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Designing Token Economies with Less Inflation and Inequality in the Absence of State and Central Bank: Experimental Liberal Anarchist Token Smart Contract

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ABSTRACT

Token-based digital economies operating without a central bank present both an opportunity and a challenge in the post-fiat era. In the absence of monetary authorities, decentralized economies must rely on endogenous mechanisms to control inflation, encourage circulation, and mitigate inequality. This paper presents a multidisciplinary investigation—grounded in mathematics, computer science, and economics—of such economies. We analyze token issuance dynamics, wealth distribution, and market behavior using mathematical formalism and propose smart contract-based policy mechanisms as substitutes for central bank functions. We also develop open-source Solidity codes of an experimental test token ELAT (Experimental Liberal Anarchist Token) under MIT License. This contract is part of a broader research experiment into stateless token economies**,** combining insights from mathematics, computer science, and economic theory, inspired by works of crypto-anarchist frameworks. Finally, we set the philosophical challenges and its economical rules for The Experimental Libertarian Anarchist Economical System (TELAES) in alignment with sustainable development goals, to be further discussed and developed by the scientific and policy community.

Keywords: Libertarian Anarchism, Tokenomics, Solidity Programming of Cyrptocurrency, Theoretical Economics, Economical Systems

INTRODUCTION

The emergence of blockchain and Web3 technologies has enabled decentralized economies where monetary functions—traditionally governed by central banks—are either algorithmically encoded or entirely absent. This paper explores how such systems evolve, the economic risks they present, and how to manage them using tools from abstract mathematics, algorithmic governance, and economic theory (Ostrom, 1990; Buterin, 2014).

Liberal anarchism is a hybrid political philosophy that combines the individualist foundations of classical liberalism with the anti-authoritarian principles of anarchism. While classical liberalism champions personal liberty, property rights, and voluntary association, anarchism fundamentally rejects centralized authority and coercive hierarchies. Liberal anarchists argue that a stateless society can maintain order and justice through decentralized legal systems, market-based institutions, and mutual contracts rather than state-imposed laws (Long, 2008). Unlike collectivist strands of anarchism, liberal anarchism preserves the liberal emphasis on self-ownership and private property—so long as these do not involve coercive or monopolistic arrangements. This approach envisions a society where governance emerges from bottom-up coordination among freely associating individuals rather than top-down state control (Chartier & Johnson, 2011).

The economic vision of liberal anarchism is rooted in market anarchism—a framework that supports competitive, voluntary exchange while rejecting both state capitalism and socialist central planning. In this model, economic coordination occurs through free markets, cooperatives, peer-to-peer systems, and decentralized technologies, all functioning without privileged legal entities or state-backed monopolies (Carson, 2010). Liberal anarchists contend that many forms of inequality and inefficiency arise not from markets per se, but from artificial scarcities and corporate privileges enforced by the state—such as patents, subsidies, and regulatory capture (Konkin, 1983). A liberal anarchist economy seeks to remove these distortions by abolishing state intervention, thereby unleashing genuinely free enterprise where innovation and cooperation flourish organically. This results in a pluralistic economy that values reciprocity, open access, and polycentric governance.

In the absence of a centralized state, liberal anarchism envisions legal systems emerging from voluntary, polycentric institutions—what some theorists describe as "private law societies" or "anarcho-capitalist legal orders" (Benson, 1990). These legal frameworks would rely on arbitration networks, reputational enforcement, and smart contracts rather than coercive monopolies. The development of distributed ledger technologies like blockchain has given new form to these ideas, enabling digital governance protocols that enforce agreements autonomously and transparently (Davidson, De Filippi, & Potts, 2018). Within this context, liberal anarchism aligns with the rise of "cryptographic jurisdictions" and "decentralized autonomous organizations" (DAOs), which offer non-state alternatives to legislation, voting, and dispute resolution (Allen, 2022). These systems reflect the liberal anarchist commitment to rule without rulers—governance without government—by encoding institutional logic into algorithmic structures that no single actor can unilaterally control.

In liberal anarchist theory, equilibrium is not achieved through centralized control or regulatory intervention but emerges spontaneously from decentralized interactions among autonomous agents. Inspired by Hayekian insights on dispersed knowledge and spontaneous order, liberal anarchists argue that social and economic coordination can arise from voluntary exchange, reputational mechanisms, and adaptive legal norms (Hayek, 1945). Unlike general equilibrium models dependent on exogenous parameters and state-guaranteed institutions, the equilibrium in a stateless society is dynamic, polycentric, and evolutionary—reflecting constant adjustments in response to shifting preferences and technological conditions (Boettke & Leeson, 2004). In such a model, blockchain technologies and smart contracts serve as distributed governance infrastructures that help stabilize expectations and reduce transaction costs, enabling a new form of equilibrium based on algorithmic trust rather than hierarchical enforcement (Catalini & Gans, 2016). This equilibrium is not static but a continuously renegotiated state of mutual coordination without coercion.

Austrian theories of spontaneous order provide a foundational pillar for understanding decentralized governance without state control. First articulated by thinkers such as Carl Menger and later developed by Friedrich Hayek and Ludwig von Mises, the concept describes how complex social and economic orders can emerge organically from the actions of self-interested individuals under conditions of institutional freedom (Hayek, 1960; Menger, 1892). Rather than relying on top-down authority, spontaneous order arises from bottom-up processes such as price signals, reputational feedback, and contractual arrangements. This framework is particularly relevant to liberal anarchism, where institutions like money, law, and markets are viewed not as constructs imposed by the state but as evolving outcomes of voluntary coordination (Boettke, 2011). The Austrian perspective challenges the presumption that stability requires centralized design, instead emphasizing the epistemic limits of planners and the adaptive efficiency of emergent orders (Vaughn, 1992). In token economies and blockchain systems, these insights reappear in algorithmic governance structures that maintain order without hierarchy.

Stateless systems can develop robust legal and monetary institutions through evolutionary pressures rather than coercive imposition. Methodological individualism taken to extremes, highlighting the need to analyze institutions as emergent, are socially embedded systems rather than mere aggregations of preferences (Hodgson, 2007). This aligns with the liberal anarchist model in recognizing that equilibrium and order can emerge not from imposed design, but from institutional learning and feedback among decentralized agents.

The search on developing an algorithmic institutionalized system for digital ecosystems in the absence of central bank has certain challenges of dealing with speculative market value and volatility. Unlike most existing cryptocurrencies that prioritize speculative value, rely on centralized governance by founding teams or DAOs, and often exhibit volatile supply patterns driven by market sentiment or mining competitiveness (Nakamoto, 2008; Buterin, 2014), the Experimental Liberal Anarchist Token (ELAT) introduces a novel paradigm of autonomous monetary logic grounded in ethical and behavioral economics (Thaler & Sunstein, 2008). ELAT is not merely a digital asset; it functions as a programmable monetary system that encodes egalitarian redistribution (via UBI), anti-hoarding policies (via decay), and dynamic monetary stability (via oracle-controlled supply modulation) directly into its smart contract architecture (Gesell, 1916; Hayek, 1976). While Bitcoin and Ethereum decouple money from the state, ELAT goes further by replacing discretionary economic decision-

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making with mathematically defined social contracts. This system reduces inequality not as an emergent result but as a design feature (Rawls, 1971; Sen, 1992). Moreover, the ELAT economy incorporates a photonic footprint model to quantify sustainability—a dimension largely absent in current blockchain ecosystems (Pai et al., 2022). Thus, ELAT differs fundamentally from existing coins by offering a governance-as-code alternative to both fiat systems and traditional crypto models, operating not as a currency but as an autonomous socio-economic organism.

Mathematical Modeling of Stateless Token Economies

Let N users generate tokens via platform activity at rate r(t). Each activity yields M tokens. The total supply evolves as:

$C(t) = \sum_{i=1}^N \int_0^t M \cdot r_i(\tau) \, d\tau$

If $r_i(t) = r$ (constant):

$C(t) = N \cdot M \cdot r \cdot t$

Token value in USD is:

$X(t) = \frac{V(t)}{C(t)}$, where $V(t)$ is the value of goods and services traded (Pareto, 1896).

Entropy of Wealth Distribution

$H(t) = -\sum_{i=1}^N p_i(t) \log p_i(t)$, where $p_i(t) = \frac{c_i(t)}{\sum c_j(t)}$ (Gini, 1912).

Topological Complexity

Simplicial complexes $\mathcal{K}(t)$ represent peer transactions; Betti numbers quantify economic connectedness.

Economic Framework

Without a central bank:

Inflation risk is unregulated (Hayek, 1976).

Wealth accumulates via early adoption or activity.

Token velocity and distribution are self-organized (Nakamoto, 2008).

Gini Coefficient

$G(t) = \frac{\sum |c_i(t) - c_j(t)|}{2N \sum c_i(t)}$

This coefficient increases over time without corrective measures (Sen, 1992).

Emission Dynamics and Inequality

Unregulated token emission typically leads to rising inequality. Simulation models indicate linear token growth results in a nonlinear rise in the Gini coefficient over time. This reflects the rich-get-richer dynamics endemic to many decentralized environments (Rawls, 1971).

Policy Mechanisms Without a Central Bank

Universal Basic Income (UBI)

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Flat token distribution to ensure participation: ci(t+1)=ci(t)+Uc_i(t+1) = c_i(t) + U

Token Decay

Balances decay over time to prevent hoarding: ci(t+1)=ci(t)·(1−δ)c_i(t+1) = c_i(t) \cdot (1 - \delta) (Gesell, 1916).

Transaction Tax & Redistribution

Tax applied to transactions, redistributed to low-balance users.

Adaptive Supply via Oracles

Real-time data adjusts supply: inflation >x> x: burn tokens, velocity <y< y: airdrop.

Tiered Rewards

Weight rewards by contribution score or verified utility.

Comparative Analysis of Policies

Table 1. Policy Mechanisms Regulating Equality/Inequality

Policy Mechanism	Reduces Inequality	Prevents Inflation	Encourages Activity	Risks
Universal Basic Income	+	-	+	Oversupply Risk
Token Decay	+	+	+	Penalizes Savers
Transaction Tax	+	+	-	Friction in Fast Economies
Adaptive Oracle Controls	+	+	+	Oracle Gaming or Latency
Tired Rewards	+	Variable	+	Complexity and Fairness

Universal Basic Income (UBI)

While UBI is effective at reducing inequality and ensuring baseline participation, it risks causing inflation if not bounded by emission constraints or offset by token sinks. Future implementations may benefit from dynamic adjustment tied to token velocity or system-wide economic indicators.

Token Decay

This policy effectively discourages hoarding and encourages spending. However, it may penalize users seeking to save or invest in the long term. A potential compromise is to apply decay selectively, based on token age or wallet balance thresholds.

Transaction Tax and Redistribution

Although effective at recycling value within the system, transaction taxes may introduce friction—particularly in high-frequency trading contexts or among liquidity providers. Designing low, predictable tax rates may mitigate these concerns.

Adaptive Oracle Controls

These policies rely on external or internal data feeds (oracles) to regulate supply. While they offer promising reactivity, they are vulnerable to oracle manipulation or latency. Using decentralized oracles with fallback mechanisms is a potential safeguard.

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Tiered Rewards

Rewarding based on contribution or merit can enhance fairness but introduces complexity. Establishing transparent, verifiable scoring mechanisms is critical to maintain user trust and prevent gaming of the system.

Purchasing Power Dynamics

Sources of Income (Token Acquisition)

Proof-of-Labor: Each member can mint a fixed number of tokens daily by submitting labor proof. This gives everyone the "right to earn", ensuring an egalitarian income baseline.

UBI (Universal Basic Income): Eligible or all users receive a guaranteed daily token issuance, functioning as a "monetary safety net". (Distribute Wealth to People, Marx/Engels Operator)

Oracle-triggered Stimulus (Spend Money, Keynes/ Smith Operator): When economic velocity is low, the protocol injects small amounts of liquidity directly to users. This "stabilizes stagnation cycles" and creates economic activity.

As a result everyone has access to a minimal and consistent token flow, ensuring that nobody is entirely excluded from the economy. In this system, "the right to not work" under socialist economies is recognized by the Oracle-triggered Stimulus.

Constraints on Wealth Accumulation

Decay Mechanism: Token balances shrink slightly at each transfer (if enabled). This discourages hoarding and promotes "continuous circulation", effectively penalizing inactivity.

Transaction Tax: A small portion of transferred value is taxed and can be redirected toward redistributive uses.

Oracle-triggered Burns (Enemy of Wealth, Lenin/Stalin Operator): If inflation spikes, the system dynamically burns part of every transfer, reducing aggregate supply.

As a result, large accumulations lose value unless actively used, encouraging a "use it or lose it" behavioral model. This prevents "wealth concentration" and maintains purchasing power parity.

Monetary Stability Controls

Supply is dynamically adjusted based on oracle readings:

High inflation → token burning (deflationary pressure)

Low velocity → liquidity injections (inflationary stimulus)

As a result, purchasing power remains relative, but system-wide token value is anchored by adaptive responses, limiting volatility.

Employment of Photonic Footprint for Sustainability Analysis

Every digital action, such as token mining or transaction validation, consumes electricity. To conceptualize the energy cost in physical terms, we translate energy consumption into photonic equivalents using visible light (white).

Let 1 Wh = 3600 J. The energy of a single photon at 550 nm (green/white light) is given by:

Ephoton=hcλ≈3.61×10−19 JE_{photon} = \frac{hc}{\lambda} \approx 3.61 \times 10^{-19} \text{ J}

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Thus, the number of 550 nm photons corresponding to 1 Wh is:

Nphotons=36003.61×10−19≈9.97×1021 photonsN_{photons} = \frac{3600}{3.61 \times 10^{-19}} \approx 9.97 \times 10^{21} \text{ photons}

A single watt-hour of energy expenditure in the token economy is equivalent to emitting approximately 10^{22} photons of white light (550 nm wavelength). This metric offers a novel way to interpret the carbon or physical footprint of algorithmic actions within a digital monetary system.

Other than optical interpretation of cryptomining (Pai et Al, 2022), this "photonic footprint of value exchange" can both serve as a symbolic or pedagogical indicator of resource use in decentralized economies, and also be further detailed into subcategories such as RGB or be categorized under wider light spectrum categories such as X rays, Gamma rays etc. enabling further mathematical measurement.

Since electrons move in time across the whole universe, cryptomining can be overgeneralized. Not only cryptomining in servers, but also any activity based on movement of electrons in time (dq/dt) such as neurons and redox reactions (ATP conversion into ADP etc.) in organisms can also be measured as number of photon formation in time with wavelength and frequency. This can be further studied in other studies and biocryptomining protocols in brains or whole organisms of individuals can be theoretically developed. Such protocols can even be developed for whole knowledge systems or whole world population or whole universe, if described as one single community, however as the domain of the category gets larger the mathematical operations to count or to map electron changes become nearly impossible. This approach may be applied to develop smart contracts based on electron activities in human-computer interfaces

Conclusion and The Philosophical Challenge of ELAT Economical System

Token-based communities without central banks are vulnerable to inflation and inequality, but with algorithmic policy tools—UBI, decay, taxation, oracle feedback—they can self-stabilize. Mathematics and computer science serve as new governance frameworks in the absence of traditional monetary authorities.

Actually central banks and states are also mathematical assumptions. This brings us to discussion of political economics. The system described here has both liberal and anarchist characteristics.

Liberal Elements

Voluntary exchange and individual agency are central: users choose how to act, trade, and earn.

Merit-based rewards and rational policy tools like UBI or taxation aim for fairness, echoing Rawlsian liberal justice theory.

Redistribution mechanisms (e.g., transaction tax, tiered rewards) reflect a liberal desire to protect the vulnerable while maintaining individual freedom.

Anarchist Elements:

The elimination of centralized control, especially of money issuance, channels anarchist or crypto-anarchist ideals. (Each member of the society is a type of central bank.)

Governance is algorithmic, based on decentralized smart contracts rather than state institutions.

It rejects the monopoly of currency issuance held by governments or central banks, consistent with Hayek’s vision of “denationalized money.”

The system employs inflation/deflation mechanism, which is hybrid and dynamic, governed by both “behavioral triggers” and “oracle-based economic indicators”.

Inflation Mechanisms (Increase in Token Supply)

Proof-of-Labor:

Every member can mint a fixed amount of ELAT once per cooldown period (e.g., daily, hourly etc).

This increases the token supply based on user activity and participation.

UBI:

Eligible (or all) users can mint tokens daily.

This introduces a "predictable baseline inflation".

Oracle-Based Stimulus:

If the token "velocity" falls below a set threshold (i.e., people are not transacting), the contract auto-mints a small amount to stimulate activity (If there is no job, create job operation of Keynes).

Deflation Mechanisms: (Reduction in Token Supply)

Token Decay:

Every time a user sends tokens, a percentage of their total balance is burned. (Transaction Burn via Oracle: If the oracle reports **inflation > threshold**, a fraction of each transfer is burned)

Simplified Liberal/Anarchist Operations Cycle

Supply grows through labor and UBI (liberal-style issuance).

Supply shrinks through burning based on velocity and inflation (anarchist-style control).

Oracle logic enables automatic monetary tuning without human intervention, simulating central bank behavior algorithmically.

This cycle can be interpreted with regards to purchasing power as below:

For active users, purchasing power is stable or grows.

For passive holders, power may erode due to decay and policy-based burns.

Community-wide, purchasing power is equalized at the bottom, capped at the top, and responsive to the economic activity.

This approach blends "equity" with "efficiency", aligning well with the liberal-anarchist ethos.

The Philosophical Challenges of The Experimental Liberal Anarchist Economical System (TELAES)

There are six main philosophical challenges of TELAES, based on the mathematical structure and codes written. We intend to further develop the mathematical structure and the codes for this experimental system by the feedback of the scientific community and the policy community.

Challenge 1. Theoretical Economics (Redefining Monetary Foundations)

ELAT model substitutes state and central bank monetary functions with mathematical and algorithmic policy design**,** effectively creating a new theoretical category of "decentralized political economy."

Value theory is reframed from external fiat assignment to endogenous utility generation**,** where value arises through participation (labor) and systemic parameters like decay and velocity.

The quantity theory of money MV=PQ is internalized through smart contracts and oracle-based supply modulation—an innovation that moves monetary control to the protocol layer.

SDG Links of Challenge 1:

SDG 16 (Peace, Justice & Strong Institutions): Redefines institutions algorithmically.

SDG 10 (Reduced Inequalities): Employs embedded redistribution logic.

Challenge 2. Macroeconomic Insights (Algorithmic Central Banking)

We emulate macro-policy tools (monetary expansion, taxation, redistribution, stimulus) in a stateless crypto economy:

Inflation Control Mechanisms

Oracle-triggered deflation mimics central bank interest rate hikes via token burns.

UBI and proof-of-labor issuance simulate fiscal expansion in Keynesian economics.

Wealth Redistribution

Decay + Taxation compresses the top-end wealth and maintains circulation—analogous to Pigouvian taxation mechanisms.

Velocity-Oriented Stimuli

When the token velocity drops, new tokens are injected — a real-time anti-stagnation policy reflecting a Keynesian automatic stabilizer.

SDG Links of Challenge 2:

SDG 8 (Decent Work & Economic Growth): Encourages productive activity.

SDG 1 (No Poverty): UBI design ensures a baseline subsistence.

Challenge 3. Behavioral Economics (Incentives & Decision Design)

The ELAT system incorporates behavioral nudges and anti-hoarding incentives that shape user behavior:

Token Decay = Negative reinforcement against inactivity (Thaler & Sunstein, 2008).

Labor Minting = Incentive-compatible structure for daily engagement.

Oracle-triggered Airdrops = Conditional rewards, mimicking behavioral conditioning loops (variable interval reward systems in gamification).

Behavioral Anchors:

Endowment Effect reduced due to decay.

Loss Aversion triggered by burn logic.

Time inconsistency mitigated via scheduled UBI and daily proofs.

SDG Links of Challenge 3:

SDG 12 (Responsible Consumption & Production): Discourages hoarding and encourages active usage.

SDG 4 (Quality Education): Potential gamified learning applications.

Challenge 4. Circular Economics (Regenerative Finance in Practice)

ELAT employs circular economy logic by integrating "resource sinks" (decay, burns) and "regenerative loops" (UBI, labor issuance):

Value creation and destruction are symmetrically encoded—preventing net accumulation in static accounts.

This mimics biological metabolism, turning TELAES into a cybernetic financial organism.

Photonic Footprint Model of the experiment may be used for sustainable accounting of energy use, echoing "ecological economics" such as photon-based capital accounting which can evolve into a blockchain-native carbon tax or energy index**.**

SDG Links of Challenge 4:

SDG 13 (Climate Action): Accounts for photonic energy use.

SDG 7 (Clean Energy): Enables energy-awareness in digital actions.

Challenge 5. Political Economy (Liberal-Anarchist Synthesis)

We outline a dualist logic between liberalism (merit, equality of opportunity, redistribution) and anarchism (voluntarism, decentralization, algorithmic authority).

TELAES model embodies Hayek's denationalized currency and Rawlsian justice theory (an unusual but effective "value duality".)

This theoretical fusion establishes "Governance-as-Code"—where rules are immutable but modifiable through decentralized protocols.

SDG Links of Challenge 5:

SDG 9 (Industry, Innovation and Infrastructure): Algorithmic governance innovation.

SDG 17 (Partnerships for the Goals): Theoretical basis for post-state global digital communities.

Challenge 6. Purchasing Power & Monetary Stability

We introduce a dynamic power-equality tradeoff model:

Active participants see preserved or rising purchasing power.

Passive holders face "decay" = erosion, mimicking negative interest rates.

Oracle-based logic ensures macro-stability by regulating excess demand or supply.

This matches post-Keynesian adaptive macroeconomics**,** using data feedback loops instead of discretionary policy.

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Table 2. Philosophical Challenges of TELAES

Economical Domain	Feature in ELAT	Academic Theory	SDG Impact
Monetary Policy	Oracle-guided supply	Central Bank Simulation	SDG 8, SDG 10
Redistribution	Tax + UBI + Decay	Rawls, Keynes	SDG 1, SDG 10
Behavioral Dynamics	Decay, Proof-of-Labor	Nudge Theory	SDG 12
Energy Awareness	Photon-based accounting	Ecological Economics	SDG 7, SDG 13
Political Theory	Liberal + Anarchist mix	Hayek + Rawls	SDG 16, SDG 17

Other Future Research Directions of the Experiment

Biocryp to economics: Our model linking ATP, photons, and electron movement suggests a neuroeconomic model of value generation may be worthy of deeper modeling in future AI-economy convergence studies.

Global Smart-Contract Governance: ELAT may serve as a prototype for decentralized microstates or tokenized commons.

Photon Taxation: It may be considered to extend the photon accounting into a taxation model reflecting the environmental cost of token transfers. (For instance, huge transactions with a potential to create high volatility may be taxed.)

10. Codes for a Liberal-Anarchist Monetary System Token under Ethereum-20 Network

We'll now define the **Experimental Liberal-Anarchist Token (ELAT)** and provide a Solidity smart contract that incorporates the core monetary policy mechanisms discussed in this study which has the following characteristics of liberal-anarchist system in tokenomics:

UBI distribution

Token decay

Transaction tax with redistribution

Oracle-based supply control

Fully modular, with all mechanisms enabled by toggles

Every member of the community can mint token by proof of labour (Members of the community can call submitLaborProof() once per cooldown period (default: 1 day), they receive a configurable reward (default: 5 ELAT), Cooldown and reward values can be adjusted by the owner by external protocols)

Also 18 decimal precision to fit into general swap mechanism

The open source codes of the ELAT Smart Contract are published with public access (Github Repo, 2025) and also provided in Annex.

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ANNEX

(ELAT Main Smart Contract in Solidity Language)

```
// SPDX-License-Identifier: MIT pragma solidity ^0.8.20;

import "@openzeppe lin/contracts/token/ERC20/ERC20.sol";

import "@openzeppe lin/contracts/access/Ownable.sol";

interface IO racle {function get Inflation Rate () external view returns (uint256);

function get Velocity () external view returns (uint256);

}contract ELAT is ERC20, Ownable {uint256 public decayRate = 100; // in basis points (100 = 1%)

uint256 public tax Rate = 100; // in basis points (100 = 1%)
```

address public tax Recipient;

uint256 public ubi Amount;

bool public decay Enabled = false;

bool public tax Enabled = false;

bool public ubi Enabled = false;

bool public oracle Control Enabled = false;

IOracle public oracle;

uint256 public inflation Threshold = 500; // 5%

uint256 public velocity Threshold = 1000; // arbitrary

mapping (address => bool) public is Eligible For UBI;

mapping (address => uint256) public last Claimed UBI;

mapping (address => uint256) public last Labor Proof;

uint256 public labor Cooldown = 1 days;

uint256 public labor Reward = 5 * 10 ** 18;

constructor () ERC20("Experimental Liberal-Anarchist Token", "ELAT") {mint (msg. sender, 1000000 * 10 ** decimals ());

tax Recipient = msg. sender;

ubi Amount = 10 * 10 ** decimals ();

}function decimals () public pure override returns (uint8) {return 18;} // Enable/disable features function toggle Decay (bool enabled) external only Owner {decay Enabled = enabled;

}function toggle Tax (bool enabled) external only Owner {Tax Enabled = enabled;

}function toggle UBI (bool enabled) external only Owner {ubi Enabled = enabled;

}function toggle Oracle Control (bool enabled) external only Owner {Oracle Control Enabled = enabled;

}function set Oracle (address oracle) external only Owner {oracle = IOracle (oracle);

}function set UBI Amount (uint256 amount) external only Owner {ubi Amount = amount;

}function set Tax Recipient (address recipient) external only Owner {tax Recipient =recipient;

}function set Decay Rate (uint256 rate) external only Owner {decay Rate = rate;

}function set Tax Rate (uint256 rate) external only Owner {tax Rate = rate;

}function set Thresholds (uint256 inflation, uint256 velocity) external only Owner {inflation Threshold = inflation; velocity Thres hold = velocity;} // Labor-based minting (Proof-of-Labor)

function submit Labor Proof () external {require (block. timestamp >= last Labor Proof [msg. sender] + labor Cooldown, "Wait for cooldown"); mint (msg. sender, labor Reward); last Labor Proof [msg. sender] = block. timestamp;}

function set Labor Reward (uint256 reward) external only Owner {labor Reward = reward;} function set Labor Cooldown (uint256 cooldown) external only Owner {labor Cooldown = cooldown;} // UBI distribution

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function claim UBI () external {require (ubi Enabled, "UBI not enabled"); require (is Eligible For UBI [msg. sender], "Not eligible for UBI"); require (block. timestamp >= last Claimed UBI [msg. sender] + 1 days, "UBI can be claimed once per day"); mint (msg. sender, ubi Amount); last Claimed UBI [msg. sender] = block. timestamp;}

function set Eligibility (address user, bool eligible) external only Owner {is Eligible For UBI[user] = eligible;} // Override transfer to apply decay and tax

function transfer (address sender, address recipient, uint256 amount) internal override {if (oracle Control Enabled) {uint256 inflation = oracle. Get Inflation Rate (); uint256 velocity = oracle. get Velocity (); if (inflation > inflation Threshold) {uint256 burn Amount = (amount * inflation) / 10000; burn (sender, burn Amount); amount -= burn Amount;} if (velocity < velocity Threshold) {mint (sender, ubi Amount / 10); // oracle-triggered stimulus}}

if (decay Enabled) {uint256 decay = (balance Of (sender) * decay Rate) / 10000; burn (sender, decay);}

if (tax Enabled && tax Recipient != address (0)) {uint256 tax = (amount * tax Rate) / 10000; super. Transfer (sender, tax Recipient, tax); amount -= tax;} super. Transfer (sender, recipient, amount);}// Manual mint/burn (for supply control if needed)

function mint (address to, uint256 amount) external only Owner {mint (to, amount);}

function burn (address from, uint256 amount) external only Owner {burn (from, amount);}}