UNX Whitepaper v1.0

December 2025

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1. Introduction & Vision

UNX Chain is a Layer-1 public blockchain developed as part of the UniMex ecosystem, designed to serve as a secure, sustainable, and solvency-aware financial infrastructure.

UNX Chain is not optimized solely for throughput or fixed supply narratives, but is built on the principle that long-term network security must be continuously funded, verifiable, and constrained by protocol-level rules.

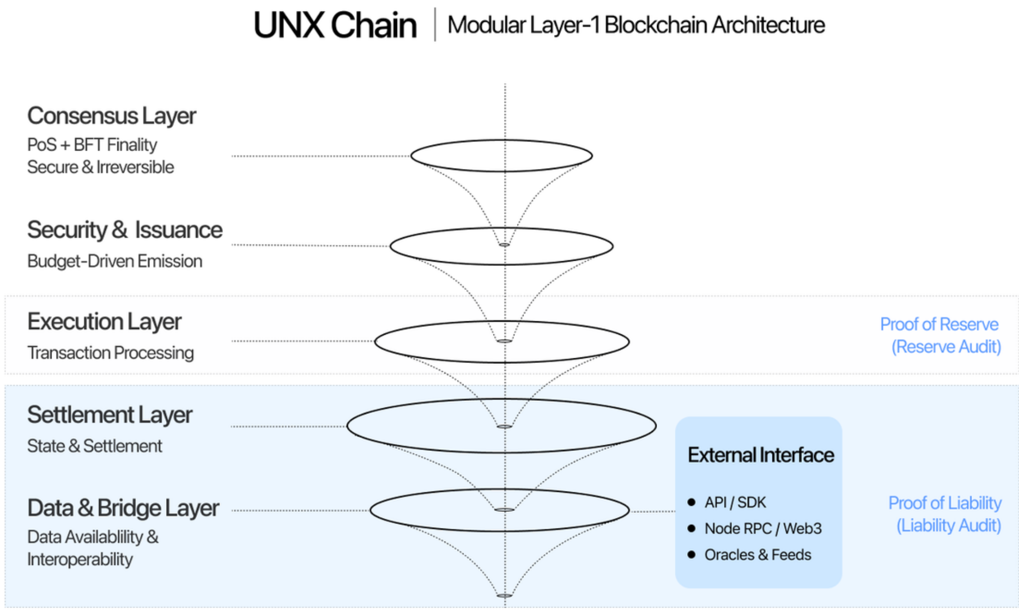
UniMex acts as an early ecosystem initiator and application builder, while UNX Chain operates as an independent public blockchain governed by protocol rules and on-chain mechanisms.

The UNX protocol introduces BFT Finality (Byzantine Fault Tolerance Finality), a security budget-driven issuance model, and a native solvency verification mechanism to support long-term financial-grade applications.

2. Network Overview

UNX is a modular Layer-1 public blockchain characterized by:

- Proof-of-Stake consensus with BFT finality
- Deterministic and irreversible state finalization
- Security-budget-driven issuance
- Native Proof of Reserves (PoR) and Proof of Liabilities (PoL)
- Modular architecture optimized for financial infrastructure



At the current stage, the UNX token will be issued in the form of **wstUNX** (Wrapped Staked UNX), which is a temporary ERC-20 compatible token standard designed to enable early ecosystem participants to engage in network building before the mainnet infrastructure goes live and during the security audit period.

The naming convention for "wstUNX" follows the industry standard for wrapped staked tokens, similar to wstETH (Wrapped Staked ETH) pioneered by liquid staking protocols. The prefix structure indicates:
- "w" = Wrapped (representing ERC-20 compatible format)
- "st" = Staked (representing locked/staking status)
- "UNX" = Native token of the protocol

Current Stage: Staking Launch Period
The UNX network is currently in the staking launch phase, which can be considered a pre-mining or validator initialization period. During this phase:
- Early participants receive wstUNX tokens representing their staked positions
- Validator infrastructure is being established and tested
- Economic parameters and security mechanisms are undergoing practical validation
- The network security threshold is being met before the final launch of the mainnet

Mainnet Migration Process

After the successful launch of the mainnet and protocol upgrade, wstUNX will be upgraded to the native UNX token through an automated conversion mechanism at the protocol level.

This phased approach ensures that network security and economic stability are prioritized before transitioning to the final native token standard.

3. Consensus Layer: PoS + BFT Finality

The UNX network adopts a consensus architecture that combines Proof of Stake (PoS) with Byzantine Fault Tolerant (BFT) finality.

Consensus Security

Prevents double-spending, chain reorganization, and malicious block production.

Economic Security

Ensures that the long-term cost of attacking the network remains higher than the potential attack rewards.

Solvency Security

Ensures that the system maintains verifiable asset coverage at all times.

BFT Finality

Byzantine Fault Tolerant (BFT) finality is a consensus property under which a block is considered *final* once it has been confirmed by validators representing ≥ 2/3 of the total stake weight.

Finalized blocks are irreversible and cannot be rolled back or reorganized.

3.1 Why UNX Chain Requires BFT Finality

The UNX Chain consensus model is not a simple PoS system, but a composite architecture consisting of:

- PoS (Proof of Stake)
- Dynamic Inflation
- Trust and Constraint Layers: PoR + PoL

Where:

- R = Verifiable Reserves (*Proof of Reserves*)
- L = Verifiable Liabilities (*Proof of Liabilities*)

This architecture introduces three categories of on-chain actions that must be irreversible:

1. Staking and Slashing
2. Inflationary Minting (Security Budget Issuance)
3. Verification of Asset and Liability States (PoR / PoL)

Without deterministic finality, any rollback of these actions would undermine both economic and solvency guarantees.

3.2 Validator Mechanism

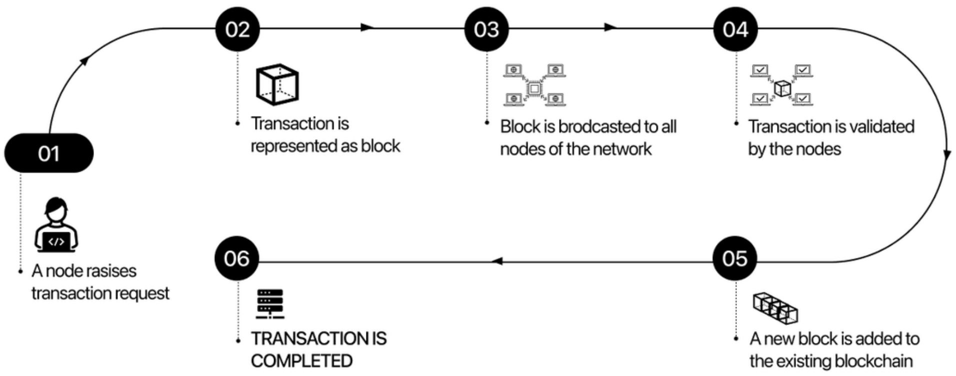
- Validators obtain block production and voting rights by staking UNX.
- Voting power is proportional to the amount of UNX staked.
- A block is considered finalized once consensus is reached by validators representing ≥ 2/3 of the total stake weight.

3.3 Slashing Mechanism

- Double-signing or equivocation: 5%–10% stake slashing.
- Prolonged downtime: 0.1%–1% stake slashing and temporary removal from the

active validator set.

- Malicious behavior: Permanent removal from the validator set.



------------------------- Slashing Mechanism --------------------------

4. Governance Framework

4.1 Governance Overview

UNX adopts an on-chain governance mechanism to manage protocol parameter adjustments, system upgrades, and emergency responses.

The core objectives of the governance framework are to:

- Ensure the predictability of protocol rules
- Prevent control of the network by any single entity
- Provide necessary coordination while preserving decentralization

UNX governance is not designed to intervene in market prices or yields, and is strictly limited to protocol-level rule management.

4.2 Governance Participants

UNX governance consists primarily of the following participants:

- **Validators:**

Participate in block production and governance voting by staking UNX.

- **Delegators:**

Delegate their voting power to validators.

- **Proposers:**

Any address that meets the minimum staking requirement may submit governance proposals.

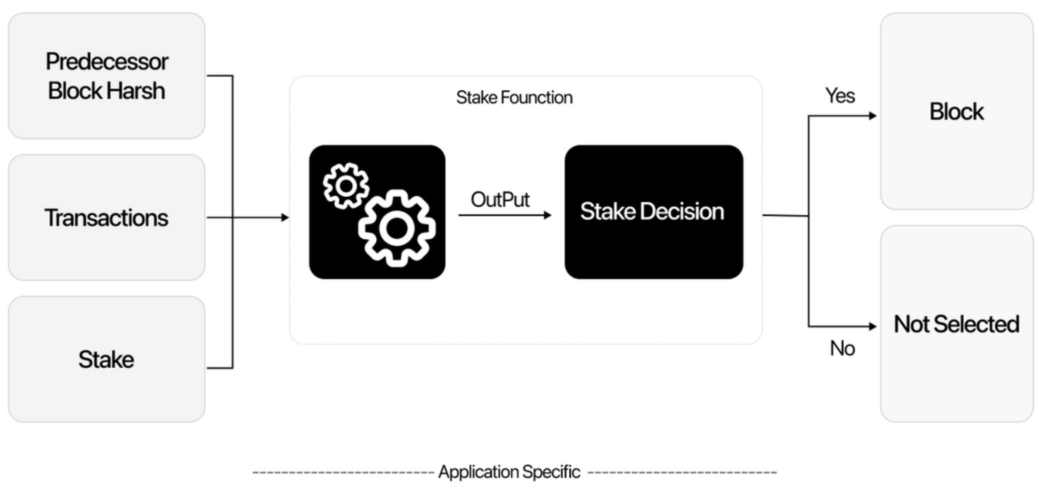
UniMex, as one of the ecosystem initiators, does not possess any unilateral governance authority at the protocol level.

4.3 Proposal Types

UNX supports the following types of governance proposals:

- Protocol parameter adjustments (e.g., inflation bounds, staking thresholds)
- Security parameter updates (e.g., slashing ratios, validator set limits)
- System upgrades and hard fork proposals
- Emergency security proposals

All proposals must undergo on-chain voting and reach the predefined approval thresholds before taking effect.



4.4 Voting & Approval Thresholds

- Voting power is weighted based on the amount of actively staked UNX.
- Standard proposals require support from ≥ 50% of the effective voting power.
- Security-related or upgrade proposals require support from ≥ 2/3 of the effective voting power.

4.5 Emergency Governance

When the network faces significant security risks, an emergency governance process may be triggered:

- Emergency proposals require approval from validators representing ≥ 2/3 of the total stake weight.
- Emergency powers are strictly limited to temporary risk mitigation.
- All emergency actions are subject to post-event public audits.

5. Security Budget & Inflation

UNX does not adopt a fixed maximum supply model. Instead, it employs a security-budget-driven dynamic issuance mechanism designed to ensure that the UNX network rapidly reaches a sufficient security threshold during the bootstrap phase.

Once the network stabilizes, issuance transitions into an algorithmically controlled inflation phase, where the issuance rate is dynamically determined by on-chain staking participation and security requirements.

Objective

The objective of adjustable inflation is to consistently allocate the security budget to stakers who provide network security, while using a target bonded ratio to transform inflationary pressure into incentives that strengthen network security.

5.1 Bootstrap Phase

- During the early stage of the network, a higher inflation rate (up to 24%) is applied.
- **Objectives**
  - Rapidly attract validators
  - Establish a sufficient economic security threshold
- Once the bootstrap phase is completed, the elevated inflation rate does not persist.

5.2 Steady State

- Annualized inflation is constrained within the range of 3%–8%.
- Inflation is not time-based, but is determined by the network's security requirements.

5.3 Validator Economics

5.3.1 Validator Role

Validators are responsible for:

- Block production
- State validation
- Participation in on-chain governance

In return, validators receive protocol-level rewards.

5.3.2 Reward Sources

Validator rewards are derived from:

- The validator allocation of protocol inflation
- Network transaction fees (if applicable)

The total amount of rewards is constrained by the security budget and the network …

6. Algorithmic Inflation

The inflation rate of UNX is dynamically determined by the following two core variables.

6.1 Core Variable Definitions

- **B**: Current bonded ratio
- **B***: Target bonded ratio
- **H**: System solvency ratio
- **I**: Current inflation rate
- Imin = 3%, Imax = 8%
- **k , k** : Adjustment coefficients

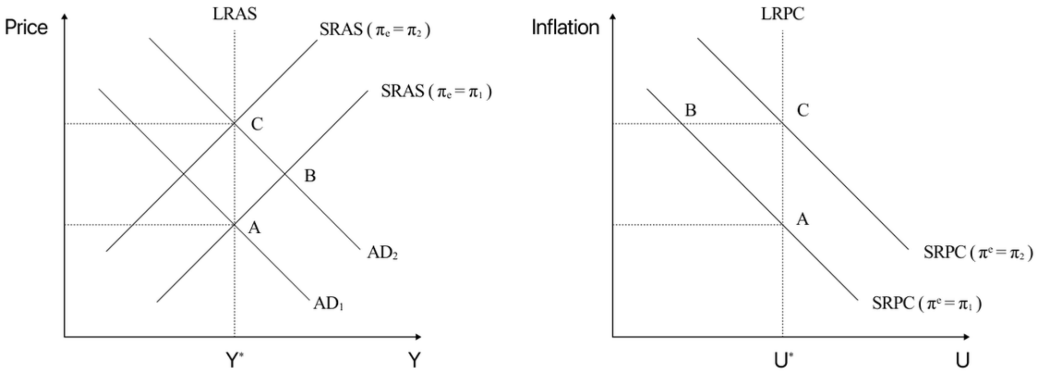
6.2 Definition of System Solvency

The system solvency ratio **H** is defined as:

H=RLH = \frac{R}{L}H=LR

Where:

- **R** represents verifiable reserves (*Proof of Reserves*)
- **L** represents verifiable liabilities (*Proof of Liabilities*)



------------------------ Inflation Adjustment -------------------------

6.3 Inflation Adjustment Formula

The inflation rate is updated algorithmically according to the following formula:

It+1=clamp(It+k1(B −Bt)+k2(1−Ht), Imin, Imax)I_{t+1} = {clamp}\Big(I_t + k_1 (B^* - B_t) + k_2 (1 - H_t),\ I_{min},\ I_{max} \Big)It+1 =clamp(It +k1 (B −Bt)+k2 (1−Ht), Imin , Imax)

Where:

- ItI_tIt is the current inflation rate
- BtB_tBt is the current bonded ratio
- B B^*B is the target bonded ratio
- HtH_tHt is the system solvency ratio
- k1,k2k_1, k_2k1 ,k2 are adjustment coefficients
- IminI_{min}Imin and ImaxI_{max}Imax define the minimum and maximum inflation bounds

6.4 Supply Projection Table (Ten-Year Terminal Supply)

UNX adopts the following combined architecture:

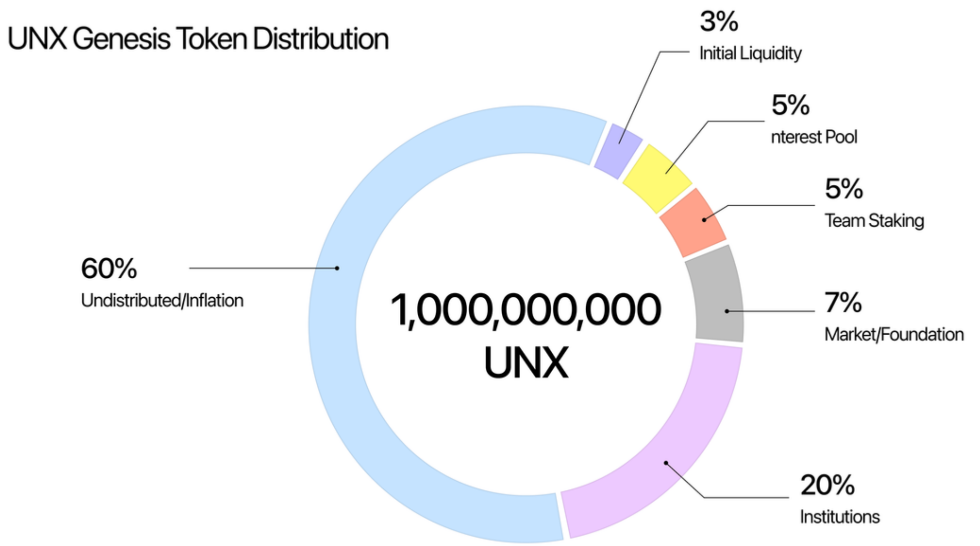
PoS as the consensus foundation

- **PoR / PoL** as the solvency and constraint layers

- **Dynamic inflation** as the security budget adjustment mechanism

UNX Genesis Supply (Initial Supply): 1,000,000,000 UNX

Maximum Inflationary Supply within the Security Budget:1,747,000,000UNX



Token Allocation：

- **Institutions: 20%**
- **Market / Foundation: 7%**
- **Team: 5%**
- **Staking Interest Pool: 5%**
- **Initial Liquidity: 3%**
- **Inflation Release: 60%***

**60% of the initial total supply will be gradually released to the market through a protocol-level inflation mechanism in the future.*

Smart Contract Address：0x49dbf80fF5DcC0CA6d9331a1C10F83b331A4E122

Release Mechanism:

- Institutions: Linear release over 60 months
- Team: Linear release over 60 months after the 12-month cliff period

Unit: UNX (rounded to whole numbers)

Year	Inflation Rate (Fixed for Y1–Y5; Dynamic Range for Y6–Y10)	Ending Supply (Steady State 3% Scenario)	Ending Supply (Steady State 6% Scenario)	Ending Supply (Steady State 8% Scenario)
1	24%	744,000,000	744,000,000	744,000,000
2	18%	877,920,000	877,920,000	877,920,000
3	14%	1,000,828,800	1,000,828,800	1,000,828,800
4	10%	1,100,911,680	1,100,911,680	1,100,911,680
5	8%	1,188,984,614	1,188,984,614	1,188,984,614
6	Dynamic (≈3/6/8%)	1,224,654,153	1,260,323,691	1,284,103,384
7	Dynamic (≈3/6/8%)	1,261,393,777	1,335,943,113	1,386,831,654

8	Dynamic (≈3/6/8%)	1,299,235,591	1,416,099,700	1,497,778,187
9	Dynamic (≈3/6/8%)	1,338,212,658	1,501,065,681	1,617,600,442
10	Dynamic (≈3/6/8%)	**1,378,359,038**	**1,591,129,622**	**1,747,008,477**

6.5 Linkage and Quantitative Summary

Consensus Layer: PoS / BFT

↓

Security Budget Layer: Inflation Incentives *(3%–8%, dynamic)*

↓

Trust and Constraint Layer: PoR + PoL

↓

Penalty & Incentive Mechanisms: Slashing / Inflation Weighting / Permission Constraints

After ten years, the total supply is expected to most likely fall within the range of 1.4 Billion UNX to 1.7 Billion UNX.

Under the neutral scenario *(steady state ≈ 6%)*, the total supply is approximately 1.6 Billion UNX.

7. Three-Layer Burn Mechanism

7.1 H-Triggered Burn (Health-Based Burn)

Trigger Condition

H=RLH = \frac{R}{L}H=LR

When:

- H ≥ H_{upper} *(e.g., 1.15)*

Interpretation

- The system reserves are significantly overcollateralized.

Actions

- A portion of inflationary issuance is redirected to:
  - Buyback and burn, or
  - Direct non-minting *(economically equivalent to burning)*

7.2 ECO Burn (Usage-Based Burn)

Sources

- Transaction fees
- Protocol service fees

Rules

- 25% of UniMex trading fees will be burned.
- 25% of contract funding rate revenue will be used for buyback and burn.
- 5% of Launchpool service fees will be burned.
- Gas revenue of the Infra will be burned.

7.3 Governance-Level Burn (Emergency / Strategic Burn)

Burn Sources:

- Treasury balances, subject to governance voting
- AML Slashing excess

UNX incorporates a controlled burn mechanism designed to offset excess inflation without compromising network security. Burn events are strictly subordinate to the protocol's security budget and solvency constraints, and are only executed when system health indicators exceed predefined thresholds. All burn operations are finalized under BFT finality and are irreversible

8. Staking pool

Staking Rewards & Incentive Policy

8.1 Reward Schedule

Staking rewards follow a deterministic step-down schedule, with all tiers reduced by 30% every six months. This structure provides strong early-stage incentives while ensuring convergence toward a sustainable long-term reward model.

8.2 Reward Source & Distribution

Staking Pool rewards are programmatic distributions sourced from a capped incentive budget and/or protocol-defined revenue sharing. All rewards are distributed according to predefined on-chain rules.

8.3 No Yield Guarantee

Reward rates are not guaranteed and do not constitute any form of financial return commitment. Actual reward levels may adjust automatically based on incentive budget availability, network security requirements, and protocol parameters.

8.4 Risk & Adjustment Clause

The protocol reserves the ability to adjust reward parameters in response to network conditions, including but not limited to security requirements, economic sustainability, and system health metrics.

8.5 Compliance-Friendly Disclosure

Staking participation does not represent a guaranteed investment return.The protocol prioritizes network security and economic sustainability over reward levels. In the event of budget constraints or adverse network conditions, reward parameters may be reduced, paused, or terminated in accordance with protocol rules.

9. Three-Year "Formula Curve" Data Table

- Duration: 36 months
- Interest Rate Type: Monthly interest rate
- Adjustment Rules:
    - The interest rate is fixed for a period of 6 months
    - At the end of each 6-month period, the interest rate will be adjusted down to 70% of the previous period's rate
    - A total of 5 adjustments will be made
    - That is: The initial rate will apply for the first 1–6 months, and the rate after the first adjustment will apply from the 7th to the 12th month, and so on.

Month Interval	Step-Down Count (n)	30-Day Tenor (Monthly Rate)	90-Day Tenor (Monthly Rate)	180-Day Tenor (Monthly Rate)	360-Day Tenor (Monthly Rate)
1–6	0	12.0000%	15.0000%	19.0000%	25.0000%
7–12	1	8.4000%	10.5000%	13.3000%	17.5000%
13–18	2	5.8800%	7.3500%	9.3100%	12.2500%
19–24	3	4.1160%	5.1450%	6.5170%	8.5750%
25–30	4	2.8812%	3.6015%	4.5619%	6.0025%
31–36	5	2.0168%	2.5211%	3.1933%	4.2018%

10. Technical Comparison Between UNX and Major Public Blockchains

Dimension	UNX	Ethereum	Cosmos SDK	Solana
Chain Type	Layer-1 Public Blockchain	Layer-1 Public Blockchain	App Chain	Layer-1 Public Blockchain
Consensus	PoS + BFT Finality	PoS + Finality	Tendermint Framework BFT	PoH + PoS
Finality	Deterministic	Deterministic	Deterministic	Quasi-Deterministic

Inflation Logic	Security-Budget-Driven	Fixed Rules + EIPs	Fixed Parameters	Fixed Parameters
PoR / PoL	Natively Supported	Non-Native	Non-Native	Non-Native
Economic Security	Dynamically Adjusted	Static Parameters	Static Parameters	Static Parameters
Architecture Paradigm	Modular Layer-1	Monolithic Layer-1	Multi-Chain Architecture	High-Performance Monolithic
Financial-Grade Positioning	Strong	Medium	Application-Dependent	Medium

11. UNX 12–24 Month Technical Roadmap

Phase 1 | Core Mainnet Phase (0–6 Months)

- Mainnet launch with PoS + BFT Finality
- Activation of staking and slashing mechanisms
- Initial inflation and reward parameters go live
- Deployment of the PoR / PoL framework *(read-only mode)*

Phase 2 | Economic & Solvency Reinforcement Phase (6–12 Months)

- PoR / PoL integrated as inputs to economic parameters
- Activation of inflation–burn linkage logic
- Full handover of incentive budgets to the staking pool
- Enablement of the on-chain governance module

Phase 3 | Financial Infrastructure Phase (12–18 Months)

- Native DEX and settlement modules
- Cross-chain bridges and asset mapping
- Advanced staking strategies *(lock-up staking, delegation)*

Phase 4 | Modular Expansion Phase (18–24 Months)

- Application sub-modules and rollup support
- Integration of external asset PoR / PoL
- Performance and scalability optimizations

12. Non-Security Disclaimer

UNX is a utility token designed to facilitate protocol-level functions within the UNX network, including but not limited to staking participation, network security, governance coordination, and protocol operations。UNX is not offered or sold as a security or investment product. Nothing in this document constitutes an offer of securities, investment advice, or a solicitation for investment. Any protocol incentives or rewards are utility-based, budget-constrained, and subject to protocol-defined rules.

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