocol's contribution to the sector's total TVL. Protocols analyzed include Lumin Finance, Myso, Alchemix, Copra, Synonym Finance, Gravita, Compound, and Aave.

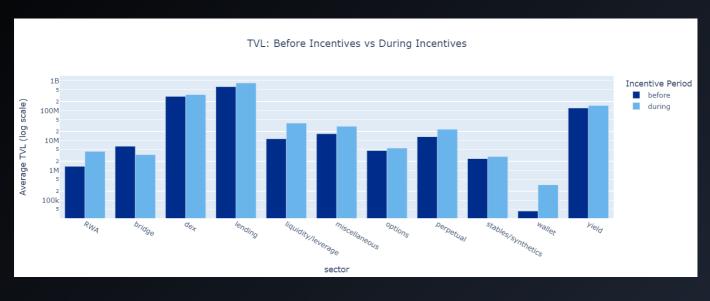


Visualization Link - Lending Protocol TVL

The bar graph arranges lending protocols by TVL, using a 7-day moving average from March 4, 2024, to September 2, 2024. Aave leads with the highest TVL at \$654.46 million, followed by Compound. In contrast, Lumin Finance holds the lowest TVL at \$54,671.54. Aave and Compound significantly contribute to the Lending sector's overall TVL, highlighting their central role within this sector.

4. Total Value Locked (TVL): Before Incentives vs During Incentives

This section examines how incentives affected TVL across sectors, comparing average TVL before and during the incentive phase. Light blue bars indicate TVL during the incentive period, while dark blue bars represent pre-incentive TVL.



Visualization Link - TVL (Before incentives vs During incentives)

The bar graph shows that the Lending sector experienced the largest TVL increase, from approximately \$650 million pre-incentives to over \$800 million during the incentive period, demonstrating a notable positive impact. The Stables/Synthetics sector saw the highest percentage increase, while DEX TVL grew from around \$300 million to just over \$340 million. The Yield sector also rose moderately, from about \$120 million to \$150 million.

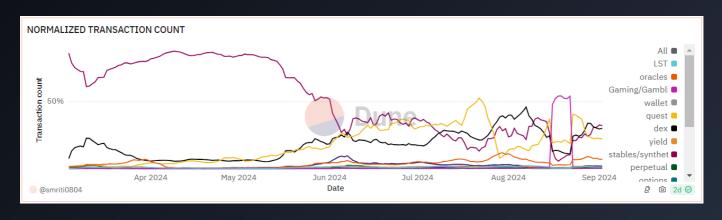
Minimal changes were observed in sectors like Miscellaneous, Wallet, Options, Perpetual, and RWA, indicating limited response to incentives. Notably, the Bridge sector's TVL declined during the incentive period, suggesting that incentives may not have effectively influenced this sector.

Transaction Count

This section evaluates transaction activity across various sectors, examining the effects of incentives on user engagement as measured by daily transaction counts. The analysis includes a normalized transaction count view, a focused look excluding top-performing sectors, and a comparison of transaction activity before and during the incentive period. Sectors analyzed include Decentralized Exchanges (DEX), Yield, Lending, Perpetual, Options, Stables/Synthetics, Liquidity/Leverage, Real World Assets (RWA), Bridge, Liquidity Staking (LST), Gaming/Gambling, Wallet, Oracles, Quest, and Miscellaneous.

1. Normalized Transaction Count

The line graph represents normalized transaction counts across sectors from March 4, 2024, to September 2, 2024. A 7-day moving average smooths the data. The normalization to percentage values allows for a clearer comparative view of transaction activity across sectors.

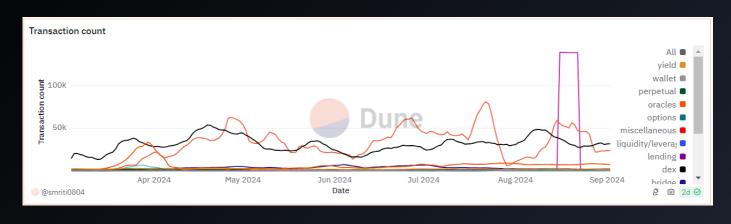


Visualization Link - Normalized transaction count

The data reveals that the Stables/Synthetics sector led in transaction count prior to the incentive period, while Quest showed a significant spike during the incentive phase, suggesting a notable increase in user engagement in response to incentives.

2. Transaction Count: Excluding the Best Performer

To highlight trends outside the top-performing sector, this graph excludes Quest, allowing for a clearer analysis of activity in other areas.

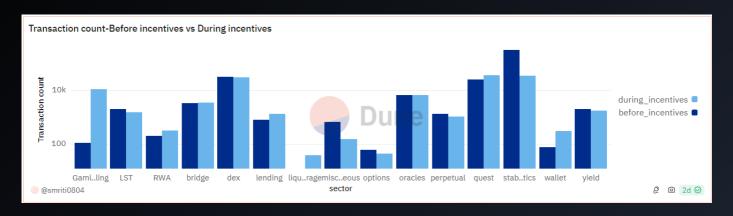


Visualization Link - Transaction count (Excluding best performer)

Excluding Quest provides a better understanding of trends in other sectors. Sectors such as Yield, Options, and RWA show low transaction counts, indicating minimal activity. Lending, Bridge, Liquidity/Leverage, LST, and Perpetual exhibit moderate transaction count with fluctuations over time. Despite the exclusion of Stables/Synthetics, Quest remains a peak performer, showing high transaction counts during the incentive period.

3. Transaction Count: Before Incentives vs During Incentives

This section compares the average transaction counts before and during the incentive period to assess the impact of incentives on transaction activity.



Visualization Link - Transaction count (Before incentives vs During incentives)

The bar graph demonstrates mixed effects of incentives on transaction counts. Notably, Gaming/Gambling, Wallet, Quest, Lending, Liquidity/Leverage, RWA, and Bridge saw substantial increases in transaction counts during the incentive period, with Gaming/Gambling experiencing the most significant growth. Bridge and DEX also reported modest increases in transaction counts.

Conversely, sectors such as Yield, Options, LST, DEX, Miscellaneous, Stables/Synthetics, and Perpetual faced decreases in transaction counts. Stables/Synthetics experienced the steepest decline, with an 89% drop, highlighting a varied response to incentives across market segments. This variance in activity suggests that while incentives positively impacted user engagement in some sectors, others may require alternative strategies to boost transaction volumes effectively.

Transaction Volume

This section provides an in-depth analysis of transaction volumes across protocols in various sectors, dividing the data into transaction volumes measured in USD and in ARB. To analyze transaction volumes, we reviewed data for two sets of protocols, divided based on the available data. Transaction volumes in USD were analyzed for one group of 40 protocols, while transaction volumes in ARB were analyzed for a different group of 40 protocols. The data sources for each set are based on availability from Dune. Notably, six protocols in total reported zero transaction volumes consistently across the observed period, indicating minimal or no activity in those cases.

1. Transaction Volume (in USD)

This graph analyzes the daily transaction volume (in USD) of protocols across different sectors. The sectors included are Decentralized Exchanges (DEX), Yield, Lending, Perpetual, Options, Stables/Synthetics, Liquidity/Leverage, Real World Assets (RWA), Bridge, and Miscellaneous.



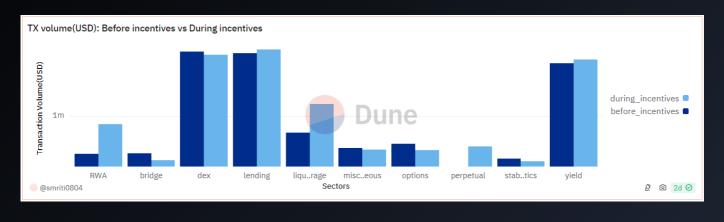
Visualization Link - Transaction Volume (in USD)

The line graph displays daily transaction volumes in USD across different sectors from March 3, 2024, to September 2, 2024, smoothed with a 7-day moving average.

The data reveals minimal transaction activity in sectors such as Bridge, Miscellaneous, Perpetual, Options, and RWA. In contrast, Lending and Yield sectors show moderate volumes with periodic peaks. Notably, the Lending sector experienced a significant volume increase during the incentive period, suggesting a favorable response to incentives within this sector.

2. Transaction Volume (in USD): Before Incentives vs. During Incentives

This graph compares the impact of incentives on transaction volumes across various sectors, showing changes from the pre-incentive period to the incentive period. The light blue bars represent the average transaction volume during the incentive period, while the dark blue bars represent the average volume before incentives.

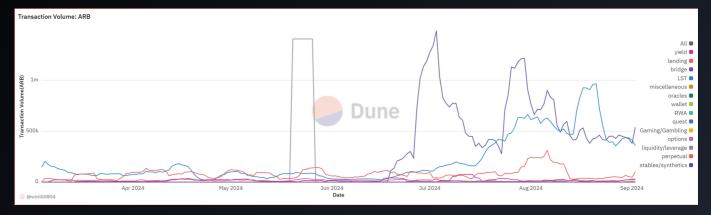


Visualization Link - Transaction Volume(in USD) (Before Incentives vs During Incentives)

The bar graph highlights the differences in average transaction volumes across sectors before and during the incentive period. Perpetual, Liquidity/Leverage, and RWA sectors showed substantial growth in transaction volumes, with RWA experiencing the largest increase at 529%. Yield and Lending sectors also saw noticeable gains. Conversely, DEX, Options, Bridge, Miscellaneous, and Stables/Synthetics sectors experienced declines, with the Bridge sector recording the most significant decrease at 33%. These variations indicate that incentives had a positive impact on some sectors but less effect on others.

3. Transaction Volume (in ARB)

This graph examines the daily transaction volume (in ARB) across different sectors. The sectors included are Yield, Lending, Perpetual, Options, Stables/Synthetics, Liquidity/Leverage, Real World Assets (RWA), Bridge, Liquidity Staking (LST), Gaming/Gambling, Wallet, Oracles, Quest, and Miscellaneous.



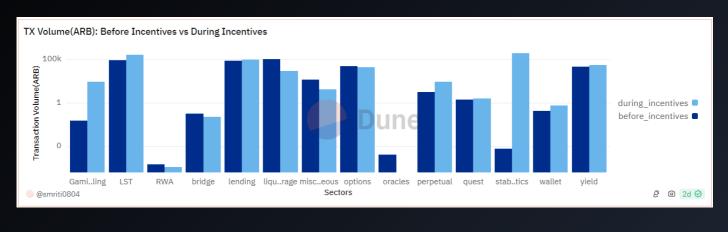
Visualization Link - Transaction Volume (in ARB)

The line graph shows daily transaction volumes in ARB across sectors, from March 3, 2024, to September 2, 2024, with a 7-day moving average.

This analysis reveals that sectors like Miscellaneous, Perpetual, Options, Gaming/Gambling, Quest, Bridge, and RWA maintained low transaction volumes throughout the observation period. In contrast, sectors such as LST and Lending showed moderate transaction activity with occasional spikes. The Stables/Synthetics sector recorded a peak in transaction volume during the incentive period, signifying increased user engagement.

4. Transaction Volume (in ARB): Before Incentives vs. During Incentives

This graph compares the changes in transaction volumes (in ARB) across sectors before and during the incentive period. The light blue bars represent average transaction volumes during the incentive period, while the dark blue bars represent volumes from the pre-incentive period.



Visualization Link - Transaction Volume(in ARB) (Before Incentives vs During Incentives)

The bar graph compares average transaction volumes in ARB across sectors, showing notable changes from the pre-incentive period to the incentive period. Sectors like Stables/Synthetics and Gaming/Gambling experienced significant growth during the incentive phase, while Perpetual, LST, Wallet, Yield, and Quest also recorded volume increases. However, sectors such as RWA, Options, Bridge, Miscellaneous, Liquidity/Leverage, and Oracles saw declines, with Oracles experiencing the most substantial decrease at 99%. This disparity suggests that while incentives effectively boosted activity in some areas, other sectors faced reduced transaction engagement during the incentive period.

Retention Rate

This table presents the retention rates for various sectors within a protocol. The "Sector" column lists the different sectors, while the "Retention Percentage" column displays the percentage of users or transactions retained during the incentive period. Retention here refers to the percentage of users active before the incentive period who remained active during the incentive period.

protocols retention rate		
sector	retention_rate	
Stables/Synthetics	4%	
Perpetual	20%	
Wallet	9.3%	
RWA	35.6%	
Bridge	28.4%	
Quest	24.1%	
yield	11.2%	
Lending	30%	
Oracles	38.1%	
Liquidity/Leverage	33.1%	
dex	22.5%	
Option	42.7%	
LST	16%	
Miscellaneous	15.9%	
Gaming/Gambling	2.7%	

Visualization Link - Retention rate

- Options demonstrates the highest retention rate at 42.7%, highlighting strong sustained engagement during incentives.
- Oracles follows with a retention rate of 38.1%, and Real World Assets (RWA) holds a rate of 35.6%.
- Yield shows moderate retention at 11.2%.
- Decentralized Exchanges (DEX) and Perpetual sectors exhibit similar retention rates at 22.5% and 20%, respectively.
- Quest retains 24.1% of users, indicating reasonable engagement.
- Gaming/Gambling, Wallet, and Stables/Synthetics have the lowest retention rates, at 2.7%, 9.3%, and 4%, respectively, indicating that incentives were less effective at retaining users in these sectors.

1. Types of Incentives

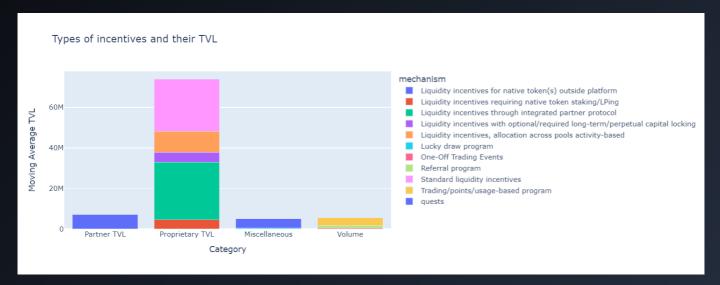
Incentive mechanisms in decentralized finance (DeFi) ecosystems aim to increase user participation, liquidity provision, and platform engagement. Common types include:

A. **Proprietary TVL (Total Value Locked):** Incentives generated from the platform's own native assets. These include liquidity incentives involving native tokens for staking or locking value within the platform.

B. Partner TVL: Incentives linked to partner protocols. These are designed to encourage liquidity provision or staking that benefits both the platform and its partners.

C. Volume Incentives: Incentives tied to trading volume on the platform, are designed to reward active trading and boost transaction activity.

D. Miscellaneous Incentives: Other incentives that don't fall into the above categories, often involving unique or specific mechanisms to attract users.



2. Types of Incentives and Their TVL

Visualization Link - Types of incentives

This stacked bar graph illustrates the impact of different types of incentives on TVL across multiple categories:

- Proprietary TVL has the highest value, indicating that internal platform incentives are the most effective at attracting and retaining locked value.
- Partner TVL is lower, suggesting that although partnerships contribute value, they do not generate as much locked liquidity as proprietary incentives.
- Volume and Miscellaneous Incentives show relatively low contributions to TVL, signifying that these mechanisms are less effective at securing large amounts of value
- The diversity of strategies within Proprietary TVL explains its dominance, as it combines several effective approaches to drive value locking.

3. Distribution of TVL Across Types of Incentives



Visualization Link - Distribution of TVL across different types of incentives

The following donut chart illustrates the distribution of Total Value Locked (TVL) by incentive type:

- Proprietary TVL (in blue) dominates, accounting for 80.7% of the total TVL.
- Partner TVL (in red) contributes 7.79% of the total TVL.
- Volume Incentives (in green) make up 5.97%.
- Miscellaneous Incentives (in purple) represent 5.53%.

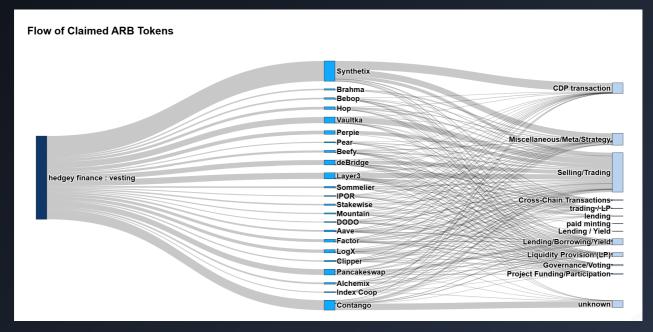
This distribution underscores the overwhelming effectiveness of Proprietary TVL in capturing and retaining locked value, likely due to its diverse strategies and strong incentives.

User Actions with ARB Rewards and Unintended Incentivized Actions

User Actions with ARB Rewards

The analysis in this section is based on data from 74 protocols till 2nd September 2024, with certain exceptions where ARB distribution data could not be traced. These exceptions may slightly impact the overall trends observed, particularly in cases where the ARB rewards could not be accurately mapped to specific user or transactional activities. For more detailed insights into these exceptions and how they might influence the overall findings, please refer to the accompanying <u>document</u>, which provides further explanation and context regarding these anomalies in the dataset.

This section provides a detailed analysis of user actions after receiving a total of 13,034,566.53 ARB rewards, excluding the Merkle distributor amount, and 16,149,220.38 ARB rewards, including the Merkle distributor. By categorizing these actions, we can understand user behavior and its impact on the broader ARB ecosystem.



1. Flow of Claimed ARB Rewards

Visualization Link - Flow of claimed ARB rewards

The flow of ARB rewards showcases various strategies users employ to optimize their rewards:

- Diverse Utilization Strategies: Users manage their ARB rewards through a variety of activities such as selling/trading, lending/borrowing/yield strategies, liquidity provision, governance/voting participation, and CDP transaction.
- Spread of Token Utilization: ARB tokens are being utilized in different ways across the ecosystem, reflecting the diverse strategies that users deploy to maximize their rewards.
- Cross-Chain Activities: Many users are participating in cross-chain transactions to enhance their reward utilization.
- Governance and Project Involvement: A notable percentage of users are using their rewards for governance participation and to support project development.

This visual representation highlights the extensive approaches users take with their ARB tokens, showcasing the varied impact on the ecosystem.

2. Top Actions Taken by Reward Recipients

- Selling: The most common action, with 50.7% of ARB tokens sold or traded for liquidity, indicating a preference for converting rewards into immediate value.
- Miscellaneous/Meta/Strategy: 11.3% of the ARB tokens are spent on various other activities, reflecting flexible user strategies beyond the primary categories.
- Lending/Borrowing/Yield: 8.19% of ARB rewards are used for yield-generating activities, suggesting that many users prefer to invest their rewards to generate returns.
- CDP Transaction: 7.97% of the total ARB rewards are allocated towards CDP Transactions.

op Actions Taken by ARB Reward Recipients
Selling/Trading
Reward Distributors Miscellaneous/Meta/Strategy
unknown
Lending/Borrowing/Yield
CDP transaction
Liquidity Provision (LP)
Project Funding/Participation
Cross-Chain Transactions
Governance/Voting
trading / LP
Lending / Yield — paid minting —

Visualization Link - Top actions taken by reward recipients

This diagram gives a detailed breakdown of how reward recipients are utilizing their ARB tokens:

- Distribution of Actions: It maps out the major pathways users take after claiming rewards, such as selling/trading, Miscellaneous/Meta/Strategy, lending/borrowing, and CDP Transactions.
- User Flexibility: Users show flexibility in their reward strategies, applying ARB tokens towards different objectives.
- Miscellaneous Engagement: A significant portion of ARB tokens is used for miscellaneous transactions, showcasing alternative ways recipients engage with the ecosystem.
- Core Use Cases: The visualization underscores the significance of selling and trading as the most prominent use cases for ARB rewards, while also highlighting the relevance of other financial strategies in reward utilization.

The visual breakdown underlines the dominant trend of selling ARB rewards while highlighting the relevance of liquidity provision and financial strategies like lending and borrowing.

3. Top Protocols Interacted by Users After Claiming ARB Rewards

- <u>Paraswap</u>: The most frequently interacted protocol by users post-ARB rewards claim.
- <u>Uniswap</u>, <u>Gnosis</u>, <u>LiFi</u>, <u>Synthetix</u>: Popular choices for reward spending and other financial activities.</u>

Top Protocols Interacted by Users After Claiming ARB Rewards	
	Paraswap
	Uniswap
Reward Distributors	Gnosis
	Lifi
	Synthetix
	Sushiswap
	Aave
	Beefy
	Ramses Stryke
	Deltaprime
	Pancakeswap 📖

Visualization Link - Top protocols interacted with by users after claiming ARB rewards

This Sankey diagram visualizes and ranks the top protocols based on user engagement after claiming ARB rewards. Key observations:

- Protocol Popularity: <u>Paraswap</u> and <u>Uniswap</u> emerge as the most preferred platforms for managing ARB rewards, reflecting user confidence in these well-established DeFi platforms.
- Comparative Analysis: The diagram ranks the top protocols by interaction, revealing user preferences and behavioral trends post-claim.
- Ecosystem Insights: The visualization highlights the broader protocol landscape for ARB reward utilization, identifying which platforms dominate user engagement.

This analysis provides a clear snapshot of the most utilized protocols in the ARB ecosystem.

4. Actions Taken by Reward Recipients Across Different Protocol Cohorts

otocol Type Cohort	Act
Synthetics	
-Wallet	
-Liquidity-	
-Bond-service	
-Oracle	CDP transaction
LST	
Bridge	
Yield	
-Options-	Miscellaneous/Meta/Strategy
-Gambling	
-Trading	trading-/-LF
- Irading -LRT	
-Derivatives	
-RWA-	Selling/Trading
	Sening naung
LQuest Platform	
Lending	
	Lending / Yield
Leveraged Farming	Cross-Chain=Transaction
	lending
-Gaming-	Liquidity Provision (LP
Stables	paid minting
Perpetual	Governance/Voting
In olyottal	
	Lending/Borrowing/Yield
DEX	Project Funding/Participation
	Project Funding/Farticipation
-Index	unknowr

Visualization Link - Actions taken by reward recipients across different protocol cohorts

This diagram illustrates the actions taken by ARB reward recipients across distinct protocol cohorts, revealing key behavioral trends:

- Yield, Leveraged Farming and Perpetual Cohorts: These recipients predominantly engage in selling/trading their ARB tokens, indicating a strong preference for immediate liquidity rather than reinvestment.
- Synthetics: These recipients predominantly engage in CDP transactions, indicating a focus on leveraging collateral to mint or manage synthetic assets, rather than seeking immediate liquidity or trading.
- Trading Cohort: The cohort exhibits a split between selling/trading and liquidity provision, showing dual tendencies for liquidation and reinvestment.
- Quests Cohorts: These recipients are the only group engaged in paid minting, indicating a willingness to invest in the minting process for the benefits associated with the quests, distinguishing them from other cohorts.

This visualization offers a detailed look at how different protocol cohorts prioritize actions, from liquidity generation to speculative ventures.

5. Protocols Interacted by Reward Recipients Across Different Protocol Cohorts

This section examines user interaction with various protocols based on their protocol cohort after claiming ARB rewards.

otocols Interacted by Reward Recipients Across Different Protocol Cohorts	
Protocol Type Cohort	Protocol Interacted
Synthetics	
Leveraged Farming	
Stables	Synthetix
LST	Deltaprime
Yield	Gnosis
	Paraswap
Oracle	
RWA	Beefy
DEX	Ramses
	Clipper
-Options-	Aave
Lending	
Bridge	Uniswap
-Liquidity	
- Elquidity Derivatives	Stryke
-Wallet	Sushiswap
Gaming	Lifi
Perpetual	Pancakeswap
-ALM	
-Bond service	
- Trading	
Gambling	
Quest Platform	

Visualization Link - Protocols interacted by reward recipients across different protocol cohorts

The Sankey diagram showcases the flow of interactions between Protocol Type Cohorts (left) and the Protocols Interacted With (right):

- Leveraged Farming Cohort: Shows the highest interaction with <u>Paraswap</u>, highlighting a preference for decentralized exchanges and aggregation platforms.
- **Perpetual Cohort:** Users in this cohort show significant engagement with LiFi, indicating a strong preference for utilizing liquidity and cross-chain swapping solutions to enhance their trading strategies and overall DeFi experience.
- Yield Cohorts: These cohorts prefer interacting with Paraswap, indicating a strong inclination towards utilizing this platform for optimizing their yield farming strategies and accessing competitive swapping rates.
- Synthetics Cohort: These recipients notably engage with Synthetix, indicating a strong focus on utilizing synthetic assets and their associated platforms for trading or investment opportunities.

This analysis demonstrates how users from different cohorts interact with various protocols, highlighting protocol preferences for ARB reward utilization.

Protocol Reinvestment Patterns

- Users show a tendency to reinvest ARB rewards back into the same protocol they received them from. This behavior is particularly prominent in platforms like <u>Buffer</u> <u>Finance</u>, <u>Clipper</u>, <u>Steadefi</u>, and <u>Synonym Finance</u>.
- Deltaprime, DoG and SushiSwap emerge as secondary preferences for reinvestment, while Bebop and DODO are third-choice reinvestment platforms based on the transaction count and token reinvestment volume.

Unintended Incentivized Actions

This section explores unintended user behaviors following ARB reward distributions that deviate from the program's intended goals. These actions can reduce the effectiveness of ARB rewards and have broader implications for the ecosystem. The focus is on three specific types of unintended behavior:

1. Circular Transactions

Circular transactions undermine the goals of ARB reward programs by creating loops that render the rewards ineffective. Two types of circular transactions were identified:

1. Direct Circular Transactions: Rewards are sent directly back to the original distributing address without any intermediate use or interaction. This negates the intended utility of the rewards.

2. Indirect Circular Transactions: ARB rewards pass through one or more intermediary addresses before eventually being sent back to the distributing address. This process may be used to mask the circular nature of the transactions but still results in the rewards being ineffective.

Impact: Both types of circular transactions bypass the goal of fostering user activity and engagement within the ecosystem. The rewards end up being recycled, which undermines the program's objectives of driving long-term growth and decentralized participation.

2. Immediate Sell-Offs:

Immediate Sell-Offs: This occurs when recipients sell their ARB tokens shortly after receiving them. This behavior has the following negative consequences:

1. Downward Price Pressure: A large number of tokens being sold immediately after distribution drives down the token price, which negatively impacts market stability.

2. Weakening Long-Term Engagement: Immediate sell-offs reduce the potential for deeper ecosystem engagement, as users are prioritizing liquidity over participation in governance, staking, or other DeFi activities.

Impact: This behavior diminishes the value of **ARB** tokens in the market and reduces their effectiveness in building long-term commitment to the ecosystem.

3. Rewards Held Without Action:

Some protocols have distributed ARB tokens to contract addresses that hold the tokens without any further interaction or utilization. This behavior leads to several inefficiencies:

1. Inefficiency: ARB tokens are locked in inactive contract addresses, preventing their circulation within the ecosystem.

Impact: Rewards that remain inactive undermine the objective of stimulating protocol activity and fostering ecosystem growth.

Proposed Adjustments to Mitigate Unintended Behaviors

To optimize the effectiveness of ARB reward programs, specific adjustments are proposed to address these unintended behaviors:

1. Circular Transactions

Address Blacklisting: Implement address blacklisting within the reward distribution system to prevent rewards from being sent back to the original distributing address. By creating a blacklist of addresses that restrict rewards from returning to their source, this measure will effectively curb circular transactions.

Goal: Limit the ability of users to engage in direct or indirect circular transactions, ensuring that rewards are used to foster activity rather than being recycled.

2. Immediate Sell-Offs

Incentivized Holding Periods: Introduce a holding period bonus system that rewards users who hold their ARB tokens for a set period. Users who retain their tokens beyond the defined period will receive additional incentives, such as bonus tokens or enhanced yields.

Goal: Discourage immediate sell-offs by encouraging users to hold their rewards for a longer period, thus promoting sustained engagement and reducing selling pressure on the market.

3. Rewards Held Without Action

Penalty for Inactive Rewards: Implement a penalty system for contracts or addresses that hold ARB rewards without any activity over a defined period. If the rewards remain unused, a small percentage will be gradually deducted from the balance, incentivizing active use of the tokens.

Goal: Encourage protocols to actively utilize rewards for governance, liquidity provision, or other ecosystem activities, reducing the accumulation of inactive tokens.

These proposed adjustments offer practical strategies to mitigate unintended incentivized actions, ensuring that ARB rewards effectively contribute to the health and growth of the ecosystem. By addressing circular transactions, immediate sell-offs, and inactive rewards, these measures aim to optimize the outcomes of reward distribution programs and strengthen user engagement.

Funding Mechanisms and Dollar-Cost Average of Incentives & High-Velocity Incentive Systems and Total Value Returned (TVR)

Funding Mechanism /ARB Distribution Mechanism

To understand the effects of the Long-Term Incentive Pilot Program (LTIPP), we manually reviewed all protocols that received ARB tokens during the incentive period. Our review identified 13 different methods used by these protocols to distribute ARB tokens, each employing a unique strategy to attract and retain users and liquidity. We focused on 72 protocols based on the availability of data regarding ARB incentive mechanisms, which we manually checked on the <u>Arbitrum Grant (ARBGrant)</u> platform. For clarity, we grouped the 13 distribution mechanisms into four main categories:

1. Proprietary TVL

This category includes strategies designed to boost a protocol's Total Value Locked (TVL) through internal incentives, directly increasing liquidity by rewarding user's capital commitment. The methods under Proprietary TVL are:

- 1. Standard Liquidity Incentives
- 2. Liquidity Incentives with Allocation Across Pools
- 3. Activity-Based
- 4. Long-Term/Perpetual Capital Locking
- 5. Integrated Partner Protocol
- 6. Native Token Staking/Liquidity Providing

2. Partner TVL

This category focuses on enhancing TVL through collaborations with external platforms or tokens. This incentives are designed to attract liquidity from outside the protocol, often leveraging external assets or platforms that complement the protocol's ecosystem. The mechanism included:

1. Liquidity Incentives for Native Token(s) Outside Platform

3. Volume

This category comprises mechanisms aimed at boosting trading volume or activity within a protocol. These strategies encourage frequent user engagement by offering rewards based on trading activity, usage, or participation in specific events. The mechanisms included are:

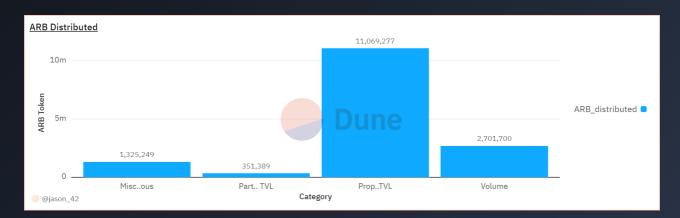
- 1. Fee Rebates
- 2. Trading/Points/Usage-Based Programs
- 3. One-Off Trading Events
- 4. Referral Programs

4. Miscellaneous

This category includes mechanisms that don't fit neatly into the other categories but are crucial for incentivizing user participation and protocol growth. The mechanisms included are:

- 1. Mixture of Borrowing and Lending Incentives
- 2. Quests
- 3. Lucky Draw Programs

ARB Distribution Summary



Visualization Link - Total ARB distributed

During the incentive period, a total of 15,447,615 ARB tokens were allocated, with distribution across the four categories shown in the bar chart. Here's the breakdown:

1.Proprietary TVL: This category received the largest allocation of ARB tokens, totaling 11,069,277 ARB, representing 71.66% of the overall distribution. The large allocation highlights a focus on enhancing liquidity directly within the protocols through mechanisms such as standard liquidity incentives, long-term capital locking, and native token staking. The aim was to enhance the Total Value Locked (TVL) within the ecosystem, ensuring sustained protocol liquidity.

2. Volume: Volume incentives were allocated 2,701,700 ARB tokens, comprising 17.49% of the total distribution. These tokens were utilized to boost trading activity, user engagement, and transaction volume. Incentives in this category included fee rebates, trading programs, and referral schemes, all aimed at increasing user participation and driving protocol usage.

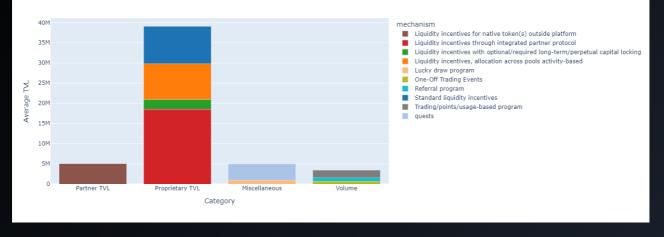
3. Miscellaneous: This category, which includes a mix of unique incentive mechanisms such as borrowing and lending incentives, quests, and lucky draw programs, was allocated 1,325,249 ARB tokens, representing 8.58% of the total distribution. This allocation reflects a targeted approach to engaging specific user behaviors and niche activities within the ecosystem, offering a diversified strategy for ecosystem growth.

4. Partner TVL: This category received 351,389 ARB tokens (2.27% of the total), distributed as liquidity incentives for external platforms. These incentives sought to attract liquidity from outside the ecosystem, strengthening the overall network by incorporating external assets.

Total Value Locked (TVL)

This section provides an analysis of the Total Value Locked (TVL) across four main categories during the incentive period from June 3, 2024, to September 2, 2024. These insights reveal how each strategy influenced liquidity attraction within the ecosystem.

Average TVL of Categories with Different Mechanisms



Visualization Link - TVL across the four categories

1. Proprietary TVL:

- Standard Liquidity Incentives saw an average TVL of \$9.26 million (17.64%), indicating strong results from internal strategies focused on capital retention within protocols.
- Liquidity Incentives with Allocation Across Pools Activity-Based added \$8.82 million (16.80%), further supporting the effectiveness of internal incentives for enhancing liquidity.
- Long-term/Perpetual Capital Locking added \$2.35 million (3.7%), reflecting a commitment to strategies that reward users for locking their capital over extended periods.

Total Proprietary TVL: \$39.05 million (74.4%). Proprietary TVL strategies proved most effective in attracting and retaining liquidity, significantly surpassing other categories and sustaining ecosystem capital.

2. Partner TVL

• Liquidity Incentives for Native Tokens Outside the Platform contributed \$5.04 million (9.61%), highlighting the value of using external assets to support ecosystem growth.

Overall Total Partner TVL: \$5.04 million (9.61%). These strategies played a supporting role but were less dominant compared to Proprietary TVL.

3. Volume

• **Trading/Points/Usage-Based Programs** and **Referral Programs** collectively contributed \$3.39 million (6.5%), aiming to stimulate user activity and transactions. These incentives showed moderate success in driving liquidity, but their main impact was on trading volume rather than long-term liquidity retention.

4. Miscellaneous

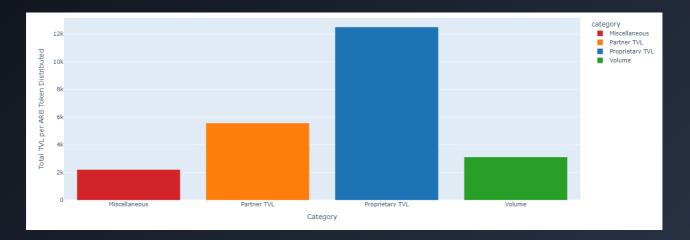
• Quests (\$4.06 million, 7.74%) and Lucky Draw Programs (\$939,000, 1.79%) made smaller yet meaningful contributions to the overall liquidity pool.

Total Miscellaneous TVL: \$5 million (9.5%). These strategies engaged users through innovative methods, attracting liquidity with diverse approaches.

The stacked bar graph visualization emphasizes the dominance of Proprietary TVL strategies in acquiring liquidity, with Partner TVL following. Although the Volume and Miscellaneous categories played smaller roles in absolute terms, they were crucial in boosting user engagement and driving ecosystem activity throughout the incentive period.

TVL per ARB Token Distributed

This metric assesses the efficiency of different incentive strategies in converting distributed ARB tokens into Total Value Locked (TVL). It is calculated by dividing the total TVL generated by the total number of ARB tokens distributed, effectively illustrating the amount of TVL produced for each ARB token distributed.



Visualization Link - TVL per ARB token distributed

The bar chart below visually represents the TVL generated per ARB token distributed, providing insights into the effectiveness of various incentive strategies:

1. Proprietary TVL

• \$12,509.95 TVL per ARB Token Distributed. This category stands out as the most efficient, indicating that Proprietary TVL strategies are highly effective in leveraging ARB tokens to maximize liquidity within the protocols. The significant TVL generated per token underscores the strength of internal incentives in driving substantial liquidity contributions.

2. Volume

• \$3,115.297 TVL per ARB Token Distributed. While not as high as Proprietary TVL, Volume strategies still demonstrate a strong capacity to convert ARB tokens into meaningful liquidity. These strategies effectively drive user transactions and engagement, reflecting their success in fostering active participation and transaction volumes within the ecosystem.

3. Partner TVL

• \$5,568.52 TVL per ARB Token Distributed. Partner TVL strategies effectively attract liquidity through collaborations with external platforms. This category shows a solid conversion rate of ARB tokens into TVL, highlighting the importance of external partnerships in enhancing the overall liquidity and robustness of the ecosystem.

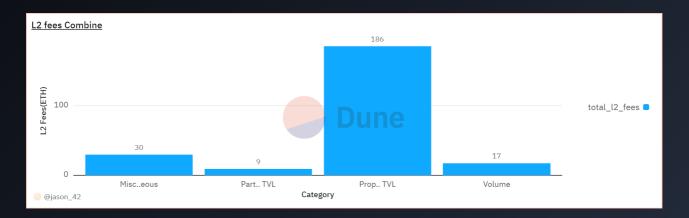
4. Miscellaneous

• \$2,210.31 TVL per ARB Token Distributed. Although this category has the lowest value among the four, it still makes a meaningful contribution to the ecosystem. Miscellaneous incentives employ diverse mechanisms that serve various objectives beyond just liquidity maximization, such as engaging users through unique and targeted strategies.

This metric highlights the effectiveness of each category in translating ARB token distribution into liquidity. Proprietary TVL strategies lead in efficiency, showcasing the highest effectiveness in converting ARB tokens into TVL. Volume-based incentives and Partner TVL follow, demonstrating their ability to generate significant liquidity. Despite being less efficient in generating TVL, Miscellaneous incentives add value by engaging users through innovative and varied approaches, thereby supporting the ecosystem's overall growth and sustainability.

L2 Gas Fees Breakdown by Incentive Strategy

This section analyzes total Layer 2 (L2) gas fees incurred across four categories—Proprietary TVL, Partner TVL, Volume, and Miscellaneous—highlighting the transaction costs associated with different incentive strategies on the Arbitrum network. Gas fees, measured in ETH, offer insights into the expenses tied to on-chain activities during the incentive period.



Visualization Link - L2 gas fees breakdown by incentive strategy

The visualization underscores notable differences in gas fees across the categories. Proprietary TVL stands out as the primary contributor to gas costs due to its extensive on-chain interactions, while Partner TVL reflects the smallest gas expenditure, highlighting its minimal on-chain activity. This breakdown provides valuable insights into the cost implications of various incentive strategies within the Arbitrum ecosystem.

1. Proprietary TVL

• 185.97 ETH in Gas Fees (78.71% of total L2 gas costs). This category incurs the highest gas fees, indicating significant transaction activity driven by liquidity incentives. The high costs reflect extensive on-chain engagement as users interact with protocols to optimize liquidity through internal mechanisms.

2. Volume

• 17.48 ETH in Gas Fees (7.40% of total). This figure highlights the impact of trading and usage-based incentives, which drive transaction activities within the ecosystem. While moderate, these gas costs indicate active user participation spurred by incentives tied to trading volume and user engagement.

3. Partner TVL:

• 9.12 ETH in Gas Fees (3.86% of total). Representing the lowest gas expenditure, this category reflects the relatively low level of on-chain activity linked to external partnerships. The smaller gas costs suggest fewer on-chain interactions in this category, aligning with its focus on liquidity from outside sources.

4. Miscellaneous

• 29.80 ETH in Gas Fees (12.62% of total). Though moderate in comparison, these costs represent the expenses associated with a variety of unique incentive mechanisms. These miscellaneous actions reflect diverse activities outside the primary categories, contributing to ecosystem engagement at a lower transaction cost.

L2 Gas Fees per ARB Token Distributed

This analysis evaluates the gas costs incurred per ARB token distributed across four categories: Proprietary TVL, Miscellaneous, Partner TVL, and Volume. This metric helps assess each strategy's efficiency in managing transaction costs relative to the distributed ARB tokens.



Visualization Link - L2 fees per ARB token distributed

The bar chart clearly illustrates the differences in gas costs across categories, with Partner TVL leading in expenses while Volume proves to be the most cost-efficient. This analysis highlights the trade-offs between driving liquidity and effectively managing gas costs.

1. Proprietary TVL

• Gas Cost per ARB Token: 0.00001680 ETH. Proprietary TVL incurs the highest gas costs per ARB token. This is due to the extensive and complex on-chain operations involved in driving liquidity, reflecting the intensity of on-chain engagements.

2. Partner TVL

3. Volume

• Gas Cost per ARB Token: 0.00000647 ETH. Volume is the most cost-efficient category in terms of gas expenditure per ARB token. This efficiency is due to the emphasis on transaction volume and trading activities, which involve less complex on-chain processes, effectively minimizing gas expenses.

4. Volume

• Gas Cost per ARB Token: 0000023495 HTTH. Thertalatively high gasterase parstolkerbitathis oftegare freilents, the netwing effortaneite maturol blocksid ninebativgenerally nisopair such was directs and hen gage inventes program by The section entries on chain interactions, resulting in higher transaction costs.

Unique Users Engaged by Category

This section examines user engagement across the four main categories: Proprietary TVL, Miscellaneous, Volume, and Partner TVL. The insights provide a comprehensive look at how each incentive strategy attracts unique users within the Arbitrum ecosystem.

<u>Unique Users</u>			1,204,651		
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0		32,885		69,740	_
e @jason_42	Miscsers	Partsers Catego	Propsers pry	Volusers	

Visualization Link - Unique users engaged by category

The bar chart visualization clearly shows that Proprietary TVL leads significantly in user engagement, followed by Miscellaneous, Volume, and Partner TVL. This distribution reflects the varying levels of user interest and interaction generated by each incentive strategy.

1. Proprietary TVL

• This category attracted 1,204,651 unique users, accounting for approximately 81.83% of the total unique users across all categories. This reflects a strong interest in protocols utilizing proprietary TVL mechanisms, as users are drawn to the benefits of enhanced liquidity.

2. Volume

• This category engaged 69,740 unique users, which is about 4.74% of the total. This moderate level of engagement reflects the impact of trading and usage-based incentive programs on user participation.

3. Partner TVL

• Recording the lowest user engagement, this category attracted 32,885 unique users, or 2.23% of the total. The lower participation may be linked to the category's focus on external tokens and partnerships, which might not resonate as directly with users in the Arbitrum ecosystem.

4. Miscellaneous

• With 189,868 unique users, this category represents 12.90% of total user engagement. This indicates substantial interaction with specialized incentive mechanisms, including quests, lending incentives, and lucky draw programs.

Unique Users Engaged per ARB Token Distributed

This section analyzes how effectively different categories convert the distribution of ARB tokens into unique user engagement. The insights gathered from this metric reveal the efficiency of various incentive strategies across four categories: Miscellaneous, Proprietary TVL, Partner TVL, and Volume.



Visualization Link - Unique users per ARB token distributed

The chart clearly shows that Miscellaneous incentives were the most effective at driving user engagement relative to ARB token distribution, followed by Proprietary TVL, Partner TVL, and Volume. This analysis highlights the differing effectiveness of various incentive strategies in fostering user participation.

1. Miscellaneous

• This category leads with 0.1433 unique users per ARB token distributed, indicating that Miscellaneous incentives effectively convert ARB tokens into active user participation.

2. Proprietary TVL

• With 0.1088 unique users per ARB token distributed, this category strikes a solid balance between user engagement and token distribution. Proprietary TVL mechanisms have proven successful in attracting a significant number of users.

3. Partner TVL

• With 0.0936 unique users per ARB token distributed, Partner TVL shows reasonable efficiency in engaging users relative to the tokens distributed, despite being lower than the other categories.

4. Volume

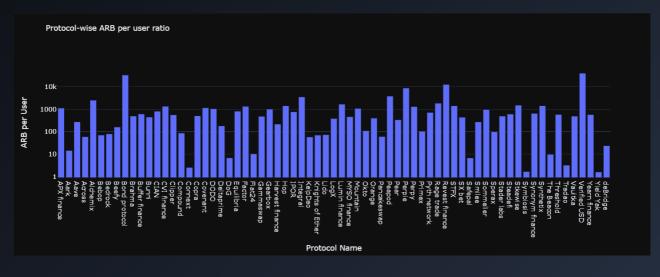
• Recording the lowest efficiency, Volume has 0.0258 unique users per ARB token distributed. This suggests challenges in converting ARB tokens into user engagement, possibly due to the specific nature of its incentives.

Reward/User Ratio and Market Demand

This section of the analysis comprises a review of ARB distribution for 69 protocols up to September 2, 2024 and further in depth analysis of transactional activity for 61 protocols.

Protocol-wise ARB (Reward) per User Ratio

In this analysis, we examined ARB token distributions across 69 different protocols participating in the incentive program. The ARB/user ratio for each protocol is calculated by dividing the total amount of ARB tokens distributed by the total number of unique users engaged with each protocol. This data spans the active incentive period from June 3, 2024, to September 2, 2024.



Visualization Link - ARB per user ratio

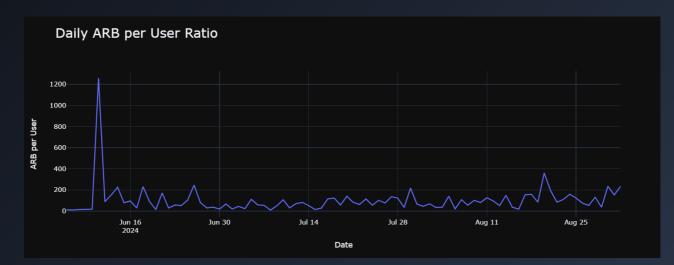
The bar chart illustrates notable differences in the ARB/User ratios across the protocols:

- Verified USD has the highest ARB/user ratio, with an impressive 39.6k ARB per user. This indicates that rewards were concentrated among a smaller user base, with each user receiving a substantial portion of rewards.
- Symbiosis, Connext and Yield Yak, on the other hand, have the lowest ARB/user ratios, reflecting a broader and more equitable distribution of rewards across a larger user base or a lower total reward amount.

These variations in ARB/User ratios provide valuable insights into the effectiveness and inclusivity of each protocol's incentive program. Understanding these dynamics can assist stakeholders in assessing whether reward structures align with their growth objectives and community engagement strategies.

Changes in ARB/ User ratio over time

A line graph has been plotted to visualize the changes in the ARB/user ratio over time for 64 different protocols participating in the incentive program. This graph tracks the ARB/user ratio from June 3, 2024, to September 2, 2024, highlighting key trends and fluctuations in reward distribution per user throughout the period. The visualization assists in identifying inflection points where user engagement and reward distribution dynamics shift, providing insights into how user behavior responds to varying levels of incentives.



Visualization Link - Changes in ARB / user ratio over time

The graph reveals notable trends in the ARB/user ratio over time, highlighting significant inflection points. On June 11 there was a visible increase in the ARB/user ratio, marking an upward trend that extends into early August. This shift indicates a move toward higher reward concentration per user or an increase in user engagement levels. By August 20, the graph shows a temporary spike in the ARB/user ratio followed by a decline. This suggests a surge in reward allocation that may have influenced user engagement or activity patterns during this period. The inflection points likely result from increased reward amounts or a change in distribution strategy, possibly aimed at boosting user engagement as the incentive program nears its conclusion.

DAU vs. Daily ARB Rewards

A graph has been created to illustrate the relationship between Daily Active Users (DAU) and Daily ARB distributed over time, providing insights into how user engagement responds to changes in ARB rewards. The red line represents the DAU, while the blue line represents the Daily ARB distributed to users. This visualization serves as a valuable tool for understanding the dynamics between user activity and reward distribution, helping to identify key inflection points where changes in the reward strategy directly affect user behavior.



Visualization Link - DAU vs daily ARB rewards

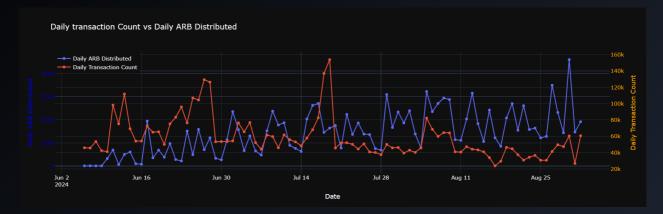
The graph shows the relationship between Daily Active Users (DAU) and Daily ARB Distributed from early June to 2nd September 2024. Initially, Daily ARB distributed and DAU both fluctuate moderately, with occasional spikes in user engagement corresponding to increases in ARB distributed. Around mid-June, there is a notable rise in both DAU and ARB distribution, suggesting a positive relationship between the two metrics, as higher ARB distributions appear to draw more active users.

In July, the correlation becomes less consistent. Despite several peaks in Daily ARB distributed, DAU does not always respond with a corresponding rise. For example, a substantial peak in ARB distributed around late July fails to yield a proportional increase in DAU, indicating other factors may be influencing user activity.

In August, we observe periodic spikes in ARB distributed, but DAU only shows minor increases. Towards the end of August, both ARB distributed and DAU saw a moderate rise. This pattern implies that while increases in ARB rewards can drive short-term boosts in user activity, they are insufficient for sustaining long-term engagement. Consistent user participation may require additional incentives beyond periodic reward increases. Understanding these dynamics is essential for developing strategies to maintain steady engagement over time.

Daily Transaction Count vs. Daily ARB Rewards Distributed

A graph has been created to illustrate the relationship between Daily Transaction Count and Daily ARB distributed over time, providing insights into how user engagement responds to changes in ARB rewards. The red line represents the Daily Transaction Count, while the blue line represents the Daily ARB distributed to users. This visualization serves as a valuable tool for understanding the dynamics between user transactional activity and reward distribution. Analyzing this relationship allows us to observe how changes in ARB rewards impact the number of transactions users make daily and to identify key inflection points where changes in the reward distribution strategy directly affect user behavior.



Visualization Link - Daily transaction count vs daily ARB rewards

The graph shows the relationship between Daily Transaction Count and Daily ARB distributed from early June to 2nd September 2024. Initially, Daily Transaction Count and ARB distribution are moderately correlated, with rises in ARB distribution Value often accompanied by an increase in transaction count. For example, a notable increase in ARB distributed in mid-June aligns with a spike in transaction count, suggesting that higher ARB distributed value might drive transaction volume.

Throughout July, the correlation weakens, as several spikes in Daily ARB distributed do not result in corresponding increases in transaction count. This pattern indicates that other factors may be influencing transaction volume, as high ARB distributed values alone are not consistently leading to more transactions. A sharp peak in Daily Transaction Count in mid-July is only briefly mirrored by ARB distributions before both metrics stabilize.

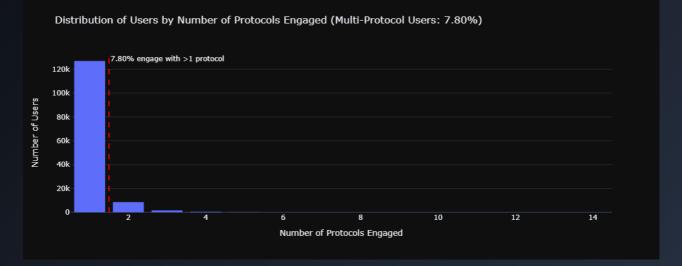
In August, Daily ARB distributed value experienced a few sharp peaks, but these do not generate a significant rise in transaction count. Towards the end of August, a final spike in ARB distributed Value corresponds with a moderate increase in transaction count. These trends suggest that while ARB rewards can drive short-term transaction activity, they may not be enough to sustain it long-term. Understanding the additional drivers of transaction volume will be important for fostering consistent user engagement.

Mercenary Users and Multi-Protocol Engagement

This section examines user behavior across various protocols, with a particular emphasis on users who participated in multiple platforms and received rewards from more than one protocol. The analysis covers 69 protocols to identify users receiving rewards from multiple protocols, with further in-depth analysis of such users conducted for 61 protocols.

Users Engaging with Multiple Protocols

The analysis revealed that 7.80% of users engaged with more than one protocol, indicating a significant trend of multi-platform participation. Among them, the majority, 126,970 users received rewards from only one protocol, while 8520 users interacted with two protocols. Additionally, 1612 users received rewards from three protocols, Notably, 24 users participated in more than six protocols. These users, referred to as "mercenary users," demonstrate an active approach to maximizing their rewards by interacting with multiple platforms within the ecosystem.



Visualization Link - Multi-protocol-users

The bar graph provides a clear representation of user engagement across different protocols, highlighting the extent of multi-protocol interaction among users. It demonstrates how a significant portion of users are not confined to a single protocol, suggesting diverse strategies for optimizing reward opportunities across the ecosystem.

User activity across different protocols

This section examines how a small group of particularly active users, who received rewards from more than six protocols, demonstrated optimized behaviors to maximize their rewards by strategically navigating across multiple platforms. By tracking their transaction sequences, we sought to uncover trends in how these users moved from one protocol to another, identifying potential protocol pairing preferences.

First Transaction: Identifying Common Initial Protocols

The analysis started by identifying which protocols users typically engage with first, giving insights into popular entry points within the ecosystem. The key observation was that Dodo emerged as the most frequent first protocol, appearing six times in the dataset, indicating that it may be an attractive entry point due to its incentives or its significant role within the ecosystem. Other initial protocols like Aave, Across, and Equilibria, showed up but with much lower frequencies.

Second Transaction: Analyzing Protocol Preferences After the First Transaction

Next, the focus shifted to understanding the protocols users engaged with for their second transaction. Across stood out as the most common second protocol, appearing in three instances, suggesting that while users explored different platforms after their initial transaction, Across was a preferred next step. Other protocols such as Aave, Dodo (again), Equilibria and Hop also appeared but less frequently.

Protocol Pairing: Common Combinations of First and Second Transactions

The analysis revealed that Dodo, Aave, Equilibria and Across were the most common pairing, indicating that users often started with Dodo and then transitioned to Across for their second transaction. Other pairings such as Across to Dodo, Across to Aave, and Equilibria to Across, were observed but were less frequent. These findings highlight the potential strategic choices users make to maximize rewards or leverage specific protocol features.

Summary of First and Second Protocol Frequencies

- First Protocol: Dodo was the most frequent, with six occurrences, while others like Aave, Across, and Equilibria appeared less often.
- Second Protocol: Across was the most common with three occurrences, followed by Dodo, Hop, Equilibria and Aave.

In summary, Dodo appears to be a popular starting point, while Across frequently follows as the second protocol. This suggests that users are likely engaging with Dodo first to take advantage of its incentives and then transitioning to other protocols like Across. These trends can help protocols optimize their incentive structures or form strategic partnerships to encourage continued engagement within the ecosystem.

Impact of Mercenary Users on the Overall Ecosystem and Strategies to Mitigate Potential Negative Effects

Impact of Mercenary Users on Governance

To evaluate the influence of mercenary users on governance, their voting behavior was carefully monitored.

List of mercenary users taking part in governance	
<u>user</u>	^
0xffe585b52885473b0678d97fb81f91042e0d09c1	
0xffb8c9ec9951b1d22ae0676a8965de43412ceb7d	
0xff3885ef026edc8609037b0f3cdade548e302624	
0xff36da79cf472a3d0d60f95561adce920514630f	
Qvff3E00/11/1000/f11/10/d0126/h00100/200E1fnE	
1,895 rows Search « < Page 1 > »	
@smriti0804	₿ 🙆 3min 🤗

Visualization Link - List of mercenary users contributed in governance

The analysis revealed that only around 17.6% of mercenary users actively participated in governance voting. This relatively low engagement indicates that while mercenary users are attracted to the financial incentives provided by the protocols, their contribution to the governance process remains minimal. This trend could have significant implications for governance outcomes, as proposals might be more heavily influenced by long-term participants or stakeholders who have a deeper commitment to the protocol. Consequently, the limited involvement of mercenary users in governance may lead to decision-making processes that are less representative of the broader user base, potentially favoring the interests of more dedicated or vested stakeholders.

Impact of Mercenary User's Voting Power

Beyond just their participation, the influence of mercenary users on governance was analyzed by assessing their voting power across various proposals. Despite being driven primarily by short-term incentives, mercenary users can wield considerable influence on decision-making through their voting power.

percentage of mercenary users' voting power	
proposalId	percentage_of_mercenary_users_voting_power
79904733039853333959339953965823982558487956291458141923259498272549038367575	5
38969105941610450745489426186100891274455985615095635354211489998123990654147	4
21881347407562908848280051025758535553780110598432331587570488445729767071232	4
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Visualization Link - <u>Percentage of mercenary users' voting power</u>

The analysis revealed that mercenary users participated in a total of 60 distinct governance proposals. This indicates that even with a lower overall engagement rate, these users are involved in a substantial number of key decisions. In some instances, their influence was significant, with the maximum voting power controlled by mercenary users reaching up to 5% for a given proposal.

These findings highlight the need to design incentive structures that prevent voting power from becoming overly concentrated in the hands of users who may lack a long-term commitment to the protocol's success. Achieving a balanced distribution of voting power among different participant types is crucial to maintaining the integrity and sustainability of decentralized governance systems.

Strategies to Mitigate Potential Negative Effects

To reduce the negative impact of mercenary users on governance, protocols can implement strategies that align incentives with long-term participation and ensure fair distribution of voting power. Here are some key approaches:

1. Weighted Voting Systems:

Implement a system where voting power is weighted based on user engagement or tenure. Long-term participants or those consistently active in the ecosystem receive more influence compared to short-term mercenary users. This ensures that individuals genuinely invested in the protocol's long-term success have a stronger voice in governance.

2. Time-Locked Voting Power:

Introduce time-locked voting power, requiring users to hold their tokens for a specific duration before fully participating in governance. This approach discourages mercenary users from buying tokens to influence a proposal and selling immediately afterward, encouraging longer-term engagement.

3. Quadratic Voting:

Implement quadratic voting, which reduces the influence of large token holders by making additional votes increasingly costly. This system balances the power between large holders (often mercenary users) and smaller, more committed users, preventing a concentration of voting power in the hands of those who acquire many tokens temporarily.

4. Governance Incentives for Long-Term Holders:

Design incentive mechanisms that reward long-term engagement. For example, offering bonus voting power or rewards to users who have held tokens for an extended period encourages loyalty and reduces the influence of short-term participants.

5. Slashing or Penalties for Malicious Behavior:

Introduce penalties or slashing mechanisms for users who engage in harmful actions or participate in governance purely for personal gain. Protocols can set up systems where users who vote against the protocol's best interests (e.g., voting on harmful initiatives) may have their tokens slashed or be disqualified from future governance.

6. Delegated Voting and Staking:

Encourage users to delegate their voting power to trusted community representatives or experts. This ensures that more informed decisions are made, reducing the risk of mercenary users manipulating governance outcomes. Delegation allows less active or knowledgeable users to entrust their voting power to experienced members.

7. Incentivizing Active, Knowledgeable Participants:

Introduce reputation-based or merit-based systems where users who actively contribute to the protocol, whether through development, community building, or governance, receive enhanced voting privileges. This shifts influence away from passive mercenary users toward contributors with proven commitment to the protocol's growth.

By implementing these strategies, protocols can foster a more balanced and sustainable governance ecosystem that minimizes the potential negative effects of mercenary users while promoting long-term participation and engagement.

Conclusion

The analysis of Arbitrum's Long-Term Incentive Pilot Program (LTIPP) reveals varying impacts across different sectors, user behaviors, and incentive strategies. Each sector responded uniquely to incentive mechanisms, with some, like "Quests," "RWA," and "Gaming/Gambling," showing notable increases in user engagement and value generation, while others, such as "Perpetual" and "Oracles," experienced stagnation or decline. Proprietary incentives emerged as the most effective in driving liquidity and user participation, demonstrating the importance of well-designed, sector-specific incentive structures. However, the variability in retention rates across sectors highlights the need for tailored approaches to sustain long-term user engagement.

In analyzing user actions with ARB rewards, it is clear that the incentive program succeeded in generating active participation, but unintended behaviors such as immediate sell-offs and circular transactions posed challenges to the program's effectiveness. While many users reinvested their rewards, strategies that prevent counterproductive actions, such as incentivized holding periods or penalties for inactive rewards, could further enhance the program's contribution to ecosystem growth. Additionally, the presence of mercenary users, who optimize short-term rewards without contributing significantly to governance or long-term participation, underscores the need for strategies that encourage deeper, more meaningful engagement.

The evaluation of different incentive types, such as Proprietary TVL and Partner TVL strategies, showed distinct trade-offs in terms of liquidity retention, user engagement, and operational costs. While proprietary incentives were particularly effective, volume-based and partner strategies played complementary roles in driving short-term activity. Understanding the strengths and weaknesses of each approach is crucial for optimizing future incentive programs and ensuring a balanced allocation of resources.

Moreover, the behavior of users interacting with multiple protocols, especially those receiving rewards from numerous platforms, presents both opportunities and challenges. Although such users can drive cross-platform engagement, their tendency to prioritize short-term incentives over long-term governance involvement presents risks to decentralized decision-making. Implementing mechanisms like weighted voting or reputation-based systems can help mitigate these risks and promote a healthier governance environment.

Finally, the correlation between ARB rewards and user behavior was not consistently linear, suggesting that factors beyond mere reward distribution influence user engagement and transaction activity. While rewards can drive short-term spikes in participation, sustainable engagement requires a more holistic approach that integrates non-monetary factors, such as community-building, gamification, and user education. Regular monitoring and adaptation of incentive programs will be essential to maintaining long-term network growth and ensuring that incentive strategies align with broader ecosystem goals.

Resources

1. ARB Distribution and Tracking Analysis

Description: This Google Sheet provides a comprehensive dataset of ARB tokens spent by protocols or returned to the original protocol from which they were claimed. The sheet includes detailed columns such as Protocol, Total ARB Requested, Total ARB Claimed, ARB distributed till 31 August, ARB distributed till 2nd September, ARB returned to LTIPP, Untracked addresses, Recipient Address, Intermediary Address, Distributor Address (Tracked and Untracked). This data reflects the analysis conducted up to this point, offering valuable insights into ARB token distribution and utilization patterns.

Access Link: ARB distribution and tracking analysis

2. Protocols Considered

Description: This document provides the detailed list of the protocols and their sectors. It also includes the list of protocols which were used for the analysis of the different questions.

Access Link: Protocols considered

3. Statistical Analysis

Description: To assess the statistical significance of the findings in the LTIPP Research Project 1, please refer to the document, which provides a detailed statistical analysis. This document covers the methodology, results, and significance tests used in the project, offering insights into the reliability and implications of the data collected.

Access Link: Statistical Analysis

4. Dashboards

Description: Dashboards have been created to help us by providing an organized, interactive, and visual representation of data. They allow for quick insights and decision-making by summarizing key metrics, trends, and patterns from the analysis. The dashboards include all the visualizations from the analysis, along with brief descriptions. A Dune dashboard has been created for sector growth, user interaction, and incentive effectiveness, while a combined Python dashboard has been created for all other sections of the analysis.

Access Link: Python Dashboard and Dune Dashboard