



INUCHAIN

STABILITY. YIELD. SCALABILITY.
APRIL 2025

ABSTRACT

Despite the clear need for a cryptocurrency with predictable pricing and a decentralized nature, the path to its mass adoption remains uncertain. Currency is more than just a medium of exchange; it's a network. Its strength depends on the number of users and its accessibility in everyday transactions. We introduce InuChain – a blockchain protocol that combines stability, sustainable yield, and an efficient incentive economy.

The native asset DOG provides a portion of the collateral for the algorithmic stablecoin, with 60-80% of its stability ensured by a mechanism based on managed long and short positions in leading digital assets such as BTC, ETH, SOL, and others. The yield generated from these positions strengthens stability and expands issuance capabilities.

InuChain doesn't just combat volatility—it transforms it into an asset. At the same time, the protocol actively incentivizes growth through a fair system for funding applications and communities. We are creating not just a stable currency, but a platform capable of becoming the foundation for a new generation of financial Internet.

1. INTRODUCTION

The high volatility of cryptocurrencies has long been an obstacle to their application in the real economy. It's difficult to transact with an asset that can double in price today and crash tomorrow. This is particularly acute when used in debt obligations, salary contracts, or mortgages—where the exchange rate cannot change without consequences.

InuChain addresses this problem systemically. We propose an architecture where stability is achieved not only through elastic monetary policy, but also through strategic decentralized yield. Instead of relying entirely on DOG collateral, InuChain uses a hybrid mechanism: only 20-40% of the collateral is backed by DOG, with the remainder coming from synthetic yield derived from short positions in popular cryptocurrencies and long positions in stablecoins. This approach not only reduces risks but also opens a scalable path to the sustainable expansion of DogUSD issuance.

DogUSD issuance. But stability is just the beginning. To be useful, a currency must be adopted. The InuChain protocol incorporates an incentive economy, where funds from yield and seigniorage are directed into a transparent system of subsidies and grants. Applications and projects that develop the InuChain ecosystem receive support from the DAO treasury based on meritocracy: the higher the efficiency and growth, the more resources they receive.

In other words, InuChain combines the best of the crypto world – decentralization, price stability, and scalability—with a real growth model. We are confident that InuChain will become the foundation of a new economy: more open, sustainable, and efficient.

2. INUCHAIN'S MULTI-CURRENCY STABILITY MECHANISM

For an algorithmic stablecoin to function effectively, three key questions must be addressed:

- What do we consider stability? To which asset should the price be pegged for the stablecoin to be useful to the widest possible audience?
- How is this stability measured? How do we obtain reliable prices if external markets are outside the blockchain's control?
- How is stability achieved and maintained? What market instruments are used to return the price to its target level?

2.1 DEFINING STABILITY THROUGH A MULTI-CURRENCY BASKET

The primary goal of DogUSD is to preserve purchasing power. People spend money within countries, which means a stablecoin should be pegged not only to the US dollar but also to other fiat currencies that users interact with daily. For global applicability, InuChain is launching a whole line of stablecoins, each tracking the exchange rate of a specific fiat currency: DogUSD, DogEUR, DogJPY, and so on.

The flagship remains DogSDR—a stablecoin pegged to a basket of international reserve currencies (analogous to the IMF's SDR). It exhibits the least volatility relative to any single currency and will be used for settlements, validator rewards, and subsidies.

Each currency in the InuChain family possesses mutual liquidity through instant atomic swaps. This allows users, for example, to instantly exchange DogKRW for DogUSD at the current interbank rate. This mechanism strengthens the resilience of the entire ecosystem: a drop in demand for one currency is offset by demand for others.

Thus, InuChain doesn't just maintain the stability of each individual currency; it forms a global, interconnected economy.

2.2 MEASURING STABILITY THROUGH DECENTRALIZED ORACLES

Since the exchange rates of Dog-currencies are determined by external markets, InuChain relies on a decentralized oracle mechanism, at the core of which are the network's validators. The essence of the oracle's operation:

- Validators submit their estimates of the current Dog-currency exchange rate relative to the corresponding fiat currency.

- Every n blocks, votes are collected, and a median value is calculated, which is accepted as the official price.

- Those whose estimates were close to the median receive rewards in DOG. Those who voted far from the median are penalized.

This mechanism works effectively due to the economic motivation of validators: any coordinated distortion of the exchange rate would result in a loss for them, as their DOG is staked and at risk of depreciation during attacks on the system.

The oracle also plays a role in adding or disabling currencies. If a new currency consistently receives enough votes, InuChain can include it in the system. If there are not enough votes, the currency is excluded.

2.3 STABILITY MECHANISM THROUGH DOG SUPPLY MANAGEMENT

When the price of a Dog-stablecoin deviates from its target, the protocol intervenes and adjusts the supply. As in classical economics:

- If the price of DogUSD falls below 1 USD → supply is reduced. This leads to a price increase.

- If the price of DogUSD rises above 1 USD → supply expands, and the price stabilizes.

Supply reduction is achieved by buying back DogUSD with DOG. Users burn DogUSD and receive DOG at a fixed rate. Expansion occurs in reverse: DOG is burned in exchange for new DogUSD.

But InuChain goes further: only 20-40% of the stablecoin is backed by DOG. The rest is covered by yield from market strategies:

- Long positions on stablecoins (USDC, USDT, etc.) provide stable yield.
- Short positions on highly liquid crypto assets (BTC, SOL, BNB, etc.) through derivative platforms reduce downside risks.

This arbitrage and yield are used to compensate for deviations and enhance the stability of DogUSD issuance.

Thus, InuChain transforms the volatility of the crypto market into a source of stability and scalability for its monetary system.

2.4 INUCHAIN VALIDATORS – A SHIELD AGAINST SHORT-TERM VOLATILITY

The InuChain network operates on an efficient Proof-of-Stake model, where validators stake DOG tokens to gain the right to process transactions and produce blocks. The more DOG staked, the higher their chances of participating in consensus and earning rewards. However, validators do more than just ensure security: they are the foundation of stability for DogUSD and the entire multi-currency line. During periods of market imbalance, InuChain uses their stake as a stabilization tool:

- When the price of DogUSD falls below parity, the system allows users to exchange DogUSD for DOG at a fixed rate. To do this, the protocol mints DOG and uses it to buy back DogUSD, burning the latter.
- When the price of DogUSD exceeds its target, users can exchange DOG for DogUSD—the system then burns DOG, reducing its total supply

This arbitrage mechanism keeps the DogUSD exchange rate within a narrow range. Arbitrageurs benefit, and the system gains stability.

Important: InuChain minimizes DOG inflation because the primary source of collateral is not DOG, but rather the yield from market strategies. DOG is mainly used as a last-resort shock absorber, similar to a "stabilization fund." This relieves pressure on long-term holders and ensures network resilience under stressful conditions.

2.5 VALIDATORS RECEIVE STABLE REWARDS

For InuChain's long-term security and growth, it's critical to ensure stable, predictable validator yields. We create conditions where staking DOG is not just profitable but sustainable across all economic phases.

Validator rewards come from two sources:

1. **Transaction Fees.** Every operation on InuChain carries a minimal fee (0.1% by default, 1% maximum), which is directed to validators. This makes InuChain more cost-effective than traditional payment solutions.
2. **Futures Basis as a Source of Yield.** The futures basis, specifically the premium of futures contracts over spot prices (contango), presents a significant opportunity for generating yield. InuChain strategically leverages this by engaging in short positions on highly liquid crypto assets like BTC and ETH when they are in contango. The profits generated from this arbitrage are then distributed to various stakeholders within the InuChain ecosystem:
 - **Yield for Stablecoin Holders:** The majority of the profit generated from futures basis arbitrage is distributed to stablecoin holders as interest income. This directly benefits users by providing a predictable return on their DogUSD holdings.
 - **Reserve Fund:** A portion of the generated revenue is directed to a reserve fund. This fund acts as an insurance policy, ensuring the stability of the stablecoin and covering any potential deviations from its peg during periods of market volatility.

○ Ecosystem Development via DAO: The remaining share of the profit is channeled into the DAO treasury, where it is then allocated through grants, subsidies, and incentives for ecosystem participants. This includes funding for liquidity in DEXs, integrations with DeFi protocols, and other initiatives that foster the growth and adoption of InuChain

To smooth out fluctuations, InuChain uses an adaptive adjustment model:

- If validator yield drops, the fee increases, or more revenue from arbitrage strategies is directed to them.
- If yield is too high, the fee may decrease, or a larger portion of the revenue is directed to reserves.

To assess the sustainability of InuChain validation from a long-term perspective, validators consider a simple equation: is the net reward from staking DOG sufficient to justify infrastructure and opportunity costs?

After fixed expenses, the profit (or loss) from validating with a single unit of staked DOG depends on the unit reward and the cost of participation. More formally, during a given time period t , profit per DOG is calculated as:

$$P(t) = \frac{\text{Total Rewards}(t)}{\text{DOG Supply}(t)} - \text{Unit Validation Cost}(t)$$

Frequent alternation between profit and loss – i.e., positive and negative $P(t)$ – would cause validator participation to fluctuate wildly. The goal of InuChain is to stabilize this equation and make validator revenue predictable and sustainable.

The key variable is unit validator reward, the first term in the formula. The more stable it is, the more attractive InuChain becomes for long-term stakers and infrastructure providers.

By default, two variables cause fluctuations in this reward:

- Total rewards (from fees and external yield mechanisms) tend to increase when the economy grows and decrease during downturns.



- DOG supply expands during contractions (to absorb stablecoin deviations) and contracts during expansions (DOG is burned when new DogUSD is issued).

Together, this makes validator income highly cyclical and vulnerable to macro trends.

To break this cycle, InuChain introduces an adaptive compensation model using two stability levers:

- Transaction fee rate (f) – affects the size of rewards.
- DOG burn rate (b) – affects DOG supply, and hence each validator's proportional shar.

The logic is simple:

- When unit rewards increase:
→ Reduce transaction fees and burn less D
- When unit rewards decrease:
→ Raise transaction fees and burn more D

This balances short-term fluctuations and aligns validator income with long-term growth of the InuChain economy

Formally, let:

- f = transaction fees at time t
- b = DOG burn rate at time t
- R = validator unit rewards at time t
- g = growth coefficient

The update mechanism is

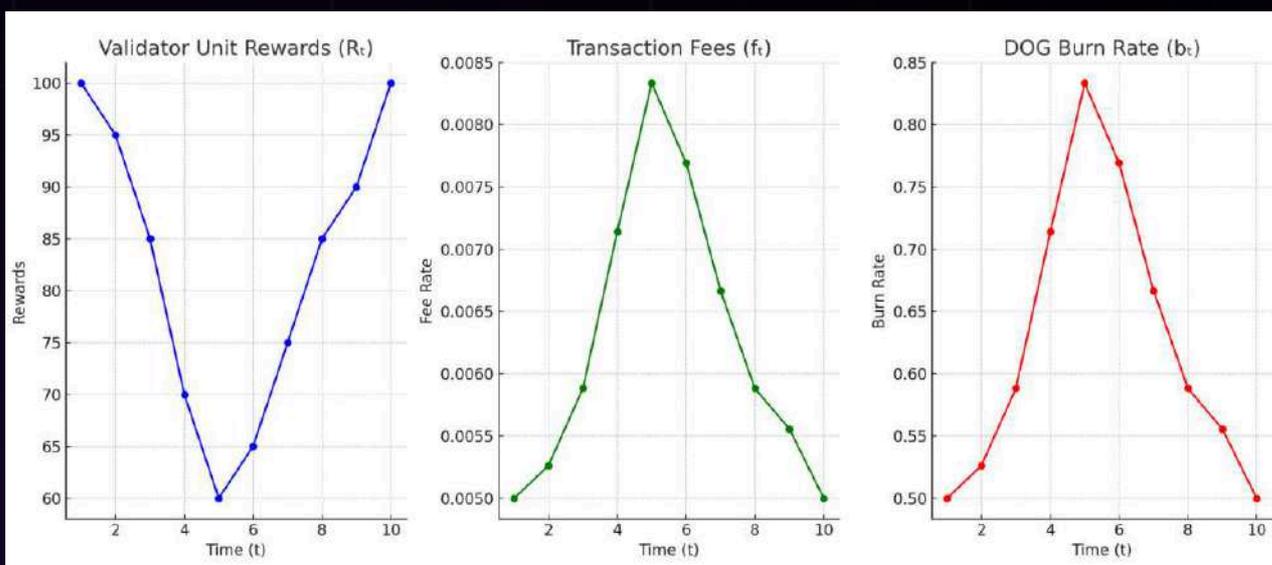
$$f_{t+1} = (1 + g) \cdot \frac{R_{t-1}}{R_t} \cdot f_t$$

$$b_{t+1} = (1 + g) \cdot \frac{R_{t-1}}{R_t} \cdot b_t$$

For example, if unit rewards are halved, fees and burn rate will double (scaled by the growth factor) – bringing stability back to validator income.

Our simulations show that even during a severe 3-year recession (e.g. 90% drop in transaction volume), this feedback system stabilizes rewards effectively – allowing InuChain to offer predictable, inflation-resistant yield for validators.

In essence, InuChain is not just a stablecoin protocol – it's a decentralized macroeconomic system, where long-term validator income is protected by adaptive and automated fiscal policy.



3. FISCAL POLICY FOR GROWTH: THE DAO-ENGINE OF INUCHAIN SCALING

One of the biggest problems for most blockchain platforms is a lack of real demand. Even with a stable currency, a protocol won't be useful if products aren't built on it, decentralized services aren't launched, and the user base doesn't grow. InuChain addresses this with a fiscal model where every unit of protocol revenue can be directed to where it creates the greatest multiplicative effect.

InuChain's primary revenue source is not DOG issuance, but rather arbitrage and algorithmic yield. Funds not used to maintain DogUSD stability go into the DAO treasury and are redistributed to fuel ecosystem growth.

3.1 INCENTIVE ECONOMY AND THE EFFICIENCY MULTIPLIER

Governments spend budgets to stimulate the economy, hoping that every invested unit will create a multiplied effect on GDP. InuChain implements the same logic, but in a programmable, transparent, and community-governed format. The DAO treasury directs funds to projects and dApps that:

- Demonstrate significant economic activity (transactions, users, retention).
- Effectively utilize previously received funding (growth for each DOG invested).
- Build real solutions: payment platforms, integrations, games, finance, infrastructure, etc.

Every token in the DAO is used for InuChain's growth. We subsidize success, not intentions.

3.2 FUNDING WEIGHT FORMULA

Let:

- TV = smoothed transaction volume of the dApp at time t
- F(t-1) = previous funding received
- ΔTV^* = difference between short- and long-term moving averages (i.e., momentum)
- $\lambda \in [0,1]$ = balance factor between scale and capital efficiency

Then the funding weight is calculated as

$$w_t = (1 - \lambda) \cdot TV_t^* + \lambda \cdot \left(\frac{\Delta TV_t^*}{F_{t-1}^*} \right)$$

Explanation:

- TV*: moving average of transaction volume (e.g., over a quarter)
- ΔTV^* : transaction volume growth trend
- F(t-1)*: moving average of past funding
- The second term reflects return on funding – how much growth the dApp generated per DOG invest

Finally, all weights w are normalized to sum to 1. For example, a dApp with weight 2 receives twice the allocation of one with weight

3.3 ADVANTAGES OF THIS MODEL

- **Objectivity and Automation:** The model does not depend on momentary political will, populism, or speculation.
- **Predictability:** Calculation parameters are transparent, fact-based, and change gradually.
- **Strong Growth Incentives:** Projects are incentivized to grow quickly, scale, and use funds wisely—otherwise, they simply won't receive future funding.
- **Trust and Decentralization:** Validators don't manage finances manually; they merely moderate incoming participants. This reduces opportunities for corruption and makes InuChain truly DAO-oriented.

In summary, InuChain's fiscal policy transforms protocol revenue into a mechanism for expansion, rather than just "dust for token holders." We are building not just a stable currency, but a growing economy where every participant—from validator to startup—is incentivized to develop the netwo

4. CONCLUSION: INUCHAIN – THE FOUNDATION OF A NEW FINANCIAL ERA

We created InuChain as a response to three key challenges of the cryptocurrency world: volatility, impracticality, and the lack of scalable growth mechanisms. Our protocol isn't just another attempt to build a stablecoin. InuChain is a system where stability is not a compromise, but an engine; where yield is not speculation, but infrastructure; and growth is not accidental, but strategy.

DogUSD and the entire line of Dog-currencies are supported not only by DOG but also by an adaptive algorithm that generates stability through revenue from market strategies. Instead of relying on a single asset, like most algorithmic stablecoins, InuChain uses short and long positions across a spectrum of assets (BTC, SOL, BNB, ETH, and others), transforming market instability into the foundation of its resilience.

Our decentralized fiscal model converts protocol yield into direct investments in the ecosystem: dApps receive support proportional to their activity and efficiency. This creates an economic multiplier effect: with each successful project, InuChain becomes more useful, stable, and scalable.

If Bitcoin gave the world absolutism, and Ethereum expressiveness, then InuChain offers applicability and sustainable growth.

We are not just building a payment system. We are creating the first-ever decentralized macroeconomy, capable of competing with state-run financial systems—in terms of efficiency, transparency, and scale.

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