Transaction Flow Analysis Report: who profits on transactions on Alephium

Commented [1]: Who participated on the report, I need all names, is it only tobias ? or others? who did what? etc...

This report provides a comprehensive analysis of the financial flow within the Alephium ecosystem, with a specific focus on a single, fundamental question: **Who profits from a transaction on Alephium?**

At its core, **Alephium (ALPH)** is a next-generation Layer-1 Proof-of-Work blockchain that combines Bitcoin's security and decentralization with the scalability and programmability of modern platforms. Its innovative architecture, including a unique sharding model (BlockFlow) and a stateful UTXO (sUTXO) framework, allows it to achieve high throughput without sacrificing security.

General Overview of Alephium's Financial Fundamentals

The Alephium L1 business model is a unique blend of security, decentralization, and forward-thinking tokenomics. Unlike networks where miners or validators earn a direct profit from user fees, Alephium's financial flow is designed to benefit all participants in the ecosystem through a system of distributed value.

What makes it special?

1. **100% Fee Burn**: The most critical component of the L1's business model is the permanent burning of all ALPH gas fees paid for transactions. The network does not "collect" these fees as revenue. Instead, it creates value for all ALPH holders by reducing the total supply with every transaction. This direct link between network utility and token scarcity is a key value driver.
2. **No Direct Miner Profit from Fees**: Alephium is a Proof-of-Work (PoW) network, but its miners are not compensated with user transaction fees. This is a significant departure from Bitcoin and Ethereum (prior to the merge). Miners are paid exclusively through block rewards, a design choice that aligns their incentives with network security, not with fee extraction.
3. **Strategic Tokenomics Evolution:** The network's economic model recently underwent a major change with the Danube upgrade (July 15, 2025). The network transitioned from a fixed supply cap to a tail emission model. This ensures that a perpetual, small amount of ALPH is always being issued as a reward for miners, guaranteeing long-term network security.

   Because all gas fees are burned, the net supply effect becomes usage-dependent (tending toward disinflation as activity grows rather than being strictly deflationary on usage).

4. **No Sequencer:** The decentralized nature of Alephium eliminates the "sequencer" role found in Layer-2 solutions, removing a potential single point of failure and a source of centralized profit extraction.

5. **Free Oracles:** The network also has partnerships with oracle providers like DIA to provide critical data feeds to dApps at **no direct cost**, reducing operational overhead for developers. These feeds are free-to-use for builders, but on-chain gas is still required to read/update them; grants may cover oracle infra for limited periods.

General Example: A generic $1 Transaction

To understand the flow of value, we can analyze a hypothetical transaction with a total cost of $1.00. This example simplifies the process to show how a user's payment is split between two distinct components: the protocol fee and the network gas fee.

Cost Component	Illustrative Amount	Recipient	Rationale & Flow
Protocol Fee	$0.95	The dApp & its Stakeholders	This is the fee charged by the application itself (e.g., a DEX trading fee or a lending protocol's interest). It is the dApp's primary revenue source and is distributed to liquidity providers, stakers, and the protocol's treasury.
Network Gas Fee	$0.05	Burn address so indirectly all ALPH holders benefit	This is the fee paid in ALPH to the network for transaction execution. It is 100% burned, removing it from the circulating supply. This value directly benefits all ALPH holders.
Oracle Fees	$0.00	None	Alephium's partnership with DIA provides dApps with essential price feeds and oracle services at no direct cost.
MEV (Maximal Extractable Value)	Nearly $0.00	None (by design)	Alephium’s sUTXO architecture and parallel processing are designed to mitigate MEV. While it cannot be fully eliminated, this "tax" is nearly non-existent on Alephium by design, ensuring users receive the full value of their transactions.

Exchange Withdrawal Fee	Variable (e.g., $0.05 - $0.30)	Centralized Exchange (CEX)	A fee charged by a centralized exchange when a user withdraws ALPH (or other assets) to an external wallet, including an Alephium wallet. This is set by the exchange and can be a flat fee or percentage-based.
Bridge fee	Variable (e.g., $0.05 - $0.30)	Bridge operator	A fee charged by the cross-chain bridge service (e.g., Alephium Bridge) for moving assets between Alephium and other networks (e.g., Ethereum, BSC). This is typically a small percentage of the bridged amount.
Total User Payment	$1.00	Distributed as above	The user pays a total of $1.00, but the money flows to different stakeholders depending on its purpose.

Illustration of Transaction Profit Flow with Main dApps on ALPH

Dapps can decide unilaterally how protocol fees are distributed. This section illustrates how a user's protocol fee is distributed among the stakeholders of the three primary dApps on Alephium. The following tables provide a granular view based on the dApp's specific business model and tokenomics.

Ayin DEX (Automated Market Maker)

Ayin is Alephium's first decentralized exchange, built as an Automated Market Maker (AMM) using the sUTXO model. Every swap on Ayin Classic charges a **0.30% fee**. That fee is split equally between liquidity providers and AYIN stakers. Liquidity providers are rewarded for supplying depth and enabling smooth trades, while AYIN stakers (through the xAYIN staking pool) gain a direct share of trading revenue, reinforcing long-term alignment with the protocol.

Recipient	Share of Protocol Fee	$1 Protocol Fee Example	Rationale & Flow
Liquidity Providers (LPs)	50% (0.15% of swap)	$0.50	Incentive for providing liquidity and keeping markets efficient.

AYIN Token Stakers (xAYIN)	50% (0.15% of swap)	$0.50	Rewards users who stake AYIN, strengthening token utility and governance.
Total Protocol Fee	100% (0.30% swap fee)	$1.00	Entire fee pool flows back to LPs and stakers.

AlphBanX (Over-collateralized Lending Protocol)

AlphBanX is Alephium's flagship lending platform and the issuer of the stablecoin aUSD. Revenue comes from borrowing interest, minting and redemption fees, and liquidations. These fees are not distributed in a fixed way but follow a dynamic model. A share flows to ABD auction-pool depositors, who provide liquidity that secures the liquidation process. Another portion goes to ABX stakers, aligning governance participants with the protocol's success. In addition, 20% of borrowing fees are used to buy back and burn ABX, gradually reducing supply. The balance between ABD depositors and ABX stakers shifts depending on the level of participation in auction pools, making AlphBanX more adaptive than a static revenue-split model.

Recipient	Share of Protocol Fee	$1 Protocol Fee Example	Rationale & Flow
ABD Auction-Pool Depositors	Dynamic (TVL-sensitive)	Variable	Rewards depositors who secure liquidations and absorb systemic risk.
ABX Token Stakers	Dynamic (complements ABD share)	Variable	Provides revenue to governance-aligned stakers.
ABX Burn	20% of borrowing fees	Variable	Reduces ABX supply, supporting token scarcity.
Total Protocol Fee	**100%**	**$1.00**	Fees flow between ABD pools and ABX stakers, with part permanently burned.

Elexium (AMM veDEX)

Elexium operates as an Automated Market Maker (AMM) with **vote-escrow (ve)** mechanics rather than an orderbook. Its fee model aligns incentives between liquidity providers and governance participants. A standard swap incurs a **0.30% fee**, split equally between LPs and ve-voters.

Recipient	Share of Protocol Fee	$1 Protocol Fee Example	Rationale & Flow
Liquidity Providers (LPs)	50% (of 0.30%)	$0.50	Rewards LPs for providing liquidity and market depth.
ve-voters / governance stakers	50% (of 0.30%)	$0.50	Rewards community members who lock and vote with governance tokens.
Total Protocol Fee	**100%**	**$1.00**	All protocol fees are distributed between LPs and ve-voters.

Final Thoughts on Other Transaction-Related "Taxes" and Assets

MEV and Hidden "Taxes"

As noted in the table, Alephium's architecture is designed to make MEV, which acts as a hidden tax on users on other chains, exceptionally difficult to perform. The parallel transaction processing and sUTXO model significantly reduce the window for front-running and sandwich attacks, ensuring that a user's intended price for a transaction is the one that is executed.

Bridged Assets and Value Flow

Bridged assets, like USDC or ETH, involve two distinct fee considerations:

1. **Bridge Fees:** When you move assets *to or from* Alephium using the Alephium Bridge, a fee is paid to the **bridge operator** (as detailed in the "General Example" table). This compensates the bridge for its operations and security.
2. **dApp Protocol Fees (on Alephium):** Once an asset has been successfully bridged *onto* the Alephium network and exists as a wrapped token (e.g., wETH, wUSDC), interacting with a dApp *on Alephium* (such as swapping on Ayin DEX) will incur that dApp's specific **protocol fee**. This fee is typically paid in the bridged asset itself and is distributed to the dApp's stakeholders, as outlined in the individual dApp tables above.
3. **Network Gas Fee (always ALPH):** Regardless of the asset being transacted (native ALPH or a bridged asset), the **network gas fee** for any transaction on the Alephium blockchain must always be paid in ALPH. This ensures that all network activity contributes to the ALPH burn mechanism.

Conclusion

The analysis of transaction flow on Alephium reveals a sophisticated economic model designed for a decentralized future. No single entity "profits" in the traditional sense. Instead, the value is distributed to those who contribute to the network's health and utility:

- **ALPH holders** profit from the **scarcity** created by the 100% gas fee burn.
- **Miners** profit from the **security** they provide in exchange for block rewards.
- **dApp stakeholders** profit from the **utility** they create, earning a share of protocol fees for their contributions as LPs, stakers, or developers.
- **Bridge operators and CEXs** profit from providing essential infrastructure and services that facilitate the movement and acquisition of assets within the broader crypto ecosystem.

This multi-faceted approach ensures that Alephium is not just a platform for transactions but a sustainable ecosystem where value is created and shared equitably among all who participate, with transparency regarding direct on-chain costs and awareness of potential external service fees.