An Inflation-Proof Dollar

USDi

A Transactable Inflation-Linked Currency

Executive Summary

USDi proposes something both simple and radical: **a transactable, inflation-linked digital currency** that keeps its real value steady over time. In a world where "stablecoins" are stable only in name — tethered to nominal dollars that quietly erode — USDi is indexed to inflation itself. One USDi always buys what one December 2024 dollar could buy. No more. No less.

The purpose is not to reinvent money, but to correct one of its most persistent flaws. Inflation distorts everything from savings decisions to wage negotiations to long-term contracts. By removing that uncertainty, USDi creates the potential for longer-term commitments, fairer pricing, and more rational markets — all without changing the way people transact.

And while there's nothing new about inflation-linked money — Chile's **Unidad de Fomento (UF)** has been doing this since 1967 — there's never been a *transactable* one. USDi brings that proven idea into the digital age, where contracts, commerce, and code can all agree on what a dollar should *really* be worth.

Vision: A Transactable Inflation-Linked Currency

It's worth remembering that Chile's UF didn't just survive inflation — it *tamed* it, by making it irrelevant in day-to-day life. In essence, the UF was a unit that always bought what 1 peso would have bought in 1967, no matter how much time had passed.[1] Imagine if your rent, your salary, and your bank balance all rose automatically with the price level. That's not a fantasy; it's an operational improvement to capitalism.

USDi's vision is to make that improvement universal — to create a currency that maintains constant purchasing power, so that saving, borrowing, or paying in USDi means the same thing tomorrow as it does today.

[1] This is assuming that prices in the economy all rose at the general rate of inflation, which of course isn't the case. However, such a unit is eminently *better* at achieving that standard than an unindexed currency.

The Efficient Frontier of Real Returns

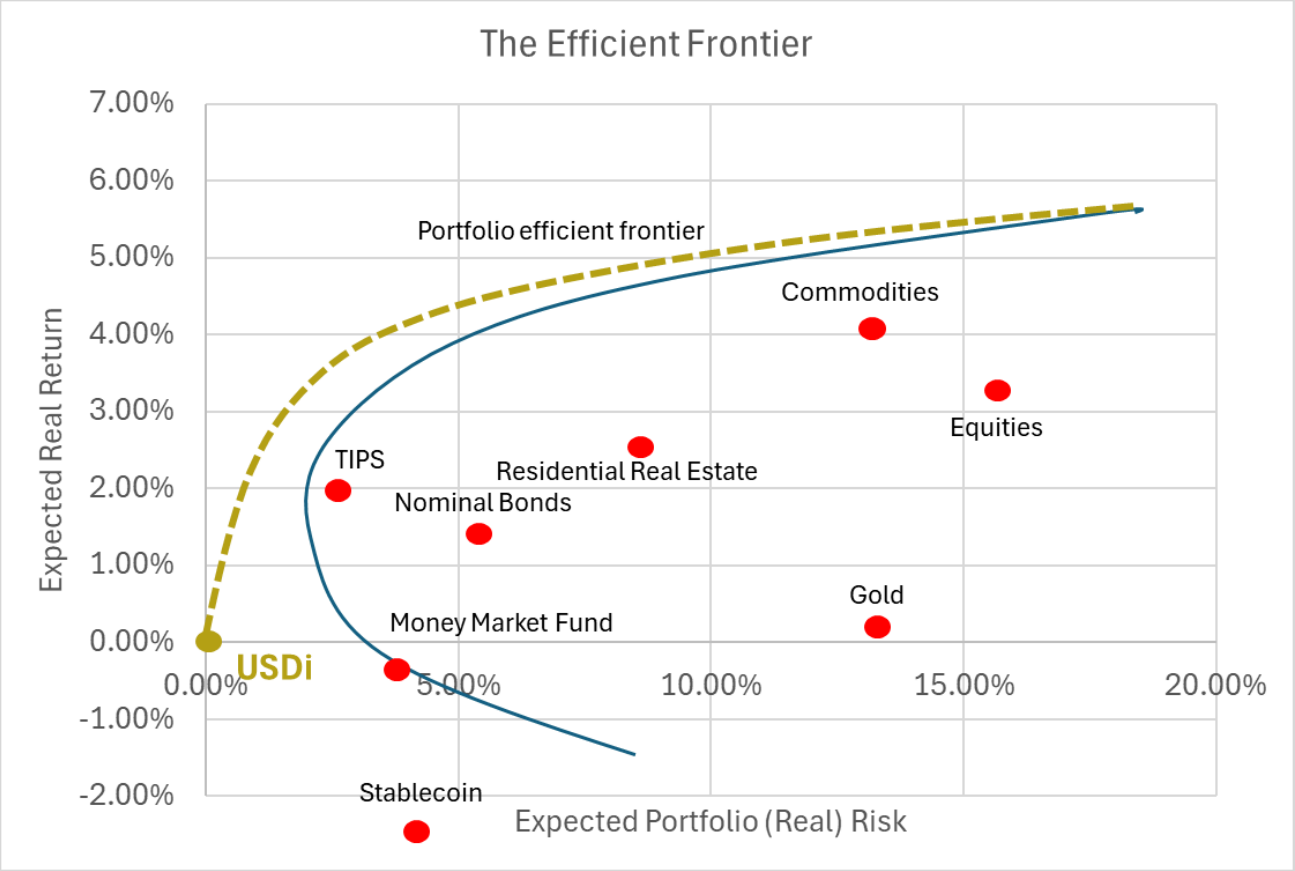

Figure 1: The Efficient Frontier. Hypothetical illustration only.

Economists and finance PhDs have long agreed — perhaps the only thing on which they *do* agree — that what matters is *real* risk and *real* return. If you were chasing nominal returns, you'd just buy stocks in the most hyperinflating economy you could find. That would make you rich in name and poor in fact.

In real space, there's currently no asset that sits at the true "risk-free" point. Treasury bills, money-market funds, and nominal bonds all have one thing in common: they lose purchasing power most of the time. An **inflation-linked cash instrument**, if it existed, would anchor the efficient frontier — the *origin asset*— zero real risk, zero real return.

That's what USDi is designed to be. Adding it to any portfolio improves the portfolio's efficiency in real terms, except perhaps for the thrill-seeker who insists on holding only volatile assets. And to be clear, USDi doesn't displace real-world assets; it completes them. Real-world assets are what investors want exposure to — USDi is simply the token that exists in the same reality.

Design Requirements

Independent and Credible Data Source

"Inflation" is one of those words that gets people animated — especially the DeFi crowd, who have good reason to distrust the way fiat currencies are managed. But not all inflation measures are created equal. Some, like the *Chapwood Index*, are so badly constructed and so short-lived that they're more cautionary tale than data source. In choosing an index on which to base USDi, there were several important considerations. Chief among them was that the issuer of the coin (USDi Partners) should have no control over the calculation of the index.[2] The index calculation agent should have credibility; the calculation of the index should be transparent; preferably it should have a long history so that there is little chance that our token could outlive the index.

USDi is built on the **Consumer Price Index (CPI)** — yes, *that* CPI. It's far from perfect, but it's the best we've got: widely followed, methodologically transparent, and validated by its close tracking with independent third party indices like PriceStats (née the Billion Prices Project). CPI has history, credibility, and perhaps most importantly, finality: once published, it's never revised. That makes it uniquely fit for a currency standard.

Choosing CPI also aligns USDi with trillions of dollars' worth of indexed securities and derivatives — Treasury Inflation-Protected Securities (TIPS), swaps, and corporate inflation-linked bonds. That deep ecosystem makes the USDi collateral market both credible and liquid, ensuring that the coin can be minted or burned in meaningful size without distortion.

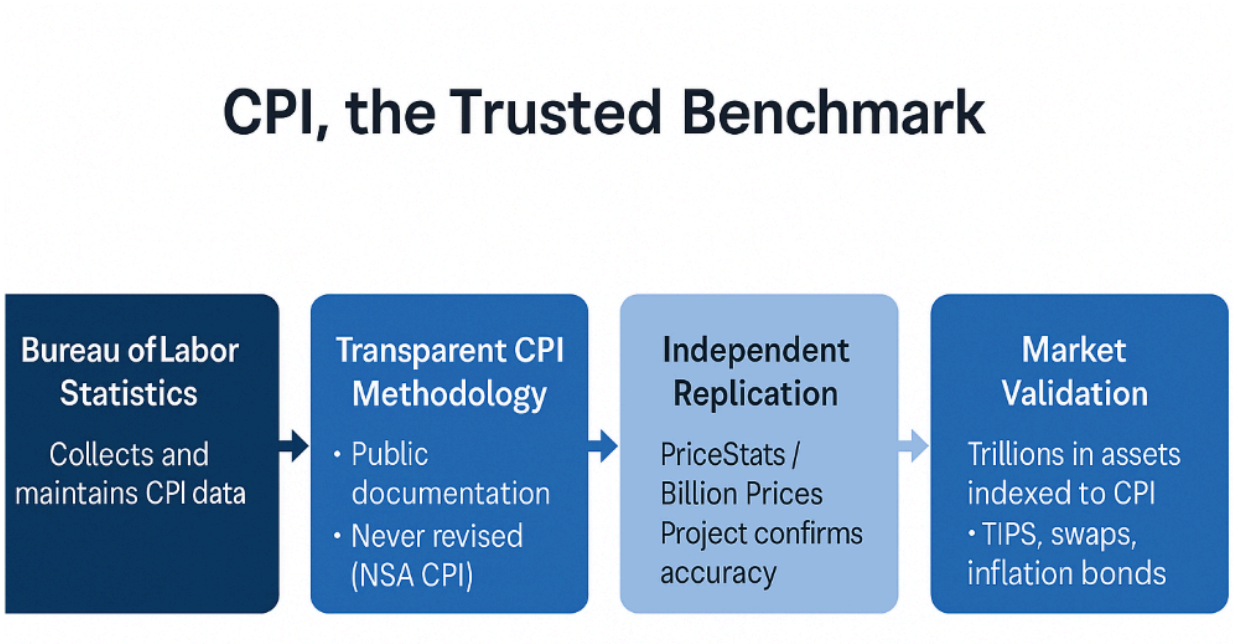

Figure 2: CPI, Data Transparency

[2] This seems like an obvious thing, but we are aware of another inflation project that has this glaring design flaw!

Backing Criteria and Mathematical Framework

Here's the crux: an inflation-linked currency has to be backed by assets that can *track inflation* closely, with minimal noise.

An inflation-indexed currency that is explicitly not a tokenized fund needs to be backed by a reserve portfolio that always covers the inflation-adjusted value; therefore it likely needs to be slightly overcollateralized since tracking the inflation-adjusted value *perfectly* is probably not feasible. Because the amount of required overcollateralization is related to the volatility of the spread between the contract index and the backing fund, crucial characteristics of the backing fund are that it has (a) a volatility that is as low as possible, in line with the volatility of the inflation index (the annualized volatility of the NSA CPI from 1990-2024 was 1.18%; from 2020-2024 it was 1.35%) and (b) a high correlation with the changes in the inflation index.

This follows from the notion that the risk of underperformance can be evaluated as the spread between the value of the indexed token ("S_A") and the value of the backing fund ("S_B"), which is simply a Margrabe option whose value (derived from Black-Scholes, assuming the distribution of both A and B are approximately normal) is

$$C = S_A\, N(d_1) - S_B\, N(d_2), \text{ where}$$

$$d_1 = \frac{\log log\left(\frac{S_A}{S_B}\right) + \left(\frac{\sigma^2}{2}\right)T}{\sigma\sqrt{T}}$$

and

$$d_2 = d_1 - \sigma\sqrt{T}$$

and, crucially, σ is the volatility of the *ratio* of A to B, which is a formula that will be familiar to travelers in traditional finance and depends on the individual asset volatilities and the correlation (ρ) between them:

$$\sigma = \sqrt{\sigma_A^2 + \sigma_B^2 - 2\rho\sigma_A\sigma_B}$$

It is easy to see that in order for this "shortfall" option to be as small as possible, asset B should have a small volatility (σ_B) and a high correlation to the inflation index (ρ). Moreover, since the value of such an option on the spread between two random-walk variables would get larger by the square root of the time covered by the option, it is important that asset B should also have a positive drift relative to the inflation index, so that the 'strike price' of the shortfall option gets farther away over time.

Low Volatility Requirement

Volatility is the silent killer of confidence. For a currency meant to represent real value, price swings undermine the entire premise. The goal, then, is simple: minimize the gap between CPI's own variance (around 1 - 2% annually) and that of the backing fund. A calm foundation makes a trustworthy currency.

Primary Liquidity Mechanism

If a currency's goal is to track inflation in real time, its market price must stay close to the underlying index value — not most of the time, but *always*. That's why USDi's mint and burn functions are exposed directly to the public. If an inflation token is to accurately protect the holder of the token against inflation during the holding period, then its price at all times must be very close to the underlying index value. If the token sometimes trades at a premium, and other times at a discount, then the holder's return is dependent not just on the change in the inflation index but also on the purchase and sale prices relative to the index.

Providing for secondary market liquidity is insufficient to insure that the token's price will always be aligned with the index: consider that in times of crisis, even off-the-run Treasury bonds have been known to trade at prices far from what would normally be considered fair value.[3] In the exchange-traded funds (ETF) ecosystem, those ETFs that rely on in-kind creation and redemption – in which authorized participants can make ETF shares by delivering the component securities, or redeem ETF shares and receive the component securities – are more likely to track their indices since if the ETF's price deviates too much it creates an arbitrage between the components and the whole. Similarly, by allowing direct minting and burning at the stated value (primary liquidity, as opposed to the secondary liquidity provided by market-makers), arbitrage concepts imply that the token's actual market value can never deviate meaningfully from the inflation index.

USDi's Primary Liquidity

The mint and burn functions of the USDi smart contract are exposed to public use, and the token may be freely minted or burned through the USDi coin website at https://usdicoin.com/coin. Mint sizes are virtually unlimited, which is feasible since the underlying reserve portfolio is extremely liquid; burn amounts less than 1-2% of the TVL per day can be done through the website or command-line interface immediately while large burn amounts are only limited by the temporal demands of the tradfi settlement process but USDi Partners will burn any amount given 24 hours' notice on a trading day. In each case, the price paid or received for a USDi token is equal to the current index value, adjusted by a very small transaction fee that mostly serves to disincentivize high-frequency trading to scalp micro-distortions in the backing token (USDC).

USDi Design and Implementation

USDi's reserve assets are held in the **Enduring US Inflation Tracking Fund**, managed by Enduring Investments — a fund built specifically to do what most "inflation hedges" fail to do: mirror CPI with low volatility.

[3] Indeed, such aberrations are part of what caused the collapse of Long Term Capital Management in September 1998 – along with ample leverage, of course.

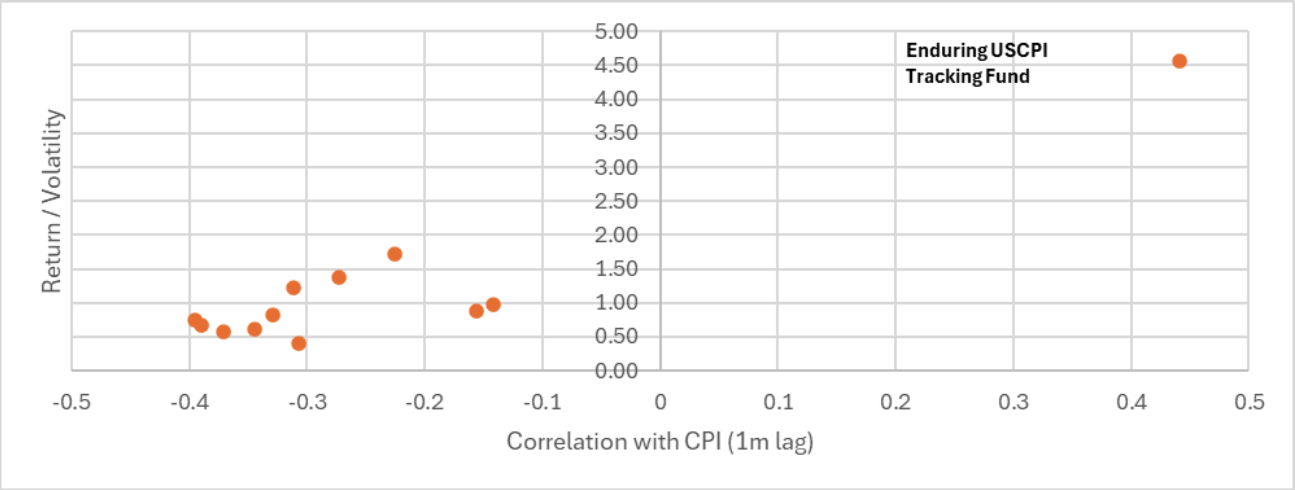

Figure 3: Enduring USDCPI Tracking Fund - comparison to market funds by fund volatility vs. CPI correlation
Other funds include VTIP, TIP, RAAX, VRAI, PDRDX, AAASX, PUDZX, RALIX, RAPIX, FSRRX, and PIRMX
Source: Bloomberg and author calculations

Since inception, the fund has shown:

- Annualized volatility: **~2.3%**
- Correlation with CPI: **~0.43**
- Monthly outperformance: **+5 to +13bps (net of fees)**[4]

That translates into a spread volatility of just ~2.1% — about one-fourth that of leading inflation ETFs. For example, the TIP ETF, often cited as the benchmark, carries an annualized volatility of 7.2% and a -0.21 correlation to CPI, implying a spread volatility of ~7.5% — nearly four times higher than USDi's reserve assets.[5] Most other inflation ETFs fare even worse. Indeed, without exception every exchange-traded fund designed to hedge against inflation has done strikingly poorly, at least in the sense of being usable as an asset to collateralize an inflation-indexed currency. The following two charts illustrate the trailing-three-year annualized volatility of a cross-section of products, and a rolling-three-year monthly correlation between each product and CPI. The Enduring fund that will collateralize USDi is shown at the far right in each case.

Because the shortfall risk is related to the volatility and correlation of the two assets (see section Backing Criteria and Mathematical Framework), the closer the fund tracks CPI, the smaller that option's value — meaning less collateral needed, more stability, and fewer surprises. USDi Partners, LLC manages the primary liquidity function to support the USDi calculated value.

[4] It has outperformed CPI by an average of 5bps per month and a median of 13bps per month, net of fees.
[5] Also, over this period TIP has underperformed inflation by an aggregate of 4% per year.

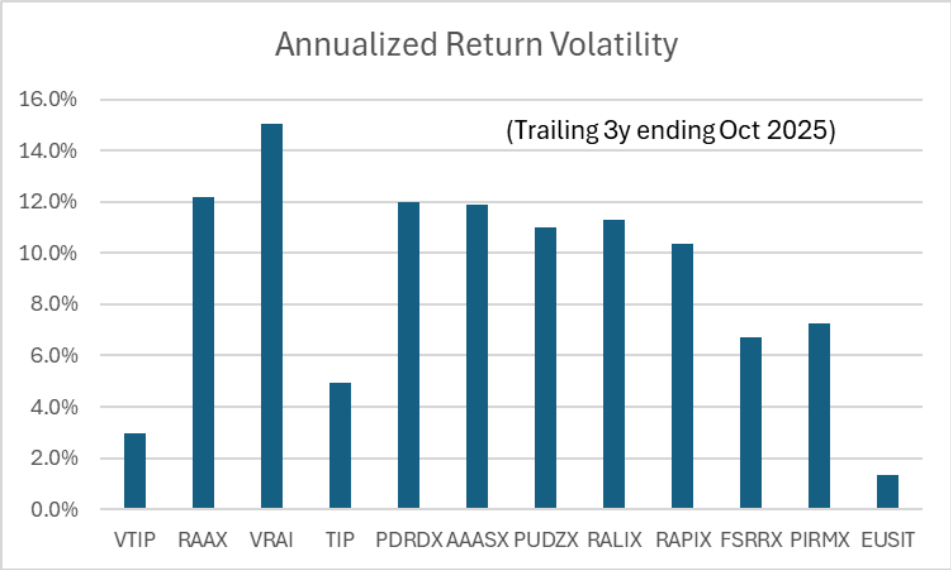

Figure 4: Annualized Return Volatility of Inflation ETFs
Compared to EUSIT, managed by Enduring Investments

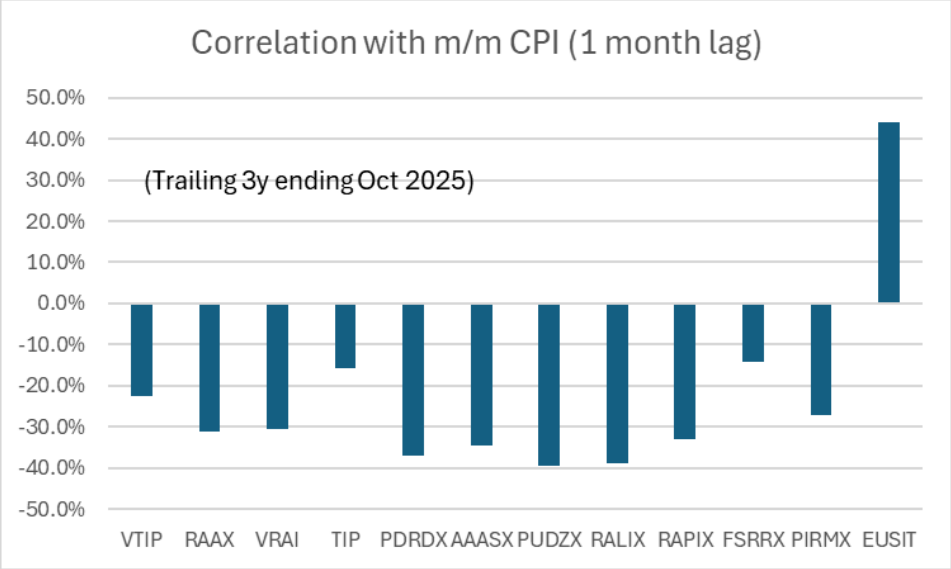

Figure 5: Inflation ETFs and Funds Correlation to CPI
Compared to EUSIT, managed by Enduring Investments

How USDi Works: CPI Reference and Calculation

USDi tracks the **Non-Seasonally Adjusted CPI for All Urban Consumers (NSA CPI)** and turns monthly data into a continuous, block-by-block inflation adjustment. It's very similar to the way TIPS accrue value daily — except that USDi accrues it every 10–15 seconds, with every Ethereum block.

Step 1: Lag and Interpolation
Because CPI is reported monthly and in arrears, USDi interpolates between the two most recent data points to produce a smooth **Reference CPI** curve.

Example:

- June CPI: 322.561
- July CPI: 323.048
- September 2, 2025 CPI reference = 1/30 x 323.048 + 29/30 x 322.561 = **322.57723**
- (Note that Table 1, sourced from a public government website, matches this result.)

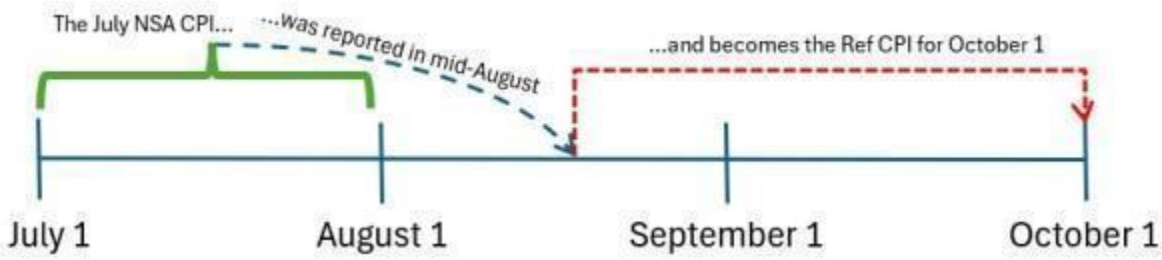

Figure 6: Illustration of USDi Value Interpolation Calculation

Date			Ref CPI
September	1	2025	322.56100
September	2	2025	322.57723
September	3	2025	322.59347
September	4	2025	322.60970
September	5	2025	322.62593
September	6	2025	322.64217
September	7	2025	322.65840
September	8	2025	322.67463
September	9	2025	322.69087

Table 1: Daily Reference CPI - September 2025.[6]

Step 2: Continuous Accrual

On Ethereum, blocks appear roughly every 10 seconds, allowing USDi to accrue inflation smoothly over time. No jumps, no cliffs — just steady, real-value growth.

[6] Source: https://treasurydirect.gov/instit/annceresult/tipscpi/2025/CPI_20250812.pdf. Downloaded from https://treasurydirect.gov/auctions/announcements-data-results/tips-cpi-data/#currentDocs on August 28, 2025.

Step 3: Real-Value Calculation

Example:
Base CPI = 315.60500
Current CPI (September 2, 2025) = 322.57723
USDi = 322.57723 / 315.605 = **$1.02209**

Each token, then, is simply a dollar whose purchasing power is frozen in time — an "honest dollar" benchmarked to December 2024.

You can get very close to the right answer by simply using spreadsheet NOW() functions, which in Google Sheets has 1-second precision. We have an illustration for USDi on a Google Sheet at https://bit.ly/4qdM7yJ.

Once we have calculated the Reference CPI for any given time, calculating USDi's price is simple: divide the current price level index – the Reference CPI – by the base price level index. For USDi, we defined the denominator as the December 2024 CPI. This is why we say that USDi is a dollar that preserves the purchasing power of a December 2024 dollar (with a small lag due to data availability).

The December 2024 CPI was 315.605. Since the December 2024 CPI was also the Reference CPI for March 1st (see the handy drawing above), that means the value of USDi on March 1st was 315.605/315.605 = 1.000000. And, as illustrated in the example above, the value of USDi on September 2nd 2025 was 322.57723/315.605 = $1.02209.

Use Cases

Zero-Risk Anchor for Portfolios — Every portfolio needs a risk-free asset in real space. USDi provides that missing leg.

Retail Payments — When both sides of a transaction can ignore inflation, commerce becomes simpler, not more complex.

Wage and Contract Settlements — Collective bargaining, long-term contracts, and leases can all be denominated in USDi, eliminating arguments over "cost-of-living" adjustments.

Savings — The modern equivalent of cash under the mattress — except it doesn't rot with inflation. Liquidity without loss of purchasing power.

Transparency and Governance

Trust in an inflation-linked currency doesn't come from promises — it comes from verification. USDi Partners ensures transparency at every step:

- **Monthly disclosures** of reserves and circulating supply in the USDi Telegram group
- **Monthly attestation** of collateral value by Trident Fund Services
- **Annual audits** by Spicer Jeffries LLP

- **Public financial statements** by USDi Partners LLC

It's a simple principle: if the data backs the design, publish the data. Transparency builds the currency's credibility the same way CPI builds its index — through method and repetition.

Regulatory Framework and Risk Factors

USDi is designed as a currency, not an investment vehicle. Its value is determined mechanically by the CPI reference — not by discretionary management or expected profit.

The economic analogy is simple: USDi behaves like a foreign exchange pair across time. One side is today's nominal dollar; the other is the **December 2024 real dollar**. As inflation accumulates, that exchange rate changes — exactly as a dollar/yen cross does when their purchasing powers diverge.

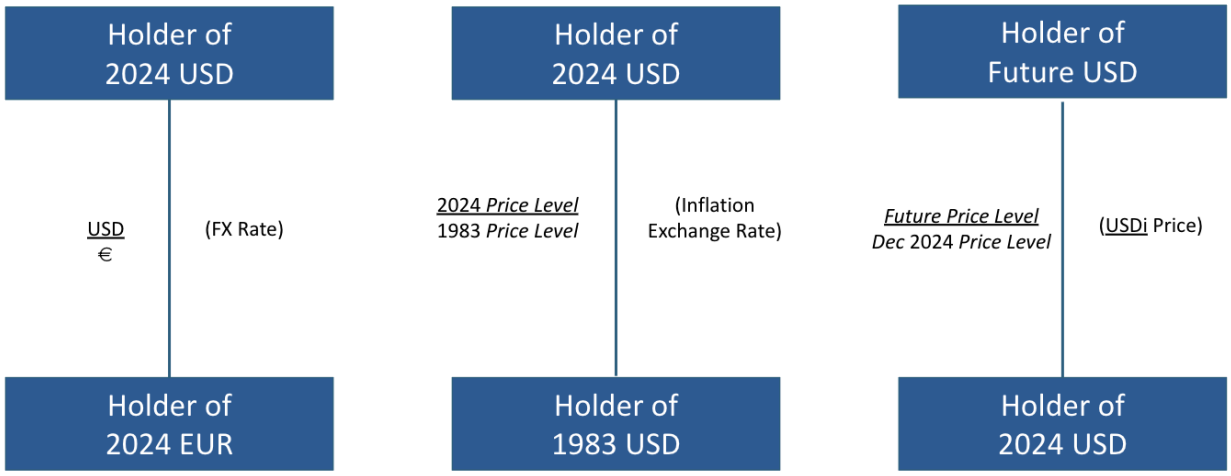

Figure 7: USDi as an exchange currency

That makes USDi not a claim on a fund, but a unit of account that moves with the economy itself. It's money that recognizes time.

Future Vision

Once USDi establishes its footing, the framework can expand. The Bureau of Labor Statistics doesn't publish just one CPI — it publishes hundreds: housing, tuition, healthcare, energy, and more. Each could underpin its own inflation-linked unit.

Imagine composing your own personal CPI — saving for your kid's college in *CollegeCPI*, hedging your rent in *HousingCPI*, or holding *MedicalCPI* as part of your health savings. That's where programmable money gets interesting.

In TradFi, that's impossible. In crypto, it's just a smart contract away.

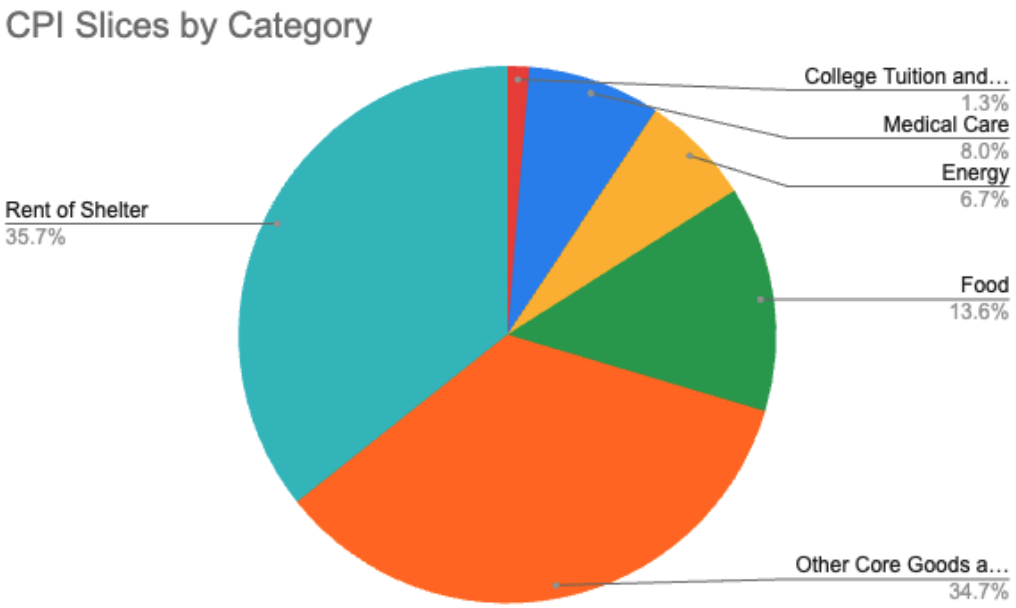

Figure 8: USDi Weight distribution for CPI Slices

Conclusion

USDi bridges the gap between theory and practice — between the economist's definition of "real value" and the individual's lived experience of it. It's not speculative. It's not complex. It's simply a better form of money — one that resists the quiet theft of inflation.

In an era of volatility and mistrust, USDi offers something rare: **a stable point of reference**. A true dollar, defined by what it buys — not what it's called.

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