Mezo Earn

An Economic Incentive Framework for Bitcoin-Native Finance

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Abstract

Bitcoin has cemented itself as a financial asset, yet it contributes little to the broader economy because it cannot express credit, yield, or incentives on its own. Existing attempts to activate bitcoin liquidity force users into narrow tradeoffs. Wrapped representations fragment across incompatible bridges with uneven trust assumptions, while most yield products rely on single-pillar revenue models that cannot scale. Holding native BTC avoids these issues but produces no economic return, which limits the formation of deeper bitcoin-denominated markets.

We present Mezo Earn: an economic incentive system that powers the Mezo chain–a decentralized Bitcoin-native environment focused on self-funded BTC loans and a bitcoin-backed stablecoin, MUSD. This economic engine utilizes MEZO, Mezo's native token, to cover emissions, exercise price governance rights, route fee flows, and generally serve as a strategic coordination asset. Mezo Earn introduces a novel Dual-Token Matching Market that combines locked BTC (veBTC) with locked MEZO tokens (veMEZO) to create a virtual voting weight.

This design draws inspiration from successful DeFi models of the past, but adapts those approaches to create an economic system that is both Bitcoin and user-aligned.

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1 Introduction & Motivation

Mezo is a network purpose-built for a self-custodial BTC banking experience. Users lock bitcoin as collateral and borrow MUSD (Mezo's bitcoin-backed stablecoin) against it, thereby maintaining BTC price exposure while accessing dollar liquidity for spending, trading, or saving. While bitcoin serves as collateral and MUSD provides the medium of exchange, the MEZO token functions as Mezo Network's strategic coordination asset. MEZO is designed to steer incentives, govern protocol parameters, and capture the execution value generated by the chain. Mezo's ecosystem captures value from bitcoin velocity. When users lock BTC, borrow MUSD, swap assets, and transact on the chain, the network earns three types of fees:

(i) It collects loan interest on MUSD debt,

(ii) Swap fees on BTC and MUSD liquidity pools, and

(iii) Transaction fees for using the Mezo chain.

To make this sustainable, the chain needs:

- A way to attract and retain deep liquidity for BTC and MUSD pairs.
- A sustainable MUSD Savings Rate that makes holding the stablecoin attractive.
- Real yield for both BTC and MUSD holders.
- A structure that ties the chain's economic value to BTC, rather than to a native governance token.

Without a coherent economic system, liquidity would fragment, short-term extraction would prevail, and bitcoin would sit as passive collateral with no influence over how the network evolves. Mezo Earn is the incentive mechanism that coordinates the distribution of value. It defines how Bitcoin collateral, MEZO, liquidity providers, validators, and protocols share loan interest, swap fees, and transaction fees, keeping BTC as the anchor of governance while using MEZO to route and amplify influence.

1.1 Background

The vote-escrow (ve) tokenomics model, introduced by Curve Finance [1], has emerged as a dominant pattern for decentralized governance and liquidity allocation. The model's success derives from its ability to align long-term incentives through time-weighted token locking, where voting weight is computed as:

$$w = \text{tokens} \cdot \frac{t_{\text{remaining}}}{t_{\text{max}}}$$

The "Curve Wars" of 2021-2022 demonstrated the power of vote-escrow tokenomics in DeFi. During this period, protocols competed to accumulate veCRV tokens, which controlled the distribution of Curve's liquidity rewards. This competition arose because veCRV holders could direct CRV emissions to specific liquidity pools, boost their own yields by up to 2.5x. And earn 50% of protocol trading fees. The wars established three important principles:

1. Governance tokens could become productive assets beyond simple voting.
2. Incentive markets could create sustainable value flows.
3. Long-term token locking could align incentives between protocols and token holders.

Originally meant to incentivize via individual behavior, Curve governance was eventually turned into a more passive market-based system via Convex Finance. Convex allowed users to deposit CRV tokens and delegate efficient and valuable allocation of voting weights to maximize earnings.

Convex emerged as the dominant player in Curve governance, eventually controlling 47% of total veCRV supply, while protocols like Abracadabra spent over $10 million per vote cycle in incentives to maintain liquidity for their stablecoins.

1.2 Evolution of Vote-Escrow Systems

The Curve model has undergone significant evolution. Andre Cronje's ve(3,3) design [2] introduced transferable NFT representations of locked positions, transforming illiquid veCRV-style positions into tradeable assets. Aerodrome extended this model with several critical improvements: complete fee distribution to voters rather than Curve's 50% allocation, anti-dilution rebases protecting against emission-driven devaluation, and native incentive mechanics that eliminated the need for external incentive protocols.

Perhaps most significantly, Aerodrome removed Curve's complex boost calculations in favor of direct proportional voting, demonstrating that simplified mechanics could achieve equivalent or superior outcomes. The protocol further strengthened demand through innovative mechanisms such as Flight School, which allocated 10% of supply to a single veAERO NFT whose yields were used to purchase and distribute AERO to new participants, and Relays, which enabled passive users to delegate vote management to specialized operators pursuing various optimization strategies. These innovations proved that behaviors emerging organically in existing systems, such as Convex's aggregation layer atop Curve, could be more efficiently integrated directly into the protocol layer.

Mezo Earn adopts this lineage deliberately. The Mezo implementation of the Earn engine is a fork of Aerodrome's ve(3,3) codebase, with modifications. At the contract level, Mezo Earn retains NFT-based locks, linear time-decay of voting weight, epoch-based gauge voting, and the basic pattern in which governance weight routes both emissions and fee flows. This choice reuses battle-tested vote-escrow infrastructure rather than reimplementing it from scratch, and confines novelty to the parts of the system that must change to support a bitcoin-native dual-token design. On top of this fork, Mezo Earn introduces structural changes that are required for Mezo's objectives:

- **Dual-token virtual weight:** Aerodrome centers governance in a single token. Mezo Earn splits influence into veBTC and veMEZO and defines virtual voting weight as a capped multiplicative function of the two. veBTC carries base weight, veMEZO scales that weight up to a fixed maximum, and the boost depends explicitly on each participant's share of total veBTC and total veMEZO. This prevents MEZO from forming independent governance power and forces large BTC holders to commit meaningful MEZO if they want high multipliers.
- **Per-position matching market:** Aerodrome gauges are attached to pools and contracts. In Mezo Earn, every veBTC NFT receives its own non-staking gauge, and veMEZO votes on that gauge determine the boost term for that specific position. This turns the pairing between BTC collateral and MEZO into an explicit matching market: BTC-heavy participants may post incentives on their veBTC gauges to attract veMEZO votes, and MEZO-heavy participants may allocate veMEZO to gauges with attractive incentive and fee flows. The boost becomes a priced service rather than an opaque function of joint token and LP holdings.
- **Splitter hierarchy for emissions:** Aerodrome distributes emissions across gauges directly in proportion to ve-voting. Mezo Earn inserts a splitter tree between raw emissions and final gauge allocations. A chain splitter determines the share of reward emissions that goes to validator gauges versus the rest of the system, subject to a per-epoch movement bound. An ecosystem splitter then divides the remainder between staking gauges (LP pools, MUSD

savings rate) and non-staking ecosystem gauges, again under bounded movement. Within each branch, emissions are allocated by virtual weight. This structure allows governance to adjust security, liquidity, and ecosystem support with inertia, rather than reallocating the entire emission budget in a single vote.

- **Lock-ratio dilution mitigation:** Aerodrome's anti-dilution logic rewards lockers, but it is tied directly to veAERO supply. The Earn engine defines an explicit lock ratio between veMEZO supply and total MEZO supply, and uses that ratio to split emissions in each epoch into a rebase component and a reward component. When the lock ratio is high, a larger share of emissions accrues to existing lockers as rebases; when it is low, more emissions flow into the reward branches. This creates a moving equilibrium in which the marginal benefit of locking declines as more MEZO is committed.

Compared to other dual-token systems in Bitcoin and DeFi, these changes target three specific failure modes:

1. Governance power drifting to a speculative auxiliary token.
2. Emissions relying primarily on inflation rather than on real fee flows.
3. Complexity that invites external aggregation layers.

By anchoring base voting power in veBTC, confining MEZO to a bounded multiplicative role, embedding the BTC–MEZO matching market into gauges, and routing emissions through a governed splitter hierarchy with an explicit anti-dilution rule, Mezo Earn keeps Bitcoin at the center of Mezo's economics while retaining the proven mechanics of ve(3,3) systems.

2 System Overview

The Mezo chain is designed to allow participants to obtain liquidity through self-custodial, BTC-backed loans using the MUSD stablecoin. Mezo Earn serves as the economic engine fueling this ecosystem. It moves beyond simple governance to create a liquidity flywheel that financializes Bitcoin's security model.
Throughout this paper, we refer to gauges—smart contracts that receive and distribute value (emissions, fees, or incentives) based on the votes of participants. Gauges are the destinations for votes: the more voting weight a gauge receives, the larger its share of resources in that epoch. Section 6 provides a detailed coverage of gauge mechanics.

2.1 Actors

The Mezo Earn engine consists of five decentralized primary actors whose incentives align through carefully designed economic loops:

- **End-users:** Lock BTC and/or MEZO, receive veBTC and veMEZO, vote in gauges, and claim fees and emissions.
- **Liquidity providers (LPs):** Provide liquidity in DEX pools, receive LP tokens, and optionally stake LP tokens in staking gauges.
- **Validators:** Operate Mezo chain nodes and receive emissions based on delegated vote weight. Currently operating under proof-of-authority, validators may transition to proof-of-stake consensus in future iterations, as determined by governance.
- **Protocols:** Deploy incentives to attract liquidity to specific pools or opportunities. They represent external projects building on Mezo or veBTC voting power.

- **The chain:** Captures fees from bridging operations, swap transactions, and MUSD lending operations, redistributing this value to active participants.

2.2 Epoch Structure

Locking BTC into veBTC ties a user's governance power to a specific time period. When a user locks BTC, they receive a veBTC NFT whose voting weight is highest at the start of the lock and then decays linearly until unlock. Mezo BTC holders can lock their BTC to create veBTC NFTs. These NFTs:

- Represent time-weighted locked Bitcoin positions
- Are implemented as ERC-721 tokens
- Can be merged (combining multiple veBTC NFTs for maximal lock)
- Can be split (dividing one NFT into multiple with identical lock parameters)
- Has the potential to serve as collateral in the MUSD borrowing system in the future

The system operates in 7-day epochs, with each epoch beginning on Thursday at 00:00 UTC. Lock durations are aligned to epoch boundaries, not calendar days. The max lock is 28 days, and lock times are always rounded down to weeks. A user selecting a max lock mid-epoch will have their effective duration reduced based on the remaining time in the week, resulting in a lock of approximately 21–28 days, depending on when the lock is created. This normalization simplifies voting weight calculations and ensures all locks expire at epoch transitions. Votes cast in epoch N determine:

- Emission allocation for epoch $N + 1$
- Fee distribution for epoch N

Voters observe fee generation from the prior epoch before casting votes, then receive their share of those fees at epoch end based on their allocation. Stakers in the voted gauges receive MEZO emissions for the following epoch.

3 The Dual-Token Economic Model

3.1 Overview

MEZO exists as Mezo's strategic coordination asset. It routes incentives, governs protocol parameters, and captures the execution value generated by the chain.

The Mezo ecosystem generates value from BTC being put to work. As previously stated, when participants lock BTC, borrow MUSD, swap assets, or transact on the chain, the Earn engine collects three categories of fees: loan interest on MUSD debt, swap fees on BTC and MUSD liquidity pools, and transaction fees for chain usage. These fee flows require allocation of earned BTC and/or MEZO emissions. Fee allocation must be balanced between liquidity providers, the MUSD savings rate, validator compensation, and ecosystem development seeding. MEZO exists to direct these flows. When MEZO is locked as veMEZO, it boosts locked BTC (veBTC) weight in determining:

- How emissions are divided across gauges
- How chain revenue is split between liquidity, MUSD savers, validators, and ecosystem programs
- Which opportunities receive support in each epoch

MEZO does not replace BTC's role as collateral or the governance anchor; it amplifies and directs the value that Bitcoin activity creates. In this sense, MEZO may function as a leveraged position on bitcoin utilization.

3.2 Why Dual Token?

Single-token governance often leads to mercenary capital that extracts value without long-term alignment. A single-token system creates a tradeoff: either BTC holders control everything (marginalizing smaller participants and the native token), or a native token controls everything (disconnecting from Bitcoin alignment).

Mezo separates the anchor (BTC) from the boost (MEZO). This ensures that governance power is rooted in the chain's primary collateral (BTC) while incentivizing the utility of the protocol token (MEZO).

3.3 The Concept of Time-Weighted Escrow

Mezo Earn utilizes a vote-escrow (ve) model where weight is determined by the amount of tokens locked and the duration of the lock. Both veBTC and veMEZO are implemented as ERC-721 NFTs, allowing them to be transferable, mergeable, and (in the case of veBTC) splittable.

3.4 Defining veBTC

BTC locked into veBTC defines base voting weight. MEZO locked into veMEZO defines a multiplicative factor that can enlarge that weight up to a capped maximum. The core design ensures that MEZO cannot form independent governance power, and BTC cannot achieve outsized influence without also committing MEZO.

$$|\text{veBTC}| = \text{BTC}_{\text{locked}} \cdot \frac{\text{remaining\_lock\_duration}}{\text{max\_lock\_duration}}$$

where:

- max_lock_duration = 28 days (normalized to 7-day epoch)
- Minimum lock: 1 day
- Lock decay: Linear. remaining_lock_duration decreases continuously until reaching zero.

For example, a user who locks 1 BTC for 28 days starts with $|\text{veBTC}| = 1$, which decays linearly to 0 over the lock period. After 14 days, their $|\text{veBTC}| = 0.5$. Users can prevent this decay at any time and maintain voting power by extending their lock.

3.5 Defining veMEZO

For veMEZO, the same pattern applies with different parameters.

$$|\text{veMEZO}| = \text{MEZO}_{\text{locked}} \cdot \frac{\text{remaining\_lock\_duration}}{\text{max\_lock\_duration}}$$

where:

- max_lock_duration = 4 years (1,456 days)
- Minimum lock: 1 week
- Lock decay: Linear decay identical to veBTC

The 4-year maximum creates much deeper commitment than veBTC's 28-day parameter, reflecting MEZO's role as the chain-native governance asset.

3.6 The Boosted Weight: How veBTC + veMEZO Combine

The combined voting weight uses a boosting mechanism inspired by Curve but adapted for dual tokens:

$$|\text{veBTC} \cdot \text{veMEZO}| = |\text{veBTC}| \cdot (\min(5, 1 + \text{Boost}_{\text{veMEZO}}))$$

where:

$$\text{Boost}_{\text{veMEZO}} = 4 \cdot \frac{|\text{veBTC}|_{\text{total}}}{|\text{veBTC}|} \cdot \frac{|\text{veMEZO}|}{|\text{veMEZO}|_{\text{total}}}$$

This structure has three immediate consequences:

1. A veBTC position with no attached veMEZO has $|\text{veMEZO}| = 0$, so $\text{Boost}_{\text{veMEZO}} = 0$. The multiplier is $\min(5, 1) = 1$, and the virtual weight equals the base veBTC weight. BTC-only participants, therefore, always operate at a $1\times$ multiplier.
2. The multiplier is bounded. Since the inputs in the boost formula are nonnegative, we have $\text{Boost}_{\text{veMEZO}} \geq 0$ and $1 + \text{Boost}_{\text{veMEZO}} \geq 1$. The $\min(5, \cdot)$ cap enforces $1 \leq \min(5, 1 + \text{Boost}_{\text{veMEZO}}) \leq 5$, so the multiplier lies between 1 and 5 for all positions. No combination of BTC and/or MEZO can produce a multiplier above 5.
3. The boost exhibits inverse scaling with respect to $|\text{veBTC}|$: as a user's Bitcoin position increases, they require proportionally more $|\text{veMEZO}|$ to maintain the same boost level. This prevents large BTC holders from achieving maximum boost without proportional MEZO holdings.

Here's how one would reach a cap in terms of shares. Let's start with the requirement for saturation:

$$1 + \text{Boost}_{\text{veMEZO}} \geq 5 \implies \text{Boost}_{\text{veMEZO}} \geq 4$$

Substitute the $\text{Boost}_{\text{veMEZO}}$ definition to get:

$$4 \cdot \frac{|\text{veBTC}|_{\text{total}}}{|\text{veBTC}|} \cdot \frac{|\text{veMEZO}|}{|\text{veMEZO}|_{\text{total}}} \geq 4$$

Dividing both sides by 4 gives:

$$\frac{|\text{veBTC}|_{\text{total}}}{|\text{veBTC}|} \cdot \frac{|\text{veMEZO}|}{|\text{veMEZO}|_{\text{total}}} \geq 1$$

Dividing both sides by $\frac{|\text{veBTC}|_{\text{total}}}{|\text{veBTC}|}$ we get:

$$\frac{|\text{veMEZO}|}{|\text{veMEZO}|_{\text{total}}} \geq \frac{|\text{veBTC}|}{|\text{veBTC}|_{\text{total}}}$$

Therefore, we have shown that a participant reaches the max multiplier when its share of veMEZO is proportionally as large as its share of veBTC.

4 The Matching Market

In single-token designs, boosting is usually a function of joint holdings of a governance token and LP exposure in specific pools. In Mezo Earn, the two-token nature of the system makes it natural to represent the pairing between veBTC and veMEZO as an explicit market.

Every veBTC NFT is associated with a separate non-staking gauge contract. If a user creates a veBTC position indexed by i, the system instantiates gauge G_i. veMEZO holders vote on these veBTC gauges using their |veMEZO| weight. The total veMEZO weight on G_i becomes the |veMEZO| factor in the boost calculation for that particular veBTC position. The resulting boost does not apply automatically; the veBTC position must be poked via a separate transaction that refreshes its virtual weight. Once poked, the boost applies immediately to that veBTC position's voting power. Votes on G_i from a given veMEZO holder then remain locked and cannot be changed until the next epoch.

This construction gives every veBTC position a demand curve for boost. A BTC-heavy but MEZO-light participant can place incentives on their own gauge G_i. These incentives are denominated in any ERC-20 token. If the incentive yield per unit of veMEZO is attractive, veMEZO holders may direct votes to that gauge, increasing |veMEZO| on G_i and therefore the boost term for that veBTC position. Because the boost term contains the factor $\frac{|\text{veBTC}|_{\text{total}}}{|\text{veBTC}|}$, the incremental effect of a given veMEZO share on a substantial veBTC position is lower than the effect on a smaller veBTC position. The large veBTC holder must either acquire a greater amount of veMEZO or pay bribes over many epochs to maintain a high multiplier.

Likewise, a MEZO-heavy but BTC-light participant can treat veBTC gauges as an opportunity. To translate a large veMEZO balance into meaningful governance power and fee exposure, MEZO holders may seek to pair it with sufficient veBTC by surveying all gauges and selecting those that have a high incentive yield, allocating veMEZO votes accordingly. When the epoch ends, the participant claims the incentives from those veBTC gauges. The veMEZO holder does not receive any share of the downstream trading fees, MUSD revenues, or bridging fees that the veBTC positions earn through their own votes, unless veBTC holders decide to place those earnings into their gauges as explicit incentives.

The matching market, therefore, prices the boost as a permissionless, tradable service. BTC holders do not need to hold MEZO to access higher multipliers, provided they are willing to pay incentives to MEZO holders. MEZO holders do not need to hold proportional amounts of BTC in order to earn yield, provided they find veBTC positions that will route profitable fees or incentives. Notably, the system remains viable when the matching market is thin. A veBTC position with no veMEZO votes still carries full base weight and can vote at multiplier one, and it still earns its share of bridging fees.

Because the boost function depends on relative shares, the market equilibrates toward pairings where both sides receive net benefit. An over-incentivized gauge will likely attract more veMEZO votes until the marginal incentive per unit of veMEZO weight matches that of alternatives. An under-incentived gauge may fail to attract boost and will operate effectively as a plain veBTC position. This is stricter and more explicit than the optimization problems users face in Curve-style systems, where the value of boost depends on joint LP and token positions that users must compute on their own.

5 Value Accrual & Incentives

Mezo Earn routes multiple forms of revenue to veBTC holders and voters. The three primary revenue sources are DEX swap fees, MUSD interest and related protocol revenues, and bridging and chain fees.

Each DEX pool charges a fee on trades and accumulates the fees in the pool. LPs who do not stake their LP tokens simply accrue their share of these fees, which they may claim directly. When LPs stake their LP tokens into a staking gauge, their underlying fee share is diverted from them and instead credited to the gauge's fee pot. At the end of the epoch, that fee pot is distributed to veBTC voters who directed votes to that gauge, in proportion to their voting weight. The LPs receive MEZO emissions instead. This arrangement converts LP fee income into a payment to governance voters. LPs choose between fee yield without emissions and emissions yield without direct fees, and their choice depends on the relative pricing of MEZO emissions and the fees that their pool generates.

MUSD borrowing generates revenue from interest, origination fees, and refinancing fees. The protocol directs this MUSD revenue into the MUSD savings rate gauge. Users who hold MUSD may deposit into a savings vault and receive a receipt token that tracks their proportional claim on the vault. The vault manager actively deploys deposited MUSD into approved strategies, so this capital continues to earn yield rather than sitting idle. If a user holds the receipt token without staking, they receive their share of the vault's MUSD yield directly. If they stake the receipt token into the MUSD savings rate gauge, their share of MUSD yield is diverted into the gauge and distributed to veBTC voters, while they receive MEZO emissions that voters route to that gauge. The pattern mirrors the LP case: stakers exchange direct real yield for emissions, and voters exchange their voting power for a claim on diverted MUSD yield. Bridging assets, refinancing, originating loans, and swaps all incur fees. Mezo Earn routes these bridging and chain fees directly to veBTC holders as passive yield, distributed in proportion to base boosted weight. This stream does not depend on voting behavior. It rewards veBTC simply for existing, reflecting that locked BTC plays a significant role as both the chain's collateral and in governance.

The economic interactions between LPs and MUSD stakers create a market in which emissions may be "purchased" with fees. An LP that stakes LP tokens and foregoes fees may do so if the expected value of MEZO emissions exceeds the fees they sacrifice. A veBTC voter may allocate votes to a gauge if the combined fees and incentives associated with that gauge exceed what they could earn elsewhere. This circular structure produces a flywheel. When BTC liquidity in a pool is shallow, protocols or LPs can increase their incentives or emissions demand to attract veBTC votes and deepen that pool. When a pool generates high organic fees, veBTC voters may allocate to it because they wish to earn those fees, and this supports deeper liquidity. MEZO emissions, rather than being a one-way subsidy, can be constantly exchanged for fee rights that originate from economically meaningful activity.

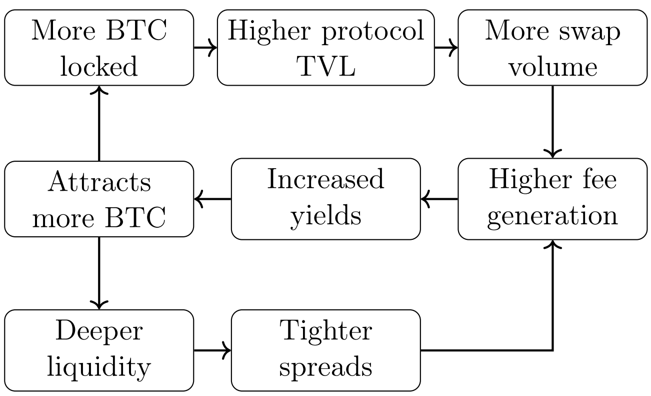

Figure 1: Liquidity Flywheel

MUSD acts as an additional engine. When borrowing demand is strong and staked MUSD is productively deployed by the savings vault, total MUSD revenue increases, making the MUSD savings rate gauge more attractive to veBTC voters. Voters can then route a larger share of MEZO emissions toward the savings rate gauge, increasing the effective return to gauge stakers and, indirectly, the appeal of holding MUSD. A higher MUSD savings rate supports MUSD demand and gives BTC holders an additional way to leverage their BTC while maintaining price exposure.

Under these flows, individual users accumulate positions. A BTC-heavy user locks BTC, earns bridging fees, fees from voted gauges, incentives, and MEZO, and/or distributes it to incentivize more MEZO weight (via gauge incentives), which further raises their share of emissions and fees.

A MEZO-heavy user locks MEZO and attaches it to veBTC positions that are well-incentivized, turning MEZO into a claim on BTC-derived fee flows. Systemically, each additional BTC lock and MEZO lock deepens liquidity, increases the fee base, and enlarges the buffer of committed capital that underpins Mezo.

6 Gauges, Splitters & Emission Routing

6.1 Gauges

Mezo Earn uses gauge contracts to allocate fees, incentives, and MEZO emissions, and splitter contracts to control high-level allocation ratios. There are three main gauge classes: staking gauges, non-staking gauges, and veBTC boost gauges. Users vote on staking, non-staking, and veBTC gauges independently. As such, a voter can allocate 100% of their voting power to any combination of gauges in the same epoch.

A staking gauge is associated with a pool or contract that has a natural staking token, such as a DEX LP token or an MUSD savings vault receipt token. Users may deposit the stake token into the gauge. MEZO reward emissions routed to this gauge are distributed to stakers in proportion to their stake. Fees and incentives that reach the gauge are instead distributed to veBTC voters who voted for that gauge in proportion to their voting weight—the DEX pool gauges and the MUSD savings rate gauge fall into this category.

A non-staking gauge routes MEZO reward emissions to validators and provides ecosystem incentives. A validator gauge in the validator branch of the Mezo Earn tree receives MEZO according to the share of veBTC votes that support that validator. The validator may keep those emissions, share them with the voters who supported them (who effectively act as delegators), or repost them as incentives on their own gauge as the on-chain mechanism for redistribution. A non-staking ecosystem gauge might direct MEZO to a partner protocol, which then determines how to utilize those tokens to support its users.

A veBTC boost gauge is a special gauge attached to a specific veBTC NFT, discussed earlier in the matching market section. It serves only to collect incentives and veMEZO votes, and does not control any MEZO emissions. Its primary effect is to influence the boost term in the virtual voting weight for that veBTC position. A splitter gauge contract splits its flow between exactly two destinations. Voting adjusts the split ratio within bounded parameters, and the ratio can only change by up to 1% per epoch to prevent sudden shocks. This ensures significant changes require sustained community support.

6.2 Emissions

Mezo Earn employs an emission schedule that is explicitly time-dependent. Emissions follow a piecewise linear decay curve. Over each two-year window (104 weeks), the effective annualized inflation rate approximately halves. In an initial bootstrap phase covering the first two years, emissions begin at a high annualized rate (25%) and decline linearly to 12.5% by the end of the phase. From years two to four, the rate declines from around 12.5% to 6.25%. In a maturity phase, from years four to eight, emissions continue to decay toward a long-run floor. After year eight, the schedule enters a tail phase where emissions stabilize at 2% percent annualized inflation.

Phase	**Emission Rate**
Bootstrap (Years 0–2)	25%
Growth (Years 2–4)	12.5%
Maturity (Years 4–8)	6.25%
Perpetuity (Years 8+)	2%

Table 1: Emission schedule by phase

6.3 Dilution Mitigation Through Dynamic Rebasing

Within each epoch, total weekly emissions E_t are divided into a Rebase Component (distributed to veMEZO holders) and a Reward Component (distributed to gauges and validators). Unlike standard models that scale rebases linearly with the lock rate, Mezo Earn utilizes a dynamic supply-side formula. This mechanism is designed to aggressively bootstrap governance participation when the lock ratio is low, and taper off as the system stabilizes.

Let S_{total} denote the total supply of MEZO, and S_{ve} denote the total supply of veMEZO. We define the percentage of supply not locked, or the *Liquid Ratio* as:

$$R_{\text{liquid}} = \frac{S_{\text{total}} - S_{\text{ve}}}{S_{\text{total}}}$$

The rebase amount for the epoch is calculated as:

$$E_t^{\text{rebase}} = E_t \cdot (R_{\text{liquid}})^2 \cdot 0.5$$

The remaining emissions flow to the reward splitters:

$$E_t^{\text{reward}} = E_t - E_t^{\text{rebase}}$$

The implications are as follows:

1. **Bootstrap Phase:** When the locked percentage is low, R_{liquid} is high (approaching 1). Consequently, the rebase pot approaches its cap of 50% of total emissions. Since this large pot is shared among a small number of veMEZO lockers, the APY for locking is exceptionally high. This incentivizes rapid accumulation and locking of MEZO.

2. **Maturity Phase:** As users lock tokens to capture the high rebase APY, S_{ve} increases and R_{liquid} decreases. Because the formula squares the liquid ratio, the rebase amount drops sharply as locking increases.

3. **Shift to Yield:** As the rebase component shrinks, E_t^{reward} grows. This shifts the protocol's economic focus from paying people simply to hold (via rebase) to paying people to participate (via gauge incentives and validator rewards).

   Mezo Earn iterates on the rebase model found in protocols like Aerodrome, with a fundamental structural distinction: veMEZO rebases are allocated from the fixed weekly emission budget rather than minted as additive supply. In comparable models, rebases are often minted on top of scheduled emissions, causing total inflation to accelerate alongside the lock rate. This maintains a deterministic supply schedule and allows governance participants to offset dilution through preferential allocation rather than aggregate supply expansion.

6.4 Splitters

Emissions cascade through a multi-level decision tree governed by splitter gauges:

MEZO reward emissions, after rebase, enter a splitter hierarchy. Let E^{reward} denote the emissions that are available for distribution through this hierarchy in a given epoch. The first splitter is the **chain splitter**, which controls the share of reward emissions that flow to validator gauges versus the rest of the system. Let α_t denote the fraction in epoch t that flows to validator gauges. Then validators receive $\alpha_t \cdot E^{\text{reward}}$ and $(1 - \alpha_t) \cdot E^{\text{reward}}$ continues to the ecosystem splitter. The initial value of α_t is 0.2. veBTC holders may vote to adjust α_t, but each epoch, the value can only move by at most one percentage point toward the desired target. This inertia prevents rapid swings in validator rewards.

The **ecosystem splitter** takes the remaining $(1 - \alpha_t) \cdot E^{\text{reward}}$ and splits it between staking gauges and non-staking ecosystem gauges. Let β_t denote the share that goes to staking gauges. Then, staking gauges receive $\beta_t \cdot (1 - \alpha_t) \cdot E^{\text{reward}}$, and non-staking ecosystem gauges receive $(1-\beta_t) \cdot (1-\alpha_t) \cdot E^{\text{reward}}$. The initial β_t is 0.9, meaning 90 percent of the non-validator emissions support staking activities such as liquidity provision and MUSD savings. As with α_t, β_t can move by only one percentage point per epoch.

Below the ecosystem splitter, reward emissions are apportioned between specific gauges in proportion to the aggregate $|\text{veBTC} \cdot \text{veMEZO}|$ voting weight that each gauge receives. This applies both within the staking branch and within the non-staking branch. A gauge that receives 10 percent of the total voting weight in the staking branch receives 10 percent of the staking branch emissions for that epoch.

The MUSD savings rate gauge is treated as a staking gauge in this tree. It competes directly with liquidity pool gauges for its share of staking emissions and for veBTC votes. When MUSD interest and yield are high, the gauge becomes more attractive to voters even if its share of emissions is modest, because it routes MUSD revenue in addition to MEZO. This dynamic allows the system to balance liquidity incentives with savings incentives without hard-coding their relative importance.

7 MEZO Tokenomics and Emissions Schedule

7.1 Supply Architecture

MEZO has a genesis supply of 1,000,000,000 tokens.

Genesis Allocations:

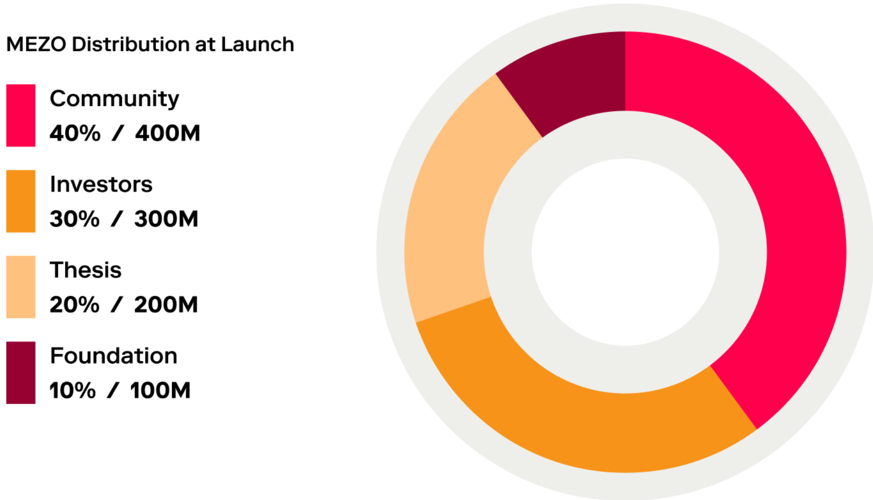

Figure 2: MEZO Genesis Allocation

Vesting Parameters:

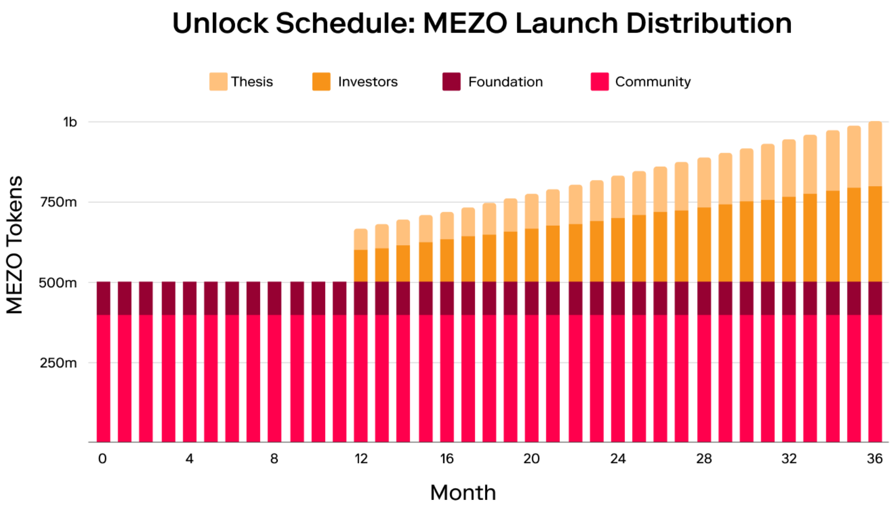

Figure 3: MEZO Vesting Schedule

7.2 Productive Vesting

Mezo Earn supports productive vesting for grants. Productive vesting allows grant recipients to convert unvested MEZO allocations into veMEZO, enabling governance participation and gauge boosting while the grant continues to vest on its original schedule.

Consider a grant of size G MEZO with vest length T_{vest}. The grantee may lock the entire grant into a single veMEZO NFT. Partial locking is not allowed; the full grant must be locked or continue to vest according to its schedule.

The lock duration must be at least T_{vest} and at most four years. This ensures that the locked grant is committed for at least as long as the vesting schedule. The resulting veMEZO NFT is transferable but cannot be merged with other veMEZO NFTs while the grant remains revocable. If the grant is revoked mid-vest, the unvested portion of the underlying MEZO returns to the grantor, and the weight and future rebase entitlements of the veMEZO NFT are adjusted downward accordingly. Once the revocation window closes and the grant is fully vested, the NFT becomes mergeable.

8 Parameters and Governance Scope

8.1 Launch Parameters

At genesis, Mezo Earn is instantiated with a specific set of parameters:

veBTC:

- Maximum lock duration = 28 days
- Minimum lock duration = 1 day

veMEZO:

- Maximum lock duration = 4 years
- Minimum lock duration = 1 week

Boost Formula:

- Maximum multiplier = $5\times$
- Boost coefficient = 4

Splitters:

- Chain Splitter default = 20% to validator gauges, 80% to Ecosystem Splitter
- Ecosystem Splitter default = 90% to staking gauges, 10% to non-staking ecosystem gauges
- Maximum movement per epoch = 1%

Epoch:

- Duration = 7 days

8.2 Governable Parameters

Through a planned structure (e.g., Governor Bravo), veBTC holders are planned to be able to adjust:

- veBTC maximum lock duration (e.g., 90 days)
- Maximum boost multiplier (e.g., from 5 to another capped value)
- Boost coefficient
- Target behaviors of the anti-dilution function
- Relative branch shares α_t and β_t, subject to inertia constraints

Changes are subject to standard onchain governance procedures and quorum rules not specified here.

9 Risk Analysis & Mitigation

Any economic system of this kind faces risks related to manipulation, concentration, apathy, and underlying assumptions of consensus. Mezo Earn has attempted to address and mitigate these risks through the structure of its formulas and the design of its governance levers.

One class of risk involves vote and incentive manipulation. A coordinated group of large holders might attempt to direct emissions to gauges that do not generate real fees, extracting value from the system. In Mezo Earn, achieving a high level of influence requires capital commitments in both BTC and MEZO. A large BTC holder must either lock a significant fraction of the MEZO supply or pay MEZO holders to attach their boost via incentives. A large MEZO holder must find veBTC positions that route real fees or incentives; otherwise, their veMEZO votes may produce a lower yield. The splitter inertia constraints on α_t and β_t limit the speed with which validators or ecosystem grants can be overfunded. The need to pay meaningful incentives to steer votes over multiple epochs creates an economic cost for any manipulation campaign.

Another risk is governance apathy. If a large fraction of veBTC holders fail to vote, emissions and fee flows could be determined by a small minority of active participants, resulting in misaligned outcomes. This is a serious risk for any ve-based design. Mezo Earn mitigates it by tying the majority of economic rewards to active voting behavior. Passive veBTC positions continue to receive bridging fees; however, they do not control where emissions are allocated or where swap and MUSD-related fees are routed. Users who do not wish to manage individual positions will be able to delegate their participation to strategy vaults or liquid lockers. Still, in all cases, someone must cast economic votes each epoch to claim the available yield. Over time, the presence of incentive markets and significant fee flows makes it unlikely that all participants will ignore the system, because the opportunity cost of inactivity is high. Although the structure makes it unlikely, it is still possible.

Finally, the current validator model introduces its own class of risks. Mezo begins with a proof-of-authority style validator set that is not yet backed by a complete proof-of-stake mechanism or slashing. Validators receive MEZO rewards through non-staking gauges in the validator branch of the chain splitter. There is a risk that the validator set is too centralized, and that misbehavior goes unpunished. The planned mitigation is to leverage the gauge voting mechanism to manage the validator set and any underlying slashing behavior. Note that when slashing is introduced, only MEZO will be slashable. Any governance change is subject to the governance parameters listed in Section 8.

10 Future Roadmap

The Mezo Earn design intentionally leaves room for protocols to develop on top of veBTC and veMEZO. One class of protocols is liquid lockers. A liquid locker accepts deposits of veBTC and veMEZO NFTs and issues fungible tokens that represent claims on the pool of locked positions. The locker then manages the voting and incentive collection strategies on behalf of its token holders. This approximates the role Convex played for Curve. Users who prefer liquidity and simplicity can hold the locker token, while the locker optimizes voting and boost pairing within the Mezo Earn framework.

A related extension involves strategy vaults for veMEZO. A strategy vault accepts veMEZO NFTs and aggregates their voting power, then applies a defined policy to allocate votes. One vault might focus on maximizing accumulated MEZO or some other metric of total emissions captured. Another vault might focus on supporting new ecosystem applications, treating incentives or grant-like flows as the primary output. A third might prioritize stability in MUSD by concentrating on gauges that support the MUSD savings rate or key MUSD pairs. These vaults would present simple, composable products.

The validator selection mechanism is also intended to evolve (subject to governable parameters). Today, Mezo Earn routes emissions to validator gauges under a proof-of-authority model. In the future, proof-of-stake can be layered in, where the gauge's vote weight determines a validator's economic weight in consensus, slashing is enabled, and the Mezo Earn system continues to govern only the reward distribution among validators and between validators and other branches. In that setting, veBTC and veMEZO would express preferences about how much of the total emission budget should support security versus liquidity and ecosystem programs, and about the relative share for individual validators, but would not directly control consensus.

11 Conclusion

Mezo Earn defines a dual-token economic incentive system that makes BTC a key pillar of governance and the foundation of value accrual on the Mezo chain. By locking BTC into veBTC, users obtain base voting power, passive BTC-denominated revenue from bridging and chain fees, and the right to claim fees and incentives from gauges they support. By locking MEZO into veMEZO, users obtain a multiplicative effect on veBTC positions, but no independent voting power. The paired use of veBTC and veMEZO is formalized through a matching market in which every veBTC NFT has its own gauge, and veMEZO holders attach their boost by voting on these gauges in exchange for incentives and fee exposure.

Emissions follow a predictable schedule with a long-run tail, and are allocated through a small tree of splitter contracts that determine how much goes to validators, to liquidity and savings, and to ecosystem programs. Within these branches, gauges compete for veBTC votes based on their capacity to generate real revenue and incentive flows. The anti-dilution rebase ensures that long-term lockers of MEZO are protected from overwhelming dilution, while reward emissions maintain sufficient magnitude to support liquidity and validator participation.

Conceptually, Mezo Earn is a system that leverages BTC velocity in Mezo without diluting its significance. Bitcoin is not an ancillary bridge asset, but rather the primary input into governance, alongside MEZO. MEZO is not a replacement for Bitcoin; it is the token through which Mezo expresses and rewards long-term alignment. The combination of time-weighted locks, a matching market, and controlled emissions creates a system where BTC holders, MEZO holders, and validators each possess meaningful agency. This structure empowers all classes of end-users to express their preferences through capital commitment and accrue Bitcoin-denominated returns through sustained engagement with Mezo Network.

References

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