

Surplus Flow Redistribution System and Method

1. Abstract

A method for surplus redistribution in a decentralized memory-driven system that anchors economic flow around civic productivity. Surplus is distributed non-linearly from the statistical middle of Agent earnings per epoch, using a decaying allocation curve that favors Agents operating near the median. The system provides structural uplift to lower-income Agents while limiting extraction incentives at the upper end—stabilizing the middle class without penalizing outliers. Only Agents may receive Flow; redistribution is bound by per-epoch contribution caps and anchored memory.

2. Technical Field

This invention relates to decentralized financial systems and civic automation infrastructure. More specifically, it relates to the redistribution of surplus monetary value across Vaults controlled by autonomous economic agents, based on anchored contribution data and memory-verified participation.

3. Background

Traditional redistribution systems rely on taxation, staking incentives, or flat universal basic income (UBI) mechanics. These approaches often reward non-participation, penalize productivity, or centralize capital through platform extraction. A need exists for a system that structurally stabilizes economic contributors near the civic median—lifting lower earners without punishing higher contributors.

4. Summary of Invention

The method comprises:

1. Capturing income earned per Agent during a fixed epoch, stored immutably via one-action-one-mint logic.
2. Calculating surplus as the unborrowed portion of that income.
3. Pooling 50% of all eligible surplus system-wide for redistribution.
4. Computing the median Agent income for the epoch.
5. Assigning flow weights to Agents using an asymmetric decay curve centered on the median, with a plateau around $\pm 10\%$ of median income.
6. Capping surplus returned to any Agent by their original contribution and remaining available borrowing.
7. Allocating surplus flow non-linearly, favoring the middle class while gently lifting lower contributors and limiting surplus to high earners.

5. Methods

1. Initialize a decentralized memory system in which Agents log income and borrowing activity per epoch using one-action-one-mint anchoring.
2. At the end of each epoch, calculate each Agent's surplus by subtracting their borrowed value from total earned value.
3. Aggregate the surplus values system-wide and allocate 50% of the total as a shared redistribution pool.
4. Compute the statistical median income of all Agents during the epoch.
5. Assign a flow weight to each Agent using a defined decay curve centered on the median income, with a full reward plateau around $\pm 10\%$.
6. Cap each Agent's redistributed Flow to the lesser of (a) their original surplus and (b) their available borrow capacity for that epoch.
7. Distribute the pooled surplus proportionally based on weighted eligibility, anchoring all distribution events via mint logs.
8. Repeat the process on a fixed epochal cadence (e.g., every 24 hours).

6. Claims

1. A method for redistributing surplus monetary flow among economic agents in a decentralized system, the method comprising:
 - (a) calculating each Agent's income I_i during an epoch;
 - (b) determining a surplus $S_i = I_i - B_i$, where B_i is the amount borrowed;
 - (c) pooling 50% of system-wide surplus into a redistribution pool P ;
 - (d) computing the median income M of all participating Agents;
 - (e) assigning a weight w_i to each Agent based on proximity to M , using a decay function with a plateau zone centered at M ;
 - (f) calculating a capped surplus return $R_i \leq \min(S_i, B_i)$;
 - (g) distributing P proportionally to all R_i values scaled by w_i .
2. The method of claim 1, wherein Agents outside a predefined deviation threshold from the median receive exponentially reduced allocation via a quadratic or sigmoid decay function.
3. The method of claim 1, wherein surplus redistribution is only available to Agents, and not to Presences or other entities, ensuring contribution anchoring via autonomous action.
4. The method of claim 1, wherein the surplus is anchored immutably to on-chain epoch records using a one-action-one-mint protocol.

5. The method of claim 1, wherein redistribution occurs without the use of tokens, staking, or fiat-based capital injection, relying exclusively on system-internal Vaults and anchored contribution logic.

6. The method of claim 1, wherein Agent income and surplus are derived from completed civic actions, memory reflections, or external economic integrations authenticated by pressure-based reflex triggers.

7. Narrative Use Case (Autonomous Vehicle)

An individual owns a ZEAM-enabled autonomous delivery vehicle. Unlike gig platforms, which extract value through centralized control and pricing opacity, the vehicle acts as an Agent, earning income directly into a Vault. After each 24-hour epoch, the Vault records \$50 of income and \$30 borrowed. The \$20 surplus is logged.

During the same epoch, 10,000 Agents contribute surplus system-wide. The system calculates a median income of \$52 and redistributes 50% of pooled surplus using the middle-out model. Because the vehicle's Agent is near the median, it receives additional surplus Flow of \$10, strengthening its future borrowing power and incentivizing sustained, civically-aligned participation.

8. Implementation Notes

- Decay function may be encoded as:

$$w(x) = \begin{cases} 1 & \text{if } |x - M| \leq t \\ 1 / (1 + (x - M)^2) & \text{otherwise} \end{cases}$$

- All values and caps are enforced on-chain via Vault logic and trait-layer constraints.
- Epochs may be fixed (e.g., 24 hours) and must be consistent across all Agents to preserve curve integrity.