

Stablecoin Evolution: Protocol-Level Monetary Systems

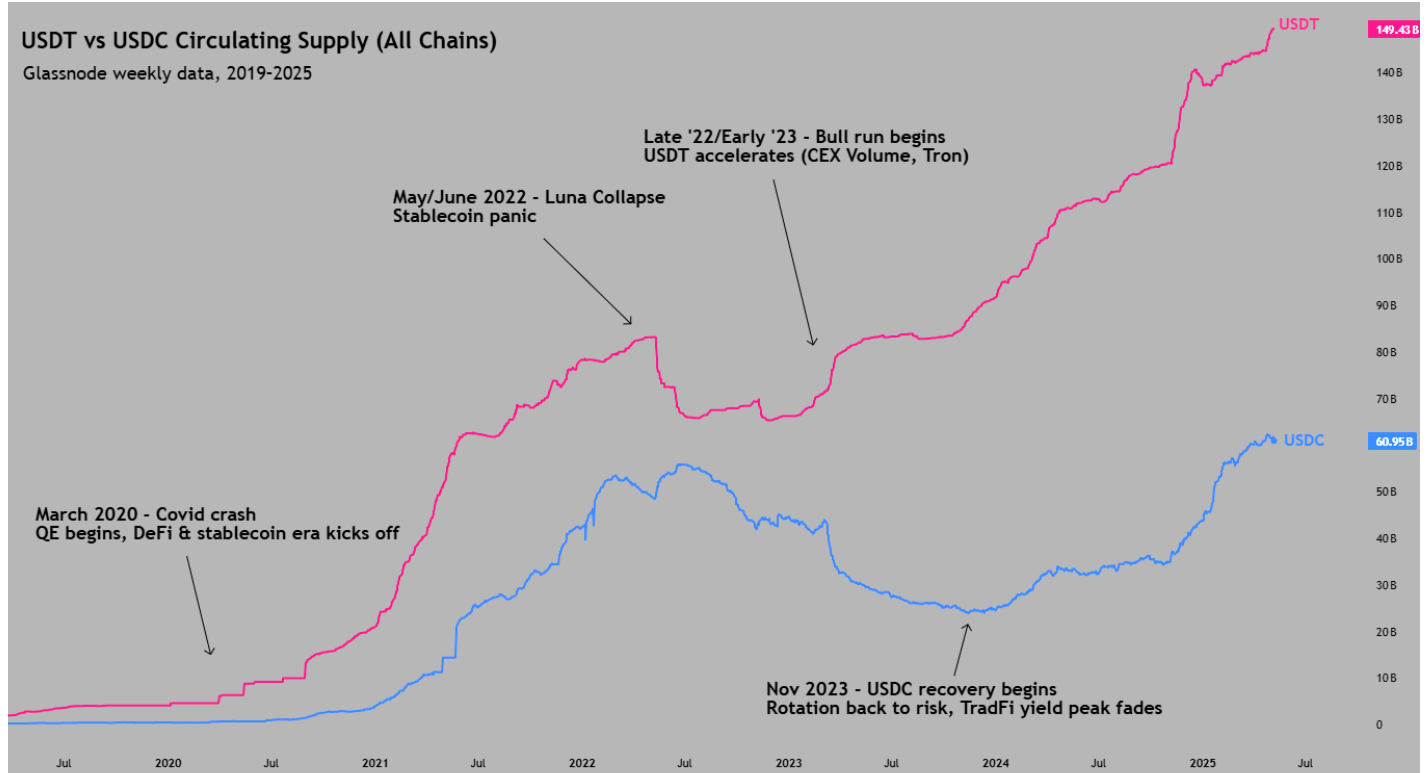
By Connor DeFrain | University of Idaho | April 2025

Dollar Demand: Diverging Use Cases

Stablecoins are the most transacted asset class in crypto and arguably the least understood.

Behind the noise of ETFs and meme cycles, stablecoins have quietly become indispensable to crypto's core functions. They enable persistent dollar-denominated liquidity, moving across borders, over weekends, and beyond the reach of traditional finance. This activity reflects growing reliance on stablecoins as monetary alternatives.

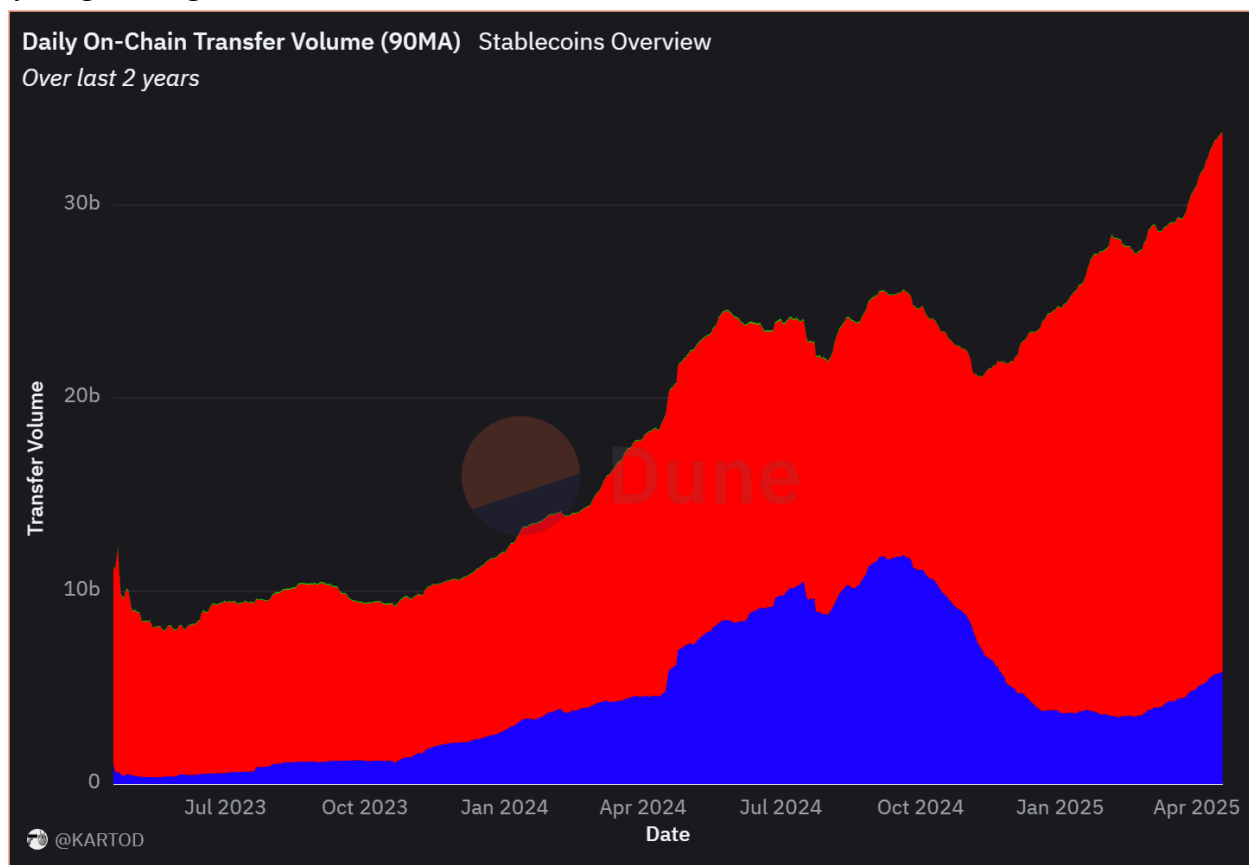
The divergence between issuers shows where demand is coming from. USDT continues to grow as the dominant stablecoin. USDC retains its role in regulated DeFi ecosystems, despite exposure to U.S. banking volatility. Newer entrants like Ethena and FDUSD are gaining ground through aggressive exchange alignment. Across the top five dollar-backed stablecoins, monthly transaction volume runs in the hundreds of billions.



Source: Glassnode via TradingView. Chart by Connor DeFrain

USDT's resurgence in early 2023 stemmed largely from offshore demand, while USDC lagged until regulatory clarity around stablecoins improved in Q4. This divergence reflects more than user preference. It shows a split in how stablecoins are being used: USDT as transactional liquidity in high-volume regions and USDC as a compliance-aligned instrument within regulated DeFi. This divergence also plays out on-chain. Volume patterns help clarify where stablecoin usage is growing and what types of demand are driving it.

Fiat-collateralized stablecoins control most on-chain transfer volume, accounting for over 75% of usage throughout 2024 and 2025



Source: Dune

The scale of on-chain stablecoin activity points to how integrated they've become across crypto infrastructure. Usage has moved beyond trading into payment systems, peer-to-peer remittances, and informal savings in regions with limited banking access or unstable currencies. Transaction volumes across Tether and USDC reflect how demand is shifting toward systems that offer liquidity that is constant, permissionless, and dollar-denominated.

This growth is unfolding alongside visible stress in traditional monetary systems. The Federal Reserve faces conflicting pressures between inflation risk and rising debt fragility, leaving

policymakers with fewer viable options. Stablecoins are expanding within that gap, not by replacing sovereign currencies, but by routing around legacy systems that no longer meet the demands of global users. Models built on protocol surpluses rather than custodial reserves are starting to look more like foundational systems than speculative assets.

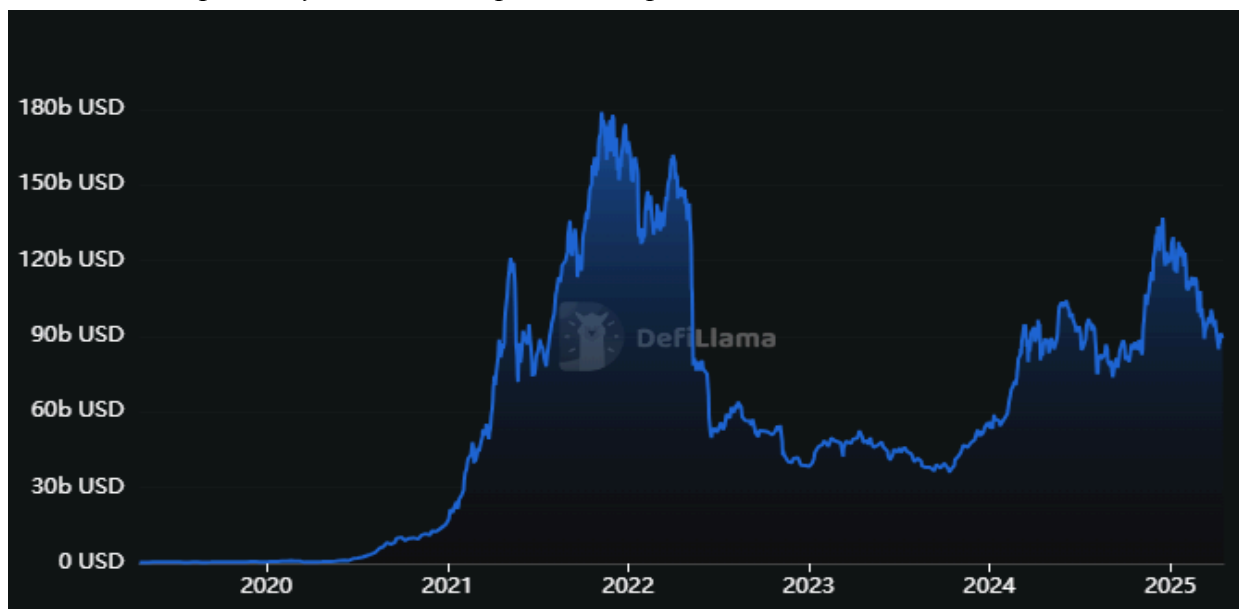
In other words, capital is shifting toward systems that offer reliability and open access when traditional systems fall short.

Exit Liquidity to Sustainable Systems

The driving force during the DeFi bull run of 2020 to early 2022 was yield. Protocols like Anchor offered nearly 20 percent returns. Curve distributed CRV incentives at scale. Olympus captured attention with rebasing mechanics and unstable financial models.

For a time, it worked. But the revenue behind those yields rarely matched the payouts. Most protocols issued their own tokens to fund incentives, inflating growth without any actual economic activity. Many participants knew the underlying mechanics weren't sustainable but ignored concerns because their APYs were green. When Luna collapsed, the entire ecosystem's fragility became clear when incentive-heavy protocols broke down under pressure. Capital exited quickly, and with yields gone, so too was the incentive to keep assets in DeFi. At the same time, Treasury bills started offering 5% returns with none of the protocol risk. Stablecoins were caught in the fallout.

DeFi TVL collapsed as yield-driven capital exited post-2022



Data: DeFi LLama

While the yield era ended, a pocket of users stayed for insulation from inflation, friction, and state-controlled financial rails. The next phase was much more foundational.

Where Stablecoins Actually Work

After the speculative hype faded, stablecoins found more durable use cases. Volume briefly dipped after the yield collapse but quickly rebounded as new transactional uses took hold. Today, stablecoins remain the primary settlement layer across DEX liquidity, Telegram bots, on-chain swaps, and NFT marketplaces.

In Latin America, stablecoin usage is increasing rapidly. Argentina and Brazil see the highest share with stablecoins accounting for over 60 and 70 percent of transactions respectively, Tether as the preferred medium in informal markets. On Tron, stablecoins make up the bulk of on-chain activity, while on Base, USDC adoption is expanding into consumer apps and payment use cases.

Centralized exchanges are showing a similar pattern. Offshore users increasingly choose USDT, while compliance-heavy environments stick to USDC.

The focus is no longer just on stablecoins themselves, but on the broader ecosystems developing around them. These systems are shaped by their issuers, how they're distributed, and where they find traction. Evaluation now centers on how efficiently and sustainably these protocols operate over time. Without leverage and speculation, only underlying mechanics remain. Stablecoins make this infrastructure especially visible because their transactions are frequent, large, and public. That makes them an ideal way to measure protocol health.

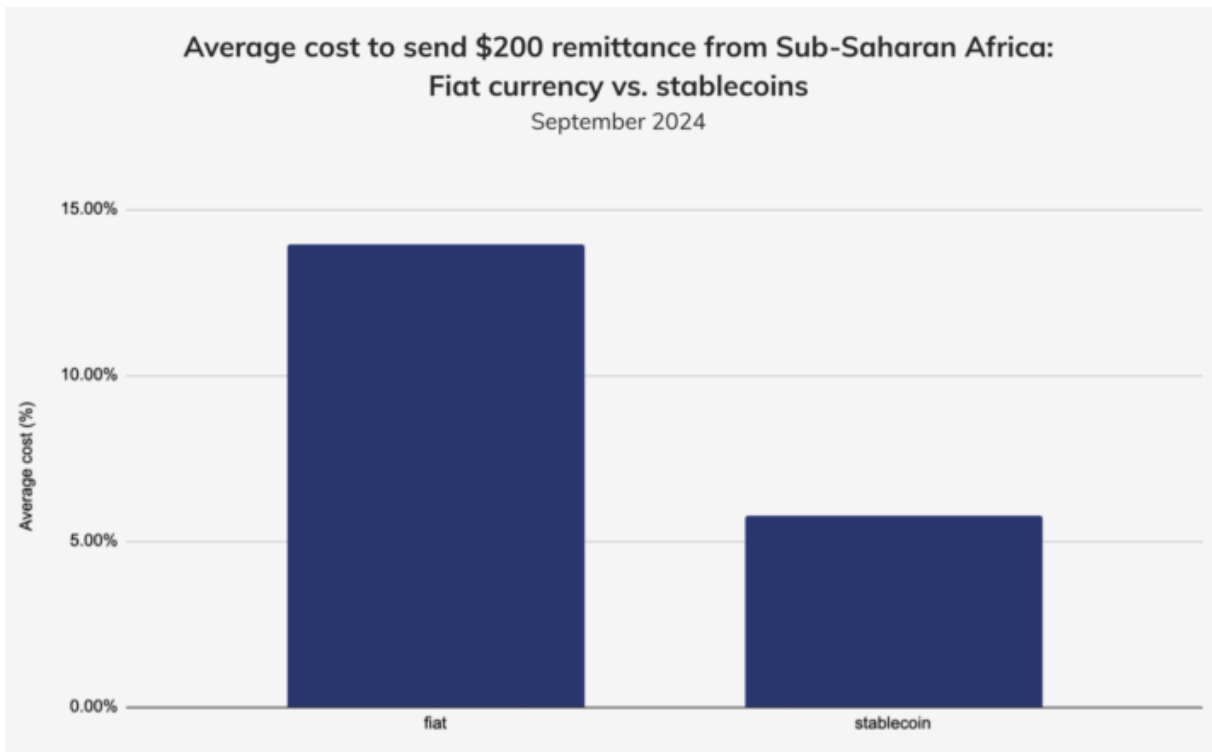
Tron consistently ranks high in revenue, because it handles high-volume, cheap stablecoin activity. Aerodrome and Velodrome have grown steadily on Base and Optimism by attracting real liquidity without heavy emissions. Even the Ethereum stablecoin activity increasingly routes through rollups, custodial wrappers, and bridges, fragmenting liquidity but scaling usage.

Some protocols generate genuine revenue without heavy subsidies, while others rely on payouts to maintain user activity. Uniswap, Curve, and GMX fall somewhere in between. They earn legitimate fees but often rely on token incentives to maintain traffic. What really matters is whether these systems can function without token bribes. Efficiency and profitability now matter more than hype and roadmaps.

Still, infrastructure alone doesn't guarantee adoption. A protocol could be solvent financially, but still lose users if they fail to deliver speed, reliability, and low costs. The real test lies in everyday usage.

Stablecoins, unlike most financial tools, settle instantly and operate 24/7 without intermediaries. That simplicity makes them unusually efficient for real-world payments, especially across borders. On-chain transfers often cost under a dollar, much cheaper than international wires or remittances, which can run \$20–\$50 or take a 6–10% fee.

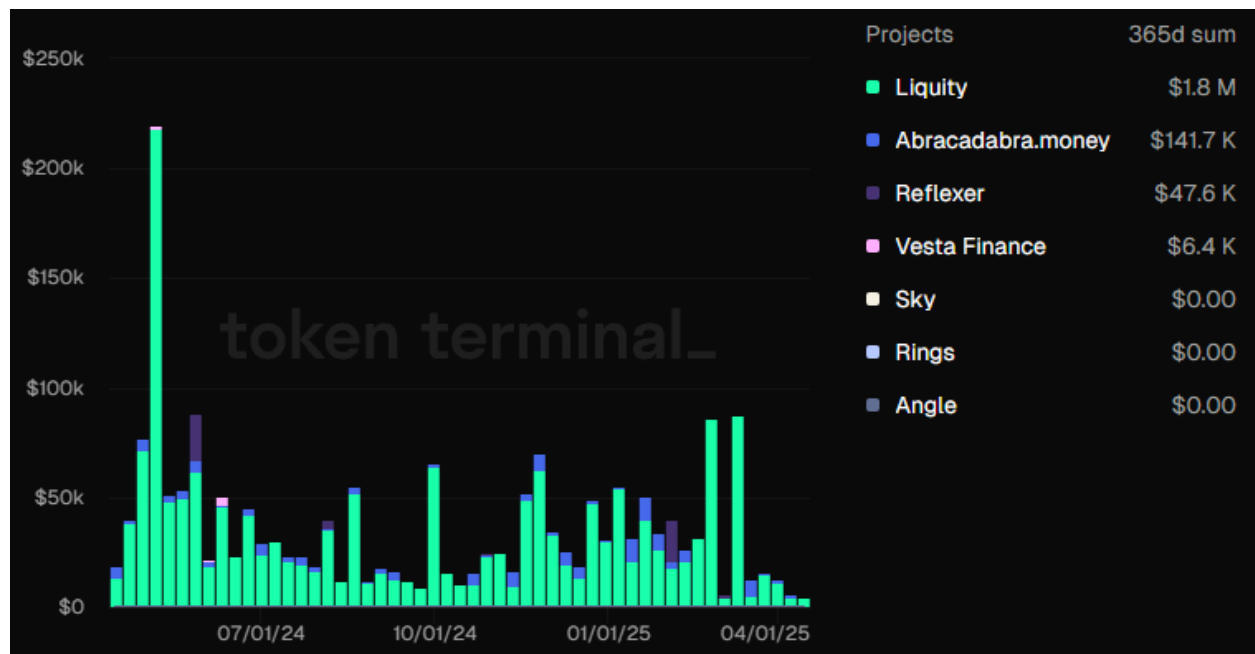
For example, sending \$500 from the U.S. to Nigeria or Mexico through traditional channels can cost up to 10% and take several days. Stablecoin transfers often cost under a dollar and settle in minutes without relying on banking infrastructure. The use case is straightforward but powerful: stablecoins unlock functionality that traditional finance still struggles to deliver.



Source: Chainalysis

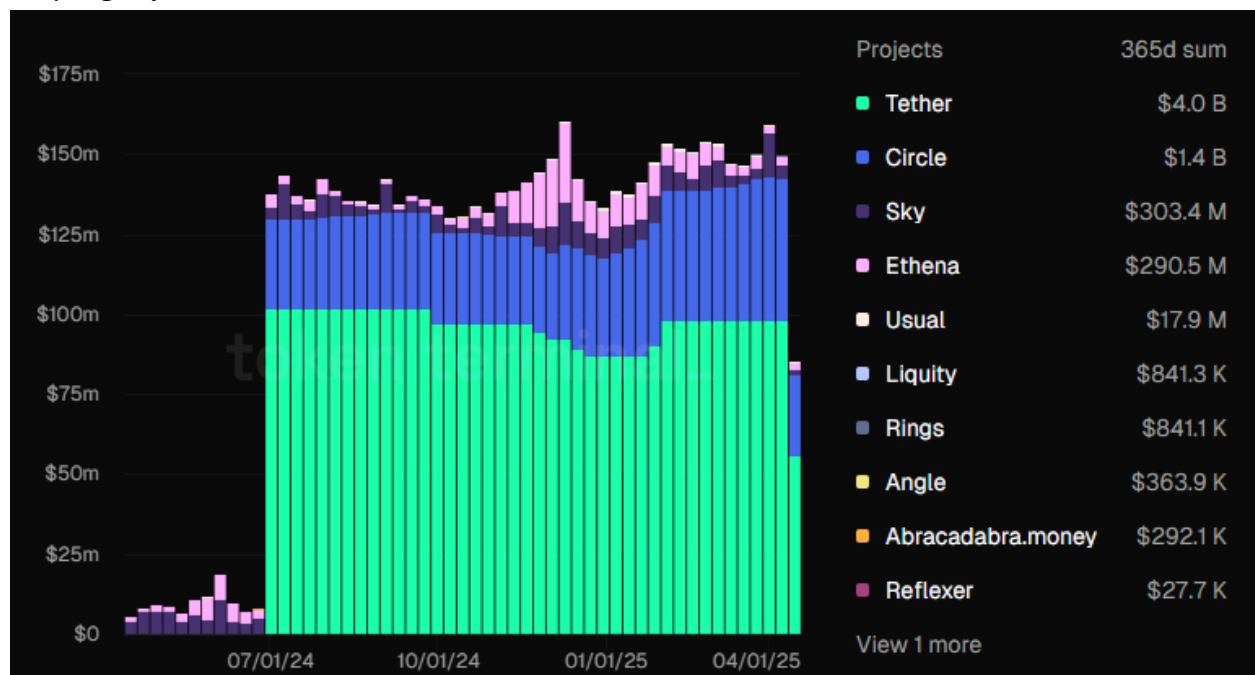
Issuers differ though. Tether and Circle earn passive yield from reserves without relying on aggressive incentives. Others, like Ethena, lean heavily on emissions to drive growth. While short-term results can be strong, long-term sustainability depends on whether that momentum converts into real usage and organic cash flow. Emissions can be useful to bootstrap activity, but without durable revenue or utility the model will break. The distinction becomes clearer when you look at where protocols derive revenue: from actual fees, or from token-driven incentives.

Weekly token incentives by project, pointing out how many ecosystems still depend on emissions to scale.



Source: Token Terminal

Weekly protocol fee revenue by project, spotlighting the issuers that generate organic revenue, an early sign of sustainable demand.



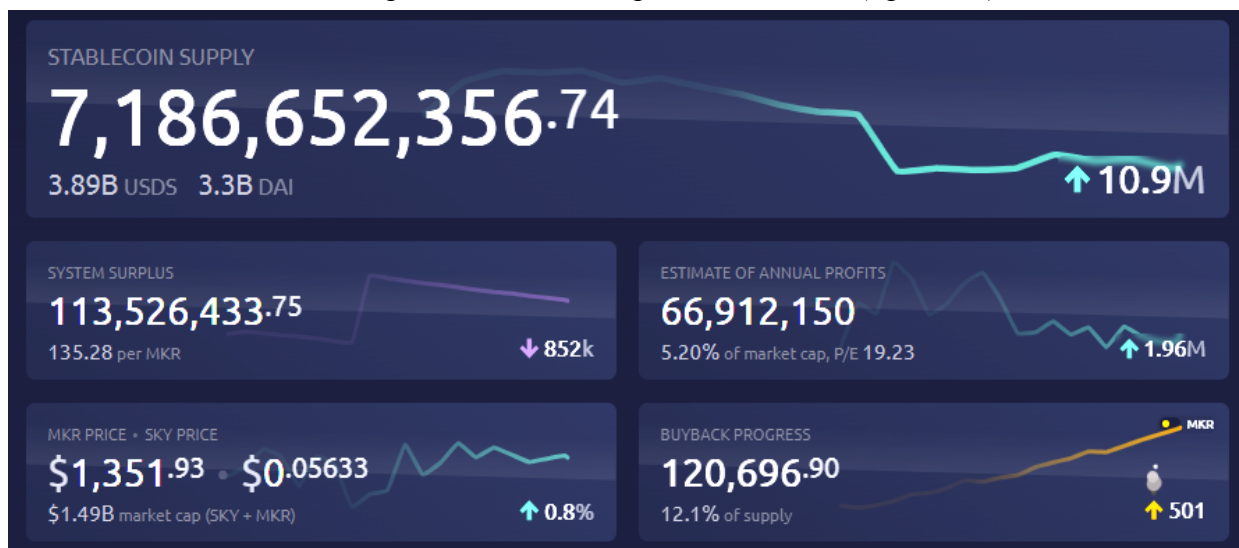
Source: Token Terminal

This contrast shows a central challenge. The biggest barrier for stablecoin issuers is scaling without relying solely on emissions. As adoption deepens, protocols must prove they can be self-sustaining. If not, trust and relevance fade.

Financial Engines

Protocols like Maker are increasingly operating as monetary institutions. They manage treasuries, accumulate surplus, and maintain internal buffers designed to manage volatility. Their mechanics mirror the early architecture of central banks more than experimental DeFi apps. Maker is focused on resilience rather than growth hacks, the kind of protocol that prioritizes long-term solvency over yield farming hype.

Maker dashboard metrics: surplus, reserves, and protocol revenue (Apr 2025)

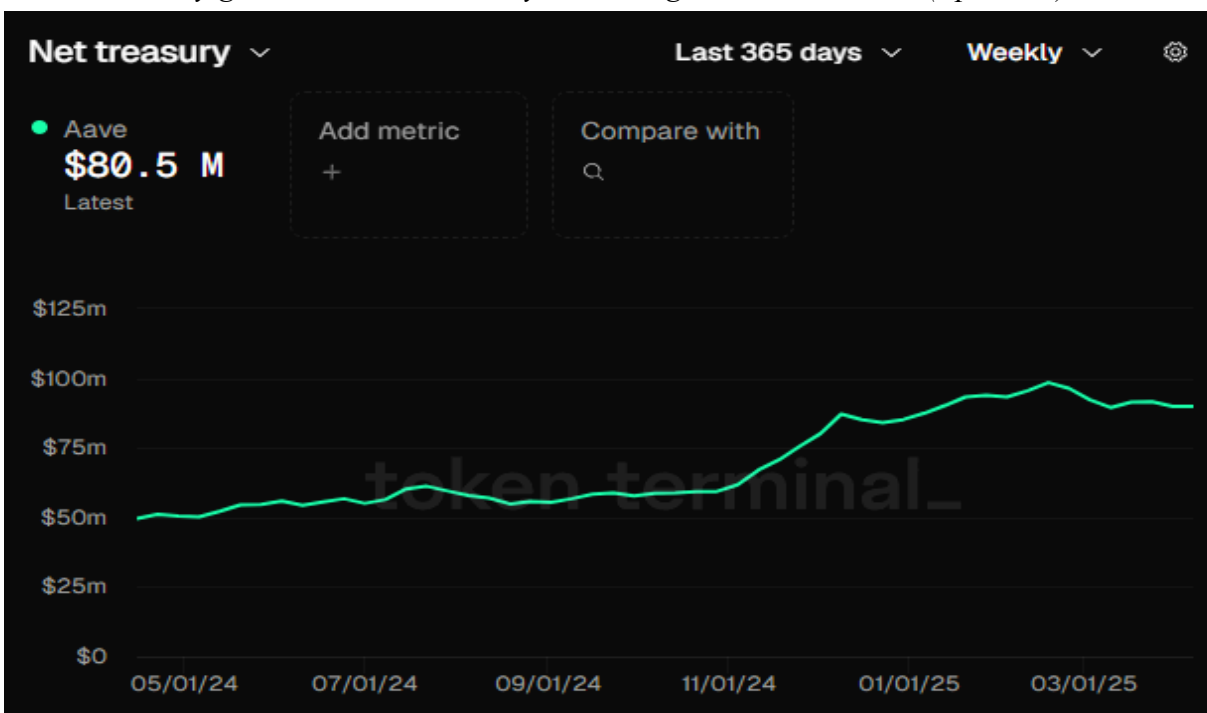


Source: Makerburn

Maker's structure reflects a system that prioritizes solvency and long-term control. With a surplus buffer over \$100 million and steady protocol profits, Maker is quietly operating with the mindset of a central bank. It issues DAI with real backing, holds internal reserves, and manages volatility instead of reacting to it. This approach may not generate headlines but it does ensure the system's reliability.

Aave is moving in a similar direction. Through its Safety Module, the protocol manages reserves and provides coverage against shortfalls, functioning like a decentralized balance sheet. Interest rate models adjust based on utilization, which influences borrowing behavior and system dynamics. Aave is now backed by its own collateral base and is steadily increasing its financial buffers. When a protocol that can consistently fund itself and maintain a cushion, it begins to look durable.

Aave net treasury growth: reserves steadily increasing without emissions (Apr 2025)

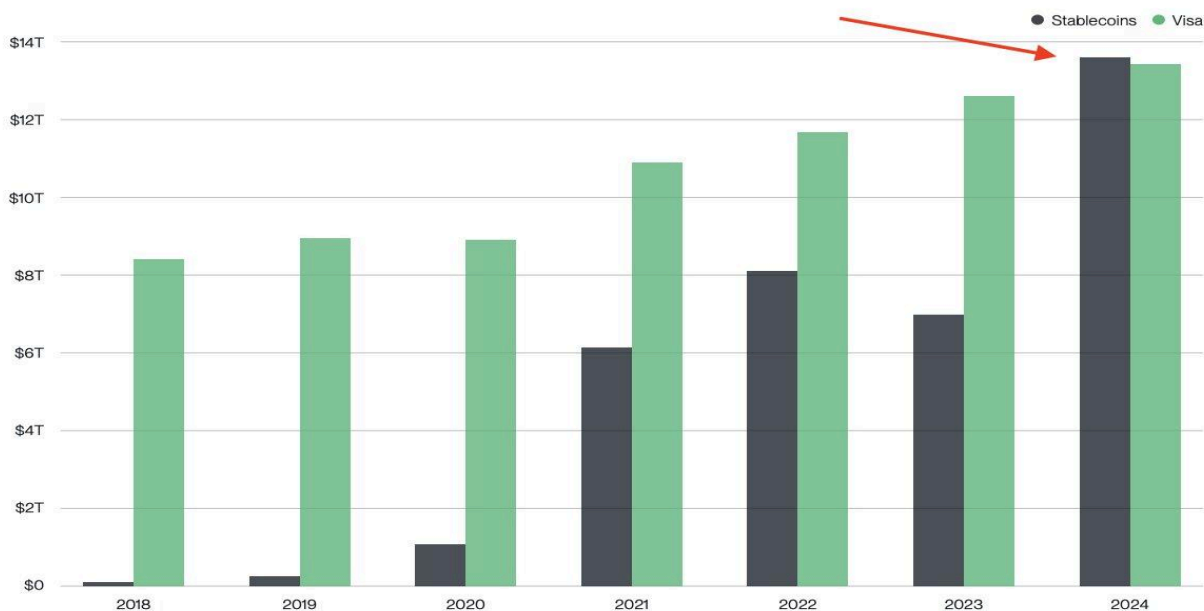


Source: Token Terminal

Aave's growing net treasury is a quiet indicator of how the protocol is maturing. It's earning more than it spends and steadily building reserves without relying on token incentives to keep users around, and that slope is a strong signal of discipline. The protocol is retaining value within the system and operating with mechanics that align more closely with conventional financial systems. In other words, it's starting to look like a decentralized central bank.

Stablecoin usage is scaling alongside protocol maturity. In fact, stablecoin settlement volumes recently surpassed Visa's annual transactions.

Volume: Stablecoin Transactions vs. Visa Payments



Source: Bitwise

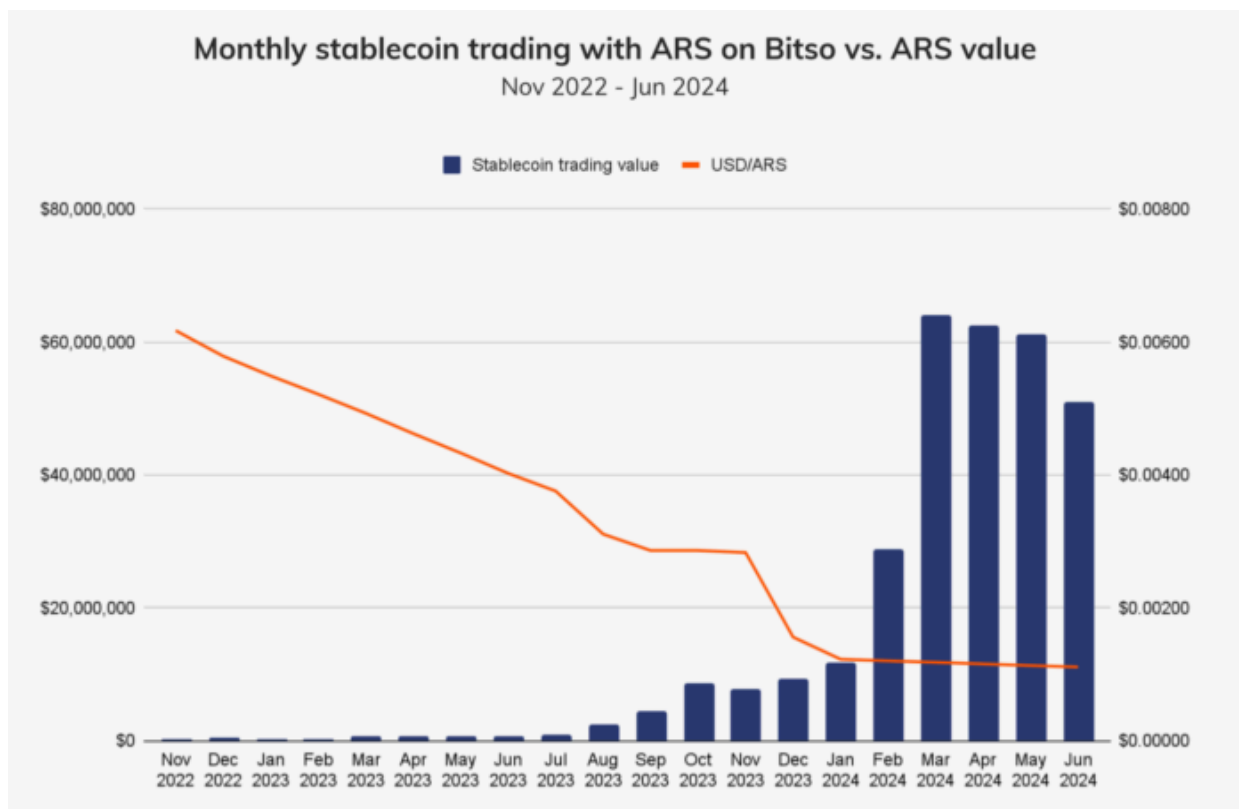
Stablecoin volumes include internal exchange activity like CEX and DEX swaps, which inflates totals without always reflecting real-world transactions. Even so, stablecoins are clearly faster, cheaper, and more transparent.

The global cross-border payment market is around \$200 trillion; stablecoins only handle about \$50 billion. That's significant within crypto but tiny compared to the global market, showing how early stablecoins still are, even with the traction they've gained. The bottleneck here is infrastructure: liquidity, compliance, and institutional-grade reliability.

Stablecoins as Monetary Lifelines

Stablecoins become extremely useful in fragile financial systems. When currencies collapse or capital controls kick in, people migrate to whatever actually works.

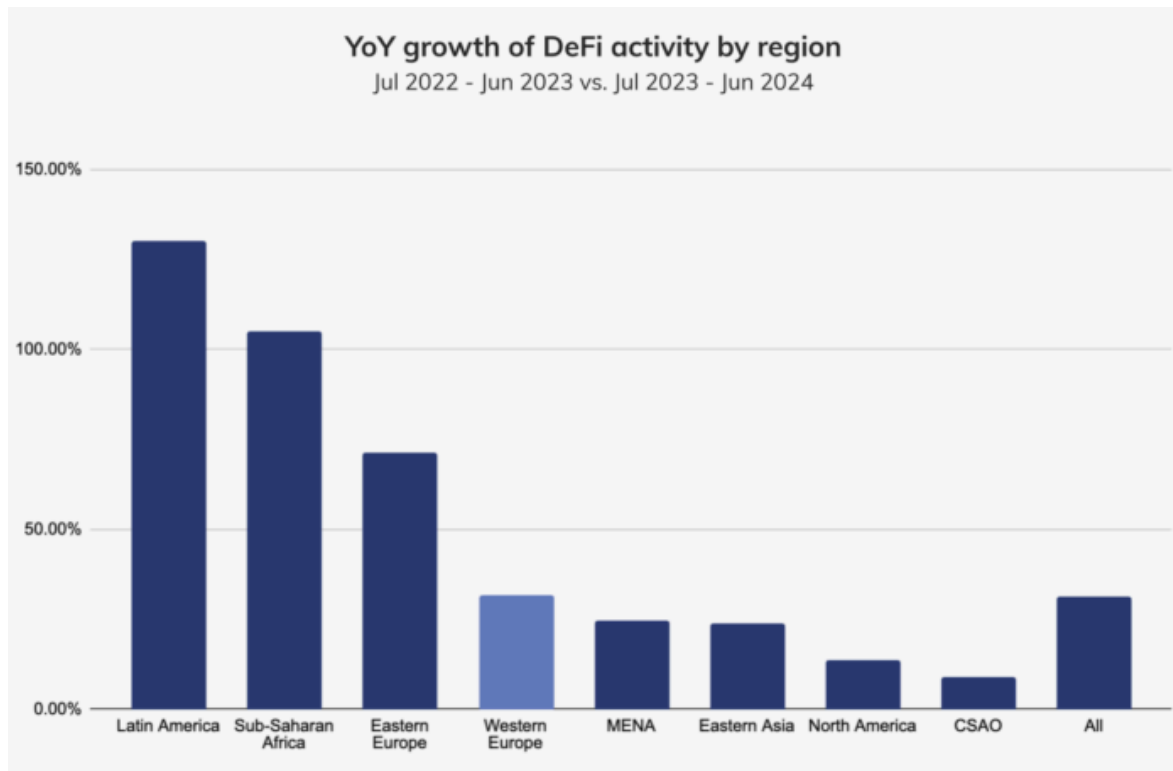
Argentina's a clear example. With inflation over 200%, stablecoins are trading at premiums compared to official exchange rates. Informal markets depend heavily on stablecoins, relying on platforms like Binance or Bitso to convert pesos to digital dollars.



Source: Chainalysis/Bitso

Turkey is another key example, the lira losing over 80% of its value since 2018. Nigeria also relies heavily on stablecoins for savings, as well as bypassing strict currency controls through peer-to-peer markets. In both cases, local demand has driven surges in stablecoin volume.

These aren't isolated cases either. Chainalysis data shows stablecoins dominate crypto transactions in Latin America, Sub-Saharan Africa, and Southeast Asia, all regions where local monetary systems have lost public trust. Stablecoins are already functioning as monetary lifelines for millions of people priced out of stable currencies.



Source: Chainalysis

New Monetary Framework

The next phase of stablecoin evolution will depend on whether protocols can operate sustainably without incentives. The protocols that stick around will clear high transaction volumes, support composability, and navigate regulations without burning capital for relevancy.

USDT will likely stay dominant in emerging markets. USDC will remain essential in compliance-heavy environments. FDUSD and Ethena could keep growing through incentives, but long-term success means converting that growth into genuine, sustainable demand. Networks like Base, Tron, and Solana are becoming preferred settlement layers because they're cheap, fast, and reliable.

Viewed through that lens, stablecoins are a step toward protocol-level financialization. The ecosystems forming around them are now operating with intent, designing for solvency and resilience.