Universe Dollar (UVD)

A Bitcoin Secured, Basket Indexed, Fixed Supply Stable Currency

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Abstract. Universe Dollar (UVD) is a fixed supply, Bitcoin-collateralized currency issued on a zero-knowledge rollup that anchors to the Bitcoin base layer. UVD is designed to be stable in the short term, harder in the long term, neutral between nations and trust-minimized between people. Short-term stability is achieved by indexing UVD to the Universe Reserve Basket (URB), a fixed basket of 40% gold (XAU), 30% Swiss franc (CHF) and 30% Singapore dollar (SGD). Each week, the protocol reindexes the satoshi backing of 1 UVD so that its purchasing power tracks URB within an explicit, bounded band. Long-term strengthening arises from three structural choices: (1) fixed UVD supply set at genesis so that no new units can ever be minted, (2) pure BTC collateral held in verifiable vaults anchored to Bitcoin and (3) a surplus BTC vault that accumulates excess collateral from protocol operations and favorable reindexing. As Bitcoin monetizes and appreciates relative to URB, the effective BTC backing per UVD can gradually ratchet upward, subject to strict solvency constraints. Over multi-year horizons, UVD transitions from URB-like stability to a systemically harder currency than URB itself, while remaining usable for everyday pricing. The protocol is released as open source, without admin keys, upgrade switches or kill functions. Beyond technical design, UVD is motivated by a civilizational aim: to end the recurring pattern where each empire in turn controls the unit of account, and instead root monetary gravity in a neutral base asset.

1. Introduction

1.1 The problem: monetary gravity captured by each empire in turn

For as long as complex trade has existed, there has been a dominant unit of account and a dominant issuer behind it. Historical examples include silver and gold standards in ancient kingdoms, Roman and Byzantine coinage, Venetian and Florentine bills of exchange, the Spanish silver real, the Dutch guilder, the British pound and, in the most recent cycle, the US dollar.

Each of these reserve currencies sat at the center of its era's trade network and brought real benefits: smoother long-distance commerce, common pricing and accounting, and a reference point for contracts and savings. Every empire, for a time, stabilized its world.

But the pattern repeats. First, the center gains the privilege to issue the unit of account at near-zero marginal cost. Over generations, war, crisis, politics and human nature (greed, short-termism, weak successors) lead to over-issuance and debasement. Eventually, trust erodes, capital migrates and trade gradually reorients around a new center and a new unit. Rome debased its denarii. City-states overextended credit. European powers inflated away promises through war and reconstruction.

Today, two facts are different. First, there exists a neutral, non-state base asset, Bitcoin, with a transparent, fixed issuance schedule. Second, we have programmable settlement and cryptography that allow monetary rules to be defined and enforced in code rather than in councils. The problem is not that one particular currency is uniquely bad. The problem is the recurring pattern: whenever one center owns the scale, sooner or later the scale tilts.

Universe Dollar is a proposal to break this cycle. UVD attempts this by rooting backing in Bitcoin rather than any state balance sheet and indexing to a basket spanning gold and conservative currencies from different regions, instead of anointing any single empire as the reference.

1.2 Goal: BTC at the root, fair stability at the surface

Universe Dollar aims to construct a currency that anchors to Bitcoin at the collateral and security layer, behaves like a stable currency in the short term, inherits Bitcoin's monetization in the long term, explicitly refuses to crown any single state as issuer of the global unit of account and cannot be altered or shut down by its own creators.

1.3 Ethical frame: just weights in a programmable age

Across Judaism, Christianity and Islam, three themes recur: condemnation of false scales, skepticism toward exploitative money and limits on human authority. Texts criticize dishonest weights and measures. In modern terms, silently changing the unit of account is structurally similar to moving the scale under a trader's feet.

UVD is designed so that supply cannot be increased by decree, backing is visible and auditable, and the relation between UVD, BTC and the reference basket is fixed in code, not in committees. The protocol does not claim religious status. It simply attempts to embody a straightforward idea: the scale used in trade should not secretly move to favor those closest to the mint.

2. Design goals and constraints

2.1 Design goals

1. **Stable unit of account.** UVD should exhibit relatively low volatility against a conservative reference basket in day-to-day terms. It should be suitable for denominating prices, wages and contracts.
2. **Bitcoin-rooted collateral.** All core backing is BTC. Collateral is visible as UTXOs or equivalent commitments on Bitcoin.
3. **Fixed supply.** UVD total supply is set at genesis and never increases. There is no emergency mint, bailout ability or monetary expansion lever.
4. **Deterministic rule set.** The currency's behavior is determined by explicit formulas and protocol state. The weekly reindex is algorithmic and bounded.
5. **Permissionless and censorship resistant.** Anyone able to use Bitcoin and the rollup can hold and transfer UVD.
6. **Long-term strengthening.** Over multi-year arcs, as BTC appreciates relative to the basket and surplus grows, the effective BTC backing per UVD should tend to increase.
7. **Immutability in practice.** No admin keys and no upgrade hooks for the monetary core.

3. Universe Reserve Basket (URB)

3.1 Definition

UVD does not stabilize against USD, EUR or any single state currency. Instead, it tracks the Universe Reserve Basket (URB), a supra-national index combining gold (XAU), Swiss franc (CHF) and Singapore dollar (SGD). Let the weights be $w_{\mathrm{XAU}} = 0.40$, $w_{\mathrm{CHF}} = 0.30$, $w_{\mathrm{SGD}} = 0.30$, with $\sum w_i = 1$. Intuitively, 1 URB represents a synthetic purchasing power unit composed of 40% gold, 30% CHF and 30% SGD.

3.2 Why CHF and SGD?

CHF and SGD are chosen for structural reasons. CHF is the currency of a small, export-driven state with a long-standing reputation as a Western safe haven. SGD is the currency of a small, trade-heavy city-state, managed as a band against a basket of foreign currencies and functioning as an Asian safe haven. In short: Switzerland of the West, Switzerland of the East.

3.3 BTC priced in URB units

Let $P_{\text{BTC/CHF}}(t)$, $P_{\text{BTC/SGD}}(t)$ and $P_{\text{BTC/XAU}}(t)$ be the price of 1 BTC in the respective units at week t. Then the price of BTC in URB units is:

$$P_{\text{BTC/URB}}(t) = w_{\text{XAU}} P_{\text{BTC/XAU}}(t) + w_{\text{CHF}} P_{\text{BTC/CHF}}(t) + w_{\text{SGD}} P_{\text{BTC/SGD}}(t).$$

This is the number of URB units one BTC is worth at time t.

4. Monetary model

4.1 Fixed UVD supply

At genesis, the UVD supply is defined as $N_{\max}$. By construction, $N = N_{\max}$ and never increases. Initially, a protocol Treasury address holds all UVD. UVD enters circulation only when users deposit BTC.

4.2 Satoshis per UVD

At week t, define s_t as the number of satoshis corresponding to 1 UVD. Since 1 BTC equals 10^8 satoshis, 1 UVD $\approx \frac{s_t}{10^8}$ BTC. The neutral satoshi rate making 1 UVD approximately 1 URB is:

$$s_t^{\text{neutral}} = \frac{10^8}{P_{\text{BTC/URB}}(t)}.$$

4.3 Minting and redemption

At week t with satoshi rate s_t, a user deposits x BTC into the Backing Vault. The protocol mints $x \cdot (10^8/s_t)$ UVD from Treasury. For redemption, a user sends y UVD back, and the protocol returns $y \cdot (s_t/10^8)$ BTC.

4.4 Weekly reindexing of s_t

Reindexing aligns UVD with URB and preserves solvency once per week. At week t, the protocol computes the log difference $\Delta = \ln(s_t^{\text{neutral}}/s_t)$, clamps it to a maximum bound $k_{\max}$, and applies a growth share g.

$$\tilde{s}_{t+1} = s_t \cdot \exp\big((1-g) \cdot \Delta_{\text{clamped}}\big).$$

The system checks if this new rate maintains the minimum collateral ratio $C_{\min}$. If not, s_{t+1} is adjusted to ensure solvency ($C_t \geq C_{\min}$).

5. Architecture: zero-knowledge rollup

UVD runs on a zero-knowledge rollup that anchors to Bitcoin. The rollup provides a deterministic execution environment for UVD contracts, periodic state commitments on Bitcoin, validity proofs for state transitions and an escape hatch to exit to Bitcoin in case of censorship or failure.

6. Conclusion

Universe Dollar is a proposal for a new monetary instrument: fixed maximum supply, Bitcoin-only core collateral, basket-indexed stability, and no admin keys. It is intended to be published once, open to scrutiny and criticism and then left to the world. No emperor, committee or foundation sits above it. The only authority is the code and the social consensus of those who choose to use it.

The arc of monetary history has always moved between order and abuse, stability and debasement. For the first time, we possess tools that allow us to encode the weights and measures themselves as transparent, globally verifiable rules. Universe Dollar is one attempt to write such rules on top of Bitcoin and then get out of their way.