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 Research Article

## Stablecoins And National Currency Stability: Impacts and Regulatory Mechanisms in The Digital Financial System

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### ABSTRACT

This article investigates the impact of stablecoins — blockchain-based tokens pegged to fiat currencies — on the stability of national currencies and analyzes regulatory frameworks designed to govern them within digital financial systems. Using a comparative methodology drawing on macroeconomic data from six emerging-market economies and a cross-jurisdictional review of five regulatory regimes (EU, USA, Singapore, Japan, and Uzbekistan), the study finds that high-inflation economies face material risks of monetary sovereignty erosion through stablecoin-driven currency substitution, capital flow bypass, and monetary policy transmission impairment. Conversely, well-designed regulatory frameworks — anchored by full reserve requirements, issuer licensing, and systemic significance thresholds — can preserve financial stability while capturing the efficiency benefits of stablecoin technology. The article argues for a risk-proportionate, internationally coordinated regulatory approach and highlights implications for Uzbekistan's evolving digital finance framework.

### KEYWORDS

Stablecoins, monetary sovereignty, currency stability, MiCA, CBDC, digital finance, emerging markets, capital flows, dollarization.

### INTRODUCTION

The emergence of stablecoins — cryptographic tokens engineered to maintain price parity with reference assets — represents one of the most consequential developments in contemporary monetary economics. Unlike volatile cryptocurrencies such as Bitcoin, stablecoins promise the programmability and borderless reach of blockchain technology combined with the price predictability required for everyday economic functions: payments, savings, and unit-of-account roles.

As of early 2025, the global stablecoin market exceeded \$165 billion in total capitalization, with daily transaction volumes surpassing \$55 billion — a figure that rivals several mid-sized central bank payment systems. Tether (USDT) and USD Coin (USDC) alone account for over 95% of this market, both pegged to the United States dollar, reflecting the dollar's continued primacy as the world's reserve currency and its digital extension into blockchain ecosystems.

This growth has not occurred without consequence. Central banks, the International Monetary Fund (IMF), the Bank for International Settlements (BIS), and the Financial Stability Board (FSB) have each issued warnings about the potential for widespread stablecoin adoption to disrupt monetary policy transmission, accelerate dollarization in vulnerable economies, and create new vectors of systemic financial risk. The collapse of the TerraUSD algorithmic stablecoin in May 2022 — which destroyed approximately \$40 billion in value within 72 hours — provided a stark demonstration of the fragility that poorly designed stability mechanisms can conceal.

## METHODS

This study employs a mixed-methods design combining quantitative descriptive analysis of

macroeconomic and market data with qualitative comparative institutional analysis of regulatory frameworks. The research design is non-experimental and cross-sectional, relying on secondary data sources including central bank publications, international financial institution reports, academic journals, and legislative texts. Macroeconomic data on exchange rate volatility and stablecoin adoption were drawn from the IMF's World Economic Outlook database, the BIS Triennial Survey, and Chainalysis's annual blockchain transaction reports for the period 2021–2024. Six countries were selected as case studies representing high-, moderate-, and low-adoption contexts across different income groups: Argentina, Turkey, Nigeria, Ukraine, Pakistan, and Uzbekistan. Selection was purposive, prioritizing variation in inflation history, institutional credibility, and regulatory response.

The impact assessment framework operationalizes monetary stability effects along four channels identified in the theoretical literature: (i) currency substitution intensity; (ii) capital flow management bypass; (iii) monetary policy transmission impairment; and (iv) systemic financial risk amplification. Regulatory frameworks are evaluated against a five-criterion matrix derived from FSB recommendations: reserve adequacy, issuer governance, redemption rights, systemic significance oversight, and AML/CFT compliance.

## RESULTS

Table 1 presents a classification of major stablecoin archetypes by collateral mechanism and primary monetary risk profile, reflecting the theoretical taxonomy underpinning this study's risk assessment.

**Table 1**  
**Stablecoin Typology and Monetary Risk Classification**

Type	Collateral	Key Examples	Main Monetary Risk
<b>Fiat-backed</b>	Cash / T-bills (1:1)	USDT, USDC, PYUSD	Dollarization, capital flight
<b>Crypto-backed</b>	Over- collateralized crypto	DAI, LUSD	Systemic DeFi contagion
<b>Algorithmic</b>	None / partial	TerraUSD (collapsed)	Catastrophic de- pegging
<b>Commodity- backed</b>	Gold / commodities	XAUT, PAXG	Commodity price pass-through

Fiat-backed instruments dominate the market by a wide margin. Their direct link to major reserve currencies — predominantly the USD — makes them the category most immediately relevant to national currency stability in non-dollar economies. The algorithmic category, represented most infamously by TerraUSD, has been effectively eliminated from major markets

following regulatory responses precipitated by the 2022 collapse.

Table 2 presents annualized exchange rate volatility alongside qualitative adoption intensity scores for the six sampled countries. Adoption intensity is derived from Chainalysis regional transaction volume rankings and central bank survey data where available.

**Table 2**  
**Exchange Rate Volatility and Stablecoin Adoption — Selected Economies, 2022–2023**

Country	Currency	FX	FX	Stablecoin Adoption Level
		Volatility 2022	Volatility 2023	
<b>Argentina</b>	ARS	±72.4%	±212.0%	Very High
<b>Turkey</b>	TRY	±85.6%	±64.3%	Very High
<b>Nigeria</b>	NGN	±19.8%	±57.6%	High



<b>Ukraine</b>	UAH	±35.2%	±24.5%	High
<b>Pakistan</b>	PKR	±25.7%	±38.1%	Moderate
<b>Uzbekistan</b>	UZS	±8.3%	±6.1%	Low-Moderate

A clear positive association is evident between currency depreciation and stablecoin adoption intensity. Argentina — experiencing annual inflation exceeding 200% in 2023 and a complex multi-tier exchange rate regime — became one of the world's highest per-capita stablecoin markets, with Chainalysis estimating over \$85 billion in annual crypto transaction volume, predominantly in USDT. Turkey's lira depreciation of 85.6% in 2022 similarly triggered a structural shift toward stablecoin holdings as an inflation hedge. Nigeria's post-2023 naira float produced a rapid doubling of stablecoin adoption metrics within two quarters, consistent with the currency substitution mechanism.

Uzbekistan presents a contrasting profile. Sustained exchange rate reforms since 2017 have produced relative som stability, limiting the demand-pull for dollar stablecoins. However, the country's significant remittance dependence — estimated at 14–16% of GDP — creates ongoing incentive for stablecoin use in cross-border payment corridors, particularly given conventional remittance fees averaging 5–7% for Central Asian corridors.

Analysis of the case study data identified four operative transmission channels with varying intensity across contexts. Currency substitution is most pronounced in high-inflation environments (Argentina, Turkey, Venezuela), where stablecoins displace local currency in store-of-value and, increasingly, medium-of-exchange

functions. Capital flow bypass is documented in Nigeria, Ghana, and Pakistan, where peer-to-peer stablecoin platforms enabled informal capital transfers circumventing official foreign exchange controls, depleting central bank reserve buffers. Monetary policy transmission impairment, while harder to quantify directly, is supported by BIS (2023) modeling suggesting that stablecoin penetration above approximately 5–10% of M2 measurably reduces interest rate pass-through to domestic credit conditions. Systemic risk amplification — most dramatically illustrated by TerraLUNA — remains an episodic but potentially severe channel, particularly given the growing integration of fiat-backed stablecoins into DeFi lending and yield protocols worth over \$80 billion.

This study's analysis suggests, however, that CBDCs and regulated private stablecoins are more likely to coexist than for the former to displace the latter. CBDCs offer central bank backing and legal tender status; stablecoins offer programmability, interoperability with DeFi ecosystems, and issuer innovation. A two-tier digital money architecture — in which regulated stablecoin issuers act as CBDC distribution intermediaries, as contemplated in the UK's digital pound framework — may offer the most promising synthesis.

Table 3 summarizes the core features of the five regulatory frameworks analyzed, assessed against the FSB-derived criteria matrix.

**Table 3**  
**Comparative Stablecoin Regulatory Frameworks — Selected Jurisdictions (2024–2025)**

Jurisdiction	Framework	Reserve Req.	Key Features
<b>EU</b>	MiCA (2024)	1:1 liquid assets	Significance thresholds; EBA oversight; EUR-cap on foreign stablecoins
<b>USA</b>	GENIUS Act (2025)	100% liquid	Dual federal/state charter; algorithmic ban; monthly audits
<b>Singapore</b>	MAS PSA (2023)	Par value assets	Single-currency only; 5-day redemption guarantee
<b>Japan</b>	FSA (2023)	Bank deposit-backed	Bank/trust issuers only; yen-first policy
<b>Uzbekistan</b>	NAPM (2024– )	Under development	VASP sandbox; AML/KYC focus; pilot remittance use cases

The EU's MiCA regulation achieves the broadest coverage, establishing a passporting regime for licensed issuers across 27 member states while introducing the novel 'significance threshold' mechanism — empowering the European Banking Authority to restrict non-euro stablecoins exceeding €5 billion in outstanding value or €200 million in daily transactions. This provision directly addresses the risk of dollar-

denominated stablecoins displacing the euro in European digital payment ecosystems. The US GENIUS Act resolves long-standing jurisdictional fragmentation between the SEC, CFTC, and OCC by creating a clear dual federal-state licensing regime. Its 100% liquid reserve requirement and prohibition on new algorithmic stablecoins represent the two most consequential provisions for monetary stability. Singapore's framework is distinguished by its redemption

guarantee (par value within five business days), providing stronger consumer protection than any other reviewed jurisdiction. Japan's restriction of issuance to licensed banks and trust companies prioritizes systemic safety at potential cost to competitive innovation.

Uzbekistan's framework remains the least developed of those reviewed. The NAPM-administered VASP sandbox, established under Presidential Decree and supplementary regulations, provides a licensing pathway for virtual asset service providers but does not yet address stablecoin-specific reserve or redemption requirements. Draft provisions under consultation in 2024–2025 indicate movement toward an MiCA-influenced model, with reserve verification and transaction reporting as initial priorities.

## DISCUSSION

The central finding of this study — that stablecoin monetary stability impacts are highly context-dependent — carries important implications for regulatory design. A blanket prohibitionist approach, as attempted in Bolivia, Morocco, and Nigeria (2021), consistently proved ineffective in preventing stablecoin use while creating shadow markets with lower transparency and greater AML risk than regulated alternatives. Conversely, the laissez-faire approach implicit in early US regulatory inaction allowed market concentration in two issuers (Tether and Circle) whose failure would carry systemic consequences.

The evidence supports a risk-proportionate framework calibrated along two axes: the monetary vulnerability of the jurisdiction (measured by inflation history, institutional credibility, and reserve adequacy) and the systemic relevance of specific stablecoin instruments (measured by transaction volumes relative to domestic M2 and payment system

flows). High-vulnerability jurisdictions facing significant stablecoin adoption require more aggressive macroprudential tools — including holding limits, mandatory CBDC conversion above thresholds, and enhanced capital controls — than stable, well-institutionalized economies where monetary sovereignty is not materially threatened.

A recurring theme across the regulatory frameworks reviewed is the positioning of Central Bank Digital Currencies (CBDCs) as the sovereign alternative to private stablecoins. As of 2025, over 65 countries are in advanced CBDC development or pilot stages. China's e-CNY, India's Digital Rupee, and Brazil's DREX each explicitly aim to provide a digital payment instrument that reduces demand for dollar-denominated stablecoins. The EU's digital euro preparation phase similarly reflects concern about the long-term implications of private stablecoin dominance in European digital payments.

A significant limitation of current regulatory frameworks is their inherently territorial scope applied to an inherently transnational technology. Stablecoins issued in jurisdiction A circulate freely in jurisdictions B through Z, creating regulatory arbitrage opportunities that undermine national frameworks. The FSB's 2023 High-Level Recommendations represent a normative convergence point, but binding international minimum standards comparable to the Basel Accords remain absent. This gap is particularly consequential for small open economies — including Uzbekistan and its Central Asian neighbors — which lack the market size to compel compliance by major stablecoin issuers through national regulation alone.

The G20 Roadmap for Cross-Border Payments and the BIS Project mBridge multi-CBDC platform represent partial steps toward a more coherent

international architecture, but their scope remains limited. Academic literature (Zetzsche et al., 2023; Schwarcz, 2024) has proposed an international stablecoin oversight body modeled on the Basel Committee, with membership-conditioned market access for significant stablecoin issuers. While politically ambitious, this approach deserves serious consideration given the demonstrated inadequacy of purely national regulatory solutions.

Uzbekistan occupies a distinctive position in this landscape. Its macroeconomic stabilization record since 2017 limits immediate monetary sovereignty risk from stablecoin adoption, but its remittance dependency and growing digital economy integration create both pressures and opportunities. The country's participation in the Eurasian Economic Union digital payments ecosystem and its observer status in several BIS working groups on digital finance provide channels for international coordination.

The recommended regulatory trajectory for Uzbekistan involves: (i) adopting stablecoin-specific reserve and redemption provisions within the evolving VASP framework, drawing on MiCA and Singapore models; (ii) accelerating Digital Som (CBDC) research with a specific focus on remittance corridor applications; (iii) establishing a cross-agency coordination mechanism between NAPM, the Central Bank of Uzbekistan, and the Ministry of Finance for macroprudential stablecoin monitoring; and (iv) engaging proactively in FSB and FATF working groups to shape international standards rather than adapt to them retrospectively.

## CONCLUSIONS

This study has examined the impact of stablecoins on national currency stability and the regulatory mechanisms available within digital financial systems to manage associated risks. The principal findings are threefold.

First, stablecoin adoption poses material monetary stability risks in high-inflation, institutionally weak economies through the channels of currency substitution, capital flow bypass, and monetary policy transmission impairment. The evidence from Argentina, Turkey, and Nigeria is particularly instructive, demonstrating that demand for dollar-denominated stablecoins can effectively create parallel monetary systems outside central bank control within relatively short timeframes.

Second, well-designed regulatory frameworks — exemplified by MiCA, the GENIUS Act, and Singapore's MAS framework — can address these risks while preserving the genuine economic benefits of stablecoin technology, particularly in payment system efficiency and financial inclusion. The foundational elements of effective frameworks are consistent across jurisdictions: full reserve backing with high-quality liquid assets, robust issuer licensing, mandatory redemption rights, and systemic significance monitoring with escalating regulatory responses. Third, national regulation alone is insufficient given the transnational architecture of stablecoin networks. Binding international minimum standards, coordinated through existing international financial architecture and potentially a dedicated oversight body, represent a necessary complement to national frameworks. Small open economies with significant remittance exposure — including Uzbekistan — have particularly strong interests in the development of such standards.

Future research should prioritize: econometric estimation of monetary policy transmission impairment at different levels of stablecoin M2 penetration; evaluation of CBDC adoption outcomes against monetary stability objectives in countries where retail CBDCs are now operational; and analysis of AI-enabled

compliance tools that may reduce the cost of applying robust AML/CFT standards to decentralized stablecoin transactions.

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