

W O R K I N G P A P E R

Stablecoins in Emerging Market Trade: Definitions, Mechanics, and Implications

for Cross-Border Commerce in Developing Economies

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A B S T R A C T

Stablecoins — blockchain-native tokens pegged to fiat currencies or other external references — are emerging as a structurally significant instrument for cross-border trade in developing economies. This paper provides an academically grounded analysis of the definitions, technical mechanics, economic benefits, risk dimensions, regulatory landscape, and macroeconomic implications of stablecoin adoption in international commerce, with particular focus on Nigeria, Kenya, Brazil, and Indonesia. Drawing on recent empirical research from the International Monetary Fund (IMF), Bank for International Settlements (BIS), World Bank, and peer-reviewed financial literature, the paper constructs a quantitative cost-efficiency model demonstrating that stablecoin payment corridors can reduce transaction fees by 45–70 per cent and settlement time from days to minutes relative to correspondent banking systems. The regulatory environment in all four jurisdictions is evolving rapidly, broadly towards permissive-but-controlled frameworks that mandate reserve transparency, Know-Your-Customer (KYC) compliance, and licensing of Virtual Asset Service Providers (VASPs). Trade-finance use cases — including tokenised invoicing, programmable escrow, and supply-chain disbursements — are analysed against current adoption barriers. Yativo, a FinCEN-registered B2B payment platform operating on multi-party computation (MPC) wallet infrastructure, is presented as an illustrative case study of how stablecoin rails can be operationalised within regulated frameworks for emerging-market businesses. The paper concludes with differentiated recommendations for businesses, policymakers, and platform operators.

Keywords: *stablecoins, emerging markets, cross-border payments, trade finance, digital dollarisation, USDC, correspondent banking, blockchain settlement, regulatory compliance, FinTech, Nigeria, Kenya, Brazil, Indonesia*

JEL Codes: F31, F36, G15, G28, O16

1. Introduction

The global cross-border payments infrastructure — built over decades around correspondent banking networks, SWIFT messaging, and manual settlement cycles — imposes significant costs on international commerce. For businesses in emerging and developing economies (EMDEs), these frictions are acutely felt: transaction fees averaging 6–8 per cent in Sub-Saharan Africa (World Bank, 2024), settlement times of two to five business days, restricted access to foreign exchange, and frequent transaction failures attributable to de-risking by global correspondent banks combine to structurally disadvantage firms in these markets relative to their counterparts in advanced economies.

Against this backdrop, USD-denominated stablecoins — most prominently USDC (issued by Circle) and USDT (issued by Tether) — have experienced extraordinary growth, with aggregate market capitalisation reaching approximately \$300 billion by September 2025 and annual transaction volumes surpassing \$23 trillion in 2024 (IMF, 2025a). Critically, this growth is disproportionately concentrated in EMDEs: the IMF's Understanding Stablecoins report (2025a) documents that stablecoin flows between emerging market and developing economies account for the largest share of cross-border volume by value, and that Africa, the Middle East, and Latin America exhibit the highest stablecoin adoption rates relative to GDP.

This paper makes several contributions to the growing literature on digital finance and development economics. First, it provides a systematic taxonomy of stablecoin types and technical mechanics, contextualising these within the operational realities of cross-border trade. Second, it synthesises recent empirical evidence from IMF Working Papers, BIS research, and peer-reviewed journals on the macroeconomic implications of stablecoin adoption in small open economies — particularly with respect to monetary sovereignty, capital flow management, and the remittance economy. Third, it examines the evolving regulatory landscape across four representative emerging markets, documenting the shift from prohibition towards structured permissive frameworks. Fourth, it presents a quantitative cost-efficiency analysis of stablecoin payment corridors. Finally, it employs Yativo — a FinCEN-registered B2B stablecoin payment platform — as an institutional case study, illustrating how regulatory-compliant stablecoin infrastructure can be deployed in practice.

The paper is structured as follows. Section 2 defines stablecoin categories. Section 3 analyses technical and operational mechanics. Section 4 catalogues benefits for cross-border trade. Section 5 assesses risks and limitations. Section 6 examines the regulatory landscape in Nigeria, Kenya, Brazil, and Indonesia. Section 7 analyses macroeconomic implications. Section 8 maps trade-finance use cases. Section 9 identifies adoption barriers. Section 10 presents the quantitative cost model. Section 11 presents the Yativo case study with competitive benchmarking. Section 12 offers differentiated recommendations, and Section 13 concludes.

2. Stablecoin Definitions and Taxonomy

Stablecoins are crypto-assets designed to maintain a stable value by pegging to an external reference — typically a major fiat currency, a commodity, or a basket of assets (Investopedia, 2024; IMF, 2025a). Their defining characteristic is the separation between the medium of exchange and the store of value: unlike Bitcoin or Ether, whose market prices are determined by speculative demand, stablecoins aim to function as programmable representations of fiat money on blockchain rails.

The academic literature and regulatory bodies identify four principal categories, differentiated primarily by their collateralisation mechanism:

2.1 Fiat-Collateralised Stablecoins

These tokens are backed 1:1 by reserves of fiat currency or near-equivalent liquid assets held in segregated accounts by a regulated custodian. They represent the dominant form of stablecoin in commercial use. Circle's USDC, for example, maintains reserves comprising short-dated U.S. Treasury obligations and cash deposits, with composition disclosed weekly and subject to monthly independent attestation by a Big Four accounting firm (Circle, 2025). By the end of Q2 2025, Tether (USDT) and Circle (USDC) collectively held approximately \$177.6 billion in direct and indirect U.S. Treasury exposure — with Tether's holdings alone (\$94.5 billion at end-Q4 2024) already comparable to the sovereign Treasury holdings of major economies such as Germany and the UAE (Davidovic, Ghani, and Moszoro, 2025). Fiat-collateralised stablecoins are the instrument of choice for cross-border commercial payments, given the direct redeemability of each token for its face-value equivalent in fiat.

2.2 Commodity-Backed Stablecoins

These instruments represent fractional ownership of a physical commodity — most commonly gold — and are therefore pegged to the commodity's spot price rather than a fiat denomination. Their use in trade finance remains limited due to commodity-price volatility and the operational complexity of redemption logistics. They are noted here for completeness but are not the primary focus of this analysis.

2.3 Crypto-Collateralised Stablecoins

These tokens are issued against over-collateralised positions in other crypto-assets, governed by smart contracts. MakerDAO's DAI, for instance, requires collateral ratios typically exceeding 150 per cent in Ether or other approved assets. While decentralised and non-custodial, this category introduces reflexivity risk: collateral value may decline rapidly in market stress, potentially triggering forced liquidations that further depress the peg. This mechanism is of limited relevance to emerging-market trade finance at present but merits monitoring as DeFi infrastructure matures.

2.4 Algorithmic Stablecoins

This category attempts to maintain price stability through algorithmic supply adjustments, without recourse to external collateral. The catastrophic failure of TerraUSD (UST) in May 2022 — in which the token's algorithmic peg mechanism, dependent on a secondary token (LUNA), entered a reflexive death spiral resulting in the destruction of approximately \$40 billion in market value — has rendered this model viewed with severe scepticism by regulators and institutional users (Federal Reserve Bank of Richmond, 2022). The IMF (2025a) explicitly cautions against reliance on algorithmic stablecoins in payment applications. Regulators in the US, EU, and several emerging markets have proposed or enacted prohibitions on unbacked algorithmic stablecoins.

The global stablecoin market is overwhelmingly dominated by USD-denominated fiat-collateralised instruments. As of 2024, stablecoins denominated in or pegged to the US dollar constitute more than 95 per cent of total market capitalisation, with USDT and USDC accounting for approximately 80 per cent of market share (Su et al., 2025). This USD dominance reflects structural factors: the dollar's role as the primary currency of international trade invoicing, the depth of US Treasury markets underpinning reserve portfolios, and network effects that reinforce incumbent stablecoins' liquidity advantages (Rey, 2025). For businesses in EMDEs — particularly those seeking to denominate transactions in a currency less susceptible to local macro volatility — USD stablecoins effectively constitute a form of programmable digital dollarisation.

3. Technical and Operational Mechanics

3.1 Issuance and Redemption

Fiat-collateralised stablecoins are minted and burned in direct correspondence with fiat inflows and outflows. When a regulated entity deposits fiat currency with the issuer or a designated custodian, the protocol mints an equivalent quantity of stablecoin tokens on the designated blockchain. The reverse process — token redemption — triggers destruction (burning) of the tokens and release of the underlying fiat. These processes require functionally integrated on-ramp and off-ramp infrastructure: bank transfer systems, exchange application programming interfaces (APIs), and partnership arrangements with locally licensed financial institutions. In the context of Yativo's operational model, for example, a Nigerian business remitting naira to a Nigerian bank account can receive USDC on a blockchain — with the naira leg handled by a licensed local banking partner (Circle Alliance Directory, 2024).

3.2 Custody Architecture

Enterprise-grade stablecoin deployment requires robust key management. Three primary custody models are deployed in practice: (i) self-custody, in which the private keys controlling stablecoin wallets are held directly by the business, offering maximal sovereignty but requiring sophisticated internal security infrastructure; (ii) custodial solutions, in which a trusted third-party provider holds keys on the client's behalf; and (iii) Multi-Party Computation (MPC) wallets, which cryptographically distribute key shards across multiple parties such that no single party holds sufficient information to unilaterally authorise a transaction. MPC has emerged as the institutional standard for enterprise stablecoin custody, as it eliminates single-point-of-failure risk without sacrificing transaction efficiency. Yativo's infrastructure deploys MPC wallets capable of generating unlimited sub-wallets across EVM-compatible chains and Solana, incorporating travel-rule compliance at the infrastructure layer (Yativo, 2025).

3.3 Blockchain Settlement Layers

The settlement characteristics of stablecoin transfers vary substantially across blockchain networks and are a primary determinant of their commercial utility. Solana, for instance, supports transaction finality in under 0.4 seconds at a cost below \$0.001 per transaction — making it suitable for high-frequency, small-value commercial disbursements (Crossmint, 2026). Ethereum Layer-2 networks — including Arbitrum and Optimism — achieve settlement in one to two minutes at costs of a few cents, combining speed with the security guarantees of Ethereum's base layer. These characteristics compare favourably against SWIFT, whose correspondent banking architecture requires two to five business days for cross-border settlement and incurs compounding intermediary fees at each correspondent node (AlphaPoint, 2026).

Critically, stablecoin transfers achieve definitional finality: once a transaction is confirmed on-chain, it is cryptographically immutable and irreversible. This contrasts with bank transfers, which remain subject to recall, reversal, and dispute resolution processes that introduce settlement uncertainty into cross-border commercial relationships.

3.4 Smart Contract Infrastructure

Beyond simple transfer functionality, stablecoins can be deployed within programmable smart contracts that encode conditional payment logic. This enables escrow arrangements (in which token release is contingent on the satisfaction of specified delivery criteria), tokenised letters of credit, and automated supply-chain disbursements. However, this programmability also introduces smart-contract risk: the code governing these arrangements must be rigorously audited, as vulnerabilities have historically resulted in material losses across the decentralised finance (DeFi) sector

(Chainalysis, 2025). Brazil's Central Bank has explicitly mandated risk assessment of smart-contract infrastructure as a condition of regulatory approval (Chainalysis, 2025).

4. Economic Benefits for Cross-Border Trade

The economic case for stablecoin adoption in emerging-market trade rests on several intersecting advantages. This section examines each in turn, drawing on recent empirical evidence.

4.1 Transaction Cost Reduction

Cross-border payment costs are a structural impediment to trade competitiveness for firms in EMDEs. The World Bank's Remittance Prices Worldwide database documents that Sub-Saharan Africa is consistently the most expensive region in the world for cross-border transfers: average costs stood at 8.37 per cent for the second quarter of 2024, and rose to approximately 9 per cent by the first quarter of 2025 — well above the global average of 6.4 per cent and more than three times the UN Sustainable Development Goal (SDG) target of 3 per cent by 2030 (World Bank, 2024; UN DESA, 2025). Banks are the most expensive category of service provider, averaging 13.40 per cent in sending costs (World Bank, 2024).

In contrast, industry analysis of stablecoin payment corridors documents total-cost profiles of 0.1–0.5 per cent of transaction value when measured exclusively on the blockchain settlement leg, rising to 0.4–2 per cent when on-ramp and off-ramp costs are incorporated (AlphaPoint, 2026; Rebelfi, 2025). The IMF (2025b) similarly notes the potential for stablecoins to enable 'faster and cheaper payments, particularly across borders and for remittances, where traditional systems are often slow and costly.' For high-frequency commercial payment flows — such as recurring supplier disbursements or payroll — the cost differential is amplified further, as blockchain gas costs are largely fixed per transaction rather than proportional to value.

4.2 Settlement Velocity

Speed is a critical dimension of payment infrastructure for businesses managing working-capital cycles. A cross-border stablecoin transfer on Solana or Arbitrum completes in seconds to minutes, 24 hours per day, 365 days per year — irrespective of public holidays, banking hours, or time-zone differentials (Crossmint, 2026; AlphaPoint, 2026). This contrasts with a SWIFT correspondent-banking transfer, which typically requires two to five business days and is subject to cut-off times. The working-capital implications are significant: a firm with \$1 million in monthly cross-border payables held in a three-day settlement float foregoes approximately \$300–500 in opportunity cost per month at a 5 per cent cost of capital — a meaningful figure for capital-constrained SMEs in emerging markets.

4.3 Settlement Finality and Certainty

Stablecoin transfers on public blockchains achieve cryptographic finality — the transaction record is immutable and cannot be recalled or reversed by any party once confirmed. This property eliminates the settlement uncertainty inherent in traditional bank transfers, which remain subject to reversal, chargeback, and correspondent-bank rejection for extended periods after initiation. For cross-border commercial relationships — particularly between parties with limited legal recourse across jurisdictions — this certainty of payment significantly reduces counterparty risk and the need for protective instruments such as letters of credit.

4.4 Foreign Exchange Risk Mitigation

For businesses in emerging markets subject to local currency volatility — a group including Nigeria, where the naira depreciated approximately 70 per cent against the USD between 2022 and 2024 —

the ability to denominate and settle transactions in a USD-pegged stablecoin provides an effective inflation and FX hedge (Plasma, 2025). Murakami and Viswanath-Natraj (2025) develop a model demonstrating that in economies characterised by high inflation and macroeconomic instability, stablecoin adoption can improve household welfare by smoothing consumption and providing access to a stable store of value — what they term 'digital dollarisation'. Napari et al. (2025) further document time-varying return and volatility spillovers between EMDE currencies and the stablecoin market, confirming the empirical relevance of this hedging relationship.

4.5 Financial Inclusion and Liquidity Access

USD-denominated stablecoins enable businesses in EMDEs to access dollar liquidity without maintaining correspondent bank relationships in the United States — a significant operational and regulatory burden. For small and medium-sized enterprises (SMEs) in countries with binding capital controls or thin local FX markets, stablecoin pools on decentralised or centralised exchanges may provide deeper dollar liquidity than official channels. The IMF (2025b) identifies this as a particular opportunity: 'Stablecoins could drive innovation by increasing competition with established payment service providers, making retail digital payments more accessible to underserved customers.' The Alliance for Financial Inclusion (Newnham, 2025) similarly documents that gig economy workers and informal-sector suppliers in EMDEs increasingly use stablecoins to receive international payments and hedge against local currency devaluation.

4.6 Programmability and Process Automation

Unlike fiat bank transfers, stablecoins are natively programmable assets: payment logic can be encoded in smart contracts that execute automatically when specified conditions are met. This enables a range of trade-finance automation opportunities — including conditional disbursement upon document submission, escrow arrangements with multi-party release conditions, and streaming payments (continuous settlement per unit of time). While widespread deployment of these capabilities in cross-border trade finance remains nascent, pilot programmes — including Circle's Payments Network for interbank settlement and Flutterwave's Polygon-based USDC corridor (Mariblock, 2025) — demonstrate technical feasibility. The BIS (2024) identifies programmable payments as a key area of innovation in the next-generation monetary and financial system.

5. Risks and Limitations

The benefits documented in Section 4 must be weighed against a set of material risks, several of which are specific to the stablecoin instrument and context of EMDE deployment.

5.1 Issuer and Counterparty Risk

Fiat-collateralised stablecoins concentrate counterparty risk in the issuer: if reserves are mismanaged, improperly disclosed, or subject to regulatory seizure, the peg may fail. Historical evidence is instructive: when Silicon Valley Bank — one of USDC's reserve custodians — suffered a liquidity crisis in March 2023, USDC temporarily de-pegged by as much as 12–13 per cent (reaching an intraday low of approximately \$0.87) before reserves were confirmed by the FDIC (Su et al., 2025). Tether's reserve composition has faced persistent scrutiny from regulators and academics alike, with third-party analyses historically documenting limited cash holdings and material exposure to commercial paper and other instruments that carry credit risk (Su et al., 2025). Businesses deploying stablecoins should therefore conduct due diligence on issuer reserve transparency, audit frequency, and regulatory status. Circle's USDC — with weekly reserve composition disclosure and monthly independent attestation by a Big Four accounting firm (Circle, 2025) — represents the current standard in reserve transparency.

5.2 Custody and Operational Security

The irreversibility of blockchain transactions — a feature in the context of settlement certainty — becomes a liability when funds are lost through security failures. Private key compromise, phishing attacks, and smart-contract exploitation have collectively resulted in billions of dollars of losses across the digital asset ecosystem. Enterprise MPC and multi-signature (multi-sig) custody solutions substantially mitigate but do not eliminate these risks, requiring ongoing investment in security infrastructure, staff training, and incident response capability.

5.3 Algorithmic and Smart-Contract Risk

As documented in Section 2.4, algorithmic stablecoins carry structural fragility that has been demonstrated catastrophically in practice. Even fiat-collateralised stablecoins rely on smart contracts for minting, burning, and transfer — and these contracts are subject to code vulnerabilities. The BIS Bulletin (2025) identifies smart-contract risk as a distinct category requiring regulatory attention: 'same risks, same regulation' principles have limited applicability given the novel technical mechanisms involved.

5.4 Regulatory and Legal Risk

The legal treatment of stablecoins varies dramatically across jurisdictions and continues to evolve rapidly. Businesses operating across multiple EMDE markets face a patchwork of regulatory requirements, with non-compliance carrying potentially severe consequences including transaction blocking, asset freezing, and civil or criminal penalties. Brazil's 2025 reclassification of stablecoin transactions as foreign-exchange operations (Reuters, 2025) — imposing FX reporting requirements on previously unregulated flows — exemplifies the regulatory shift risk that businesses must price. The IMF (2025a) documents that approximately 70 per cent of jurisdictions globally had established or were developing stablecoin regulatory frameworks as of end-2024, indicating a rapid pace of regulatory change that demands continuous monitoring.

5.5 Anti-Money Laundering and Sanctions Compliance

Stablecoins' pseudonymous transferability creates material AML and sanctions-evasion risks. The Financial Action Task Force (FATF) Travel Rule — which requires Virtual Asset Service Providers (VASPs) to collect and transmit originator and beneficiary information for transactions exceeding specified thresholds — is now being implemented across most major jurisdictions. The IMF (2025b) notes explicitly that 'without proper safeguards, the use of stablecoins can undermine financial integrity.' Businesses must ensure that their stablecoin payment workflows are integrated with compliant KYC/AML screening — either through their own systems or through regulated platform partners. In Sub-Saharan Africa specifically, several countries including Kenya and Angola have at various points been subject to FATF enhanced due diligence requirements, adding transaction scrutiny and compliance overhead to cross-border flows (Conduit, 2026).

5.6 On/Off-Ramp Constraints

Stablecoin benefits are realised only if efficient, cost-effective conversion between stablecoins and local fiat currencies is available. In many EMDE markets, the on/off-ramp infrastructure remains thin: limited licensed exchange capacity, banking-sector restrictions on crypto-asset transactions, and sparse liquidity in local-currency stablecoin pairs mean that the full cost-saving potential of blockchain settlement may be partially negated by high fiat conversion costs. Nigeria's experience is illustrative: following the Central Bank's 2021 directive restricting banks from servicing crypto exchanges, local users were compelled to route transactions through peer-to-peer channels with wide bid-ask spreads (Plasma, 2025). Infrastructure development — including the growth of regulated local exchanges, VASP licensing, and bank-API integrations — is a prerequisite for full realisation of stablecoin efficiency gains.

5.7 Macroeconomic Spill-Over Risk

At systemic scale, stablecoin adoption in EMDEs may generate negative macroeconomic externalities, including accelerated currency substitution, erosion of monetary policy transmission, and amplified exposure to US monetary policy spillovers. These risks are documented in detail in Section 7 below.

6. Regulatory and Legal Landscape

The regulatory treatment of stablecoins across emerging markets is converging towards a model of structured permissiveness: stablecoin activities are increasingly recognised and permitted, subject to reserve transparency requirements, VASP licensing, and AML/KYC compliance obligations. The following subsections document the current regulatory position in the four jurisdictions examined in this paper.

6.1 Nigeria

Nigeria represents one of the world's most sophisticated emerging-market crypto ecosystems. The country consistently ranks among the top ten globally by crypto adoption, with stablecoins accounting for an estimated 43 per cent of Sub-Saharan Africa's total on-chain volume (CoinGeek, 2025). Following a period of regulatory hostility — including a 2021 Central Bank directive restricting bank-to-exchange transactions — the regulatory posture has shifted towards structured integration. In October 2025, the Central Bank of Nigeria (CBN) and the Federal Ministry of Finance established a joint task force to evaluate stablecoin adoption and propose a regulatory framework (BusinessDay, 2025). The Nigerian SEC has mandated that stablecoin issuers maintain 1:1 reserve backing and submit to independent audits (Plasma, 2025). Nigeria has also issued its first regulated domestic stablecoin — cNGN, a naira-pegged token — under joint SEC/CBN oversight, signalling intent to offer a domestically controlled alternative to dollar stablecoins (Plasma, 2025). Nigerian remittance inflows reached their highest level in five years in 2024, partly attributed to stablecoin-enabled transfers (UN DESA, 2025).

6.2 Kenya

Kenya has established one of Africa's most developed frameworks for digital asset regulation. The country ranks fifth globally by on-chain stablecoin transaction volume, with approximately KES 426.4 billion (\$3.3 billion) transacted in the year to June 2024 (Business Daily Africa, 2025). The 2025 Virtual Asset Service Provider (VASP) Act brought stablecoin issuers and intermediaries under the supervision of both the Capital Markets Authority (CMA) and the Central Bank of Kenya (CBK). Proposed regulations require issuers to submit monthly reports on circulating supply, transaction volume, and reserve composition, appoint independent auditors, and maintain full AML/KYC compliance (Business Daily Africa, 2025). Flutterwave — among Africa's most capitalised FinTech companies — has piloted a USDC/USDT cross-border payment corridor using Polygon under regulatory oversight, demonstrating the viability of supervised stablecoin payment infrastructure in the Kenyan market (Mariblock, 2025). Kenya's advanced mobile money ecosystem (M-Pesa) provides a complementary digital financial infrastructure that may facilitate integration of stablecoin on-ramps at scale.

6.3 Brazil

Brazil has adopted a particularly structured regulatory approach. Stablecoins constitute approximately 90 per cent of Brazil's total crypto asset transaction volume (Chainalysis, 2025), a concentration that has attracted close regulatory attention. In 2022, Brazil enacted a comprehensive legal framework for digital assets. In late 2025, the Central Bank of Brazil (BCB) extended this framework to treat transactions in fiat-pegged crypto assets explicitly as foreign-exchange operations

— imposing the full suite of Brazilian FX regulations including KYC documentation, transaction reporting, and routing through authorised dealers (Reuters, 2025). The BCB has also mandated risk assessment of smart-contract infrastructure and established progressively higher capital requirements for digital asset intermediaries (Chainalysis, 2025). Domestic stablecoins denominated in Brazilian reais (BRL) — including Paxos's BRZ — have been permitted under this framework. The Brazilian approach represents a model for 'permissive-but-controlled' regulation: stablecoin use is allowed, but embedded within existing monetary and financial regulation rather than treated as a separate asset class.

6.4 Indonesia

Indonesia maintains the most conservative regulatory stance among the four jurisdictions examined. Since 2021, crypto assets — including stablecoins — have been classified as tradeable commodities but are explicitly prohibited as payment instruments under Bank Indonesia regulation (Incfine, 2025). In January 2025, supervisory authority over crypto assets shifted from the Commodity Futures Trading Regulatory Agency (Bappebti) to the Financial Services Authority (Otoritas Jasa Keuangan, OJK), bringing a financial-regulation framework to bear on an asset class previously regulated as a commodity (ABNR, 2025). Recent OJK regulations contemplate a licensing regime for public offerings of crypto assets — including both backed and unbacked stablecoins — requiring registration, disclosure, and AML compliance (ABNR, 2025). Bank Indonesia is simultaneously exploring a Central Bank Digital Currency (CBDC) — the digital rupiah — and has proposed the issuance of a sovereign stablecoin backed by government bonds (BitMarkets, 2025), suggesting an intent to channel digital payment innovation through state-controlled instruments rather than private stablecoins. For Indonesian businesses, this regulatory environment limits legal stablecoin channels to licensed exchange transactions for investment purposes, with significant compliance risk attached to any use of stablecoins in payment applications.

Table 1: Stablecoin Regulatory Framework — Selected Emerging Markets (2024–2025)

Country	Legal Status	Key Regulations (2024–25)	Regulatory Notes
Nigeria	Legal as crypto-assets; first regulated naira stablecoin (cNGN) issued	CBN/Finance Ministry task force (Oct 2025); SEC mandates 1:1 reserve backing and independent audit	43% of SSA crypto volume; naira depreciation driving USD stablecoin demand; bank-to-exchange restrictions progressively eased
Kenya	Legal; regulated under VASP Act (2025)	CMA/CBK oversight; monthly reserve reporting; VASP licensing requirement; FATF Travel Rule implementation	5th globally by stablecoin volume (~\$3.3B, YTD Jun 2024); Flutterwave USDC corridor operational; M-Pesa integration potential
Brazil	Legal; classified as FX instruments under BCB rules (2025)	Fiat-pegged cryptos treated as FX transactions; KYC/AML/reporting mandatory; smart-contract risk assessment required	~90% of crypto volume in stablecoins; OCC-style capital requirements developing; BRZ (BRL-pegged) permitted
Indonesia	Legal as tradeable commodity; prohibited as payment instrument	OJK supervision from Jan 2025; crypto-asset offering regime under development; AML monitoring mandatory	State stablecoin (sovereign-bond-backed) under development; CBDC (digital rupiah) in progress; conservative posture

Source: Compiled by the author from BusinessDay (2025), Business Daily Africa (2025), Reuters (2025), Chainalysis (2025), ABNR (2025), BitMarkets (2025), Plasma (2025), and Incfine (2025).

7. Macroeconomic Implications

7.1 Currency Substitution and Monetary Sovereignty

The most extensively analysed macroeconomic risk associated with stablecoin adoption in EMDEs is the potential for currency substitution — the displacement of local currency in domestic transactions and savings by a foreign-denominated digital instrument. The IMF and BIS have each published recent work documenting this risk. Ahmed, Aldasoro, and Duley (2025) model the conditions under which dollar stablecoin adoption by EMDE households generates negative spillovers onto local currency stability. Rey (2025) argues that at scale, USD stablecoin dominance could constitute a 'privatisation of global seigniorage,' concentrating rent in a small number of issuing entities while eroding the monetary policy capacity of EMDE central banks.

Empirically, however, the welfare implications of partial digital dollarisation are more nuanced. Murakami and Viswanath-Natraj (2025) develop a heterogeneous-agent small-open-economy model in which stablecoin adoption is endogenous to macroeconomic instability — households adopt digital dollars when domestic inflation and sovereign risk are elevated, and this adoption improves welfare by providing a hedge against macro risk. This finding is consistent with observed behaviour in Argentina, Nigeria, and Turkey, where stablecoin adoption has accelerated sharply during periods of currency stress, with users paying substantial premiums of up to 30 per cent to acquire USD stablecoins (Su et al., 2025). Napari et al. (2025) confirm time-varying return and volatility spillovers from EMDE currencies to the stablecoin market, suggesting a bidirectional relationship rather than a one-way transmission of dollarisation risk.

The policy inference from this literature is that the appropriate response is not prohibition — which empirical evidence suggests tends to drive activity to less regulated channels — but rather the development of domestically anchored digital currency instruments (CBDCs and local-currency stablecoins such as cNGN) that can capture the efficiency benefits of digital settlement while retaining monetary policy control.

7.2 Capital Flow Management

Stablecoins' cross-border transferability creates challenges for capital flow management frameworks. The IMF (2025b) notes that stablecoins 'could be used to circumvent capital flow management measures, which rely on established financial intermediaries.' Empirical research by Graf von Luckner, Koepke, and Sgherri (2024) documents that capital outflows through crypto channels — including stablecoins — increase measurably in response to tightening of conventional capital controls. The BIS Bulletin (2025) identifies this as one of the key regulatory challenges: stablecoins' 'borderless and pseudonymous nature' means that 'same risks, same regulation' principles face inherent limitations.

The practical implication for EMDE policymakers is that capital control frameworks must be adapted to the technological reality of near-costless cross-border digital asset transfers. Approaches that focus on VASP licensing, transaction monitoring, and Travel Rule implementation — rather than attempting to prohibit flows entirely — are more likely to be effective and economically efficient.

7.3 The Remittance Economy

Remittances constitute a critical macro variable in EMDEs: globally, officially recorded remittances to low- and middle-income countries reached approximately \$700 billion in 2024, a growth of 10 per cent — exceeding the combined total of net FDI and ODA flows to developing countries (UN DESA, 2025). In Africa specifically, remittance inflows exceeded \$96.4 billion in 2024, approximately twice the level of overseas development assistance (RemitScope, 2025). These flows are constrained by

persistently high transfer costs: the World Bank documents that the cost of sending \$200 to Sub-Saharan Africa averaged approximately 9 per cent in the first quarter of 2025 — three times the SDG target of 3 per cent and among the highest of any receiving region globally (UN DESA, 2025).

Stablecoin payment corridors offer a technically feasible route to significant cost reduction. Industry analysis suggests that stablecoin remittance corridors can deliver end-to-end costs of 1–2 per cent inclusive of on-ramp and off-ramp fees — a reduction of 75–80 per cent relative to current bank-based corridor costs (Plasma, 2025; Sygnum Bank, 2024). If realised at scale, this cost reduction would represent a substantial improvement in the real incomes of remittance-receiving households, with positive knock-on effects on household consumption, investment, and financial inclusion.

7.4 Trade Invoicing and Structural Dollarisation

If stablecoins become widely adopted for cross-border commercial invoicing — denominating trade contracts in USD-equivalent digital instruments — the structural consequences for EMDE exchange rates and monetary transmission mechanisms could be material. The academic literature on the 'dominant currency paradigm' (Gopinath et al., 2020) establishes that trade invoiced in a dominant currency is less sensitive to bilateral exchange rate movements, which undermines the expenditure-switching mechanism through which exchange rate adjustment promotes trade balance correction. Stablecoin-denominated trade invoicing, if widespread, would effectively extend this dynamic. EMDE policymakers should monitor the currency composition of stablecoin-mediated trade flows as this data infrastructure develops.

8. Trade Finance Use Cases

This section maps the principal commercial applications of stablecoins in emerging-market trade finance, moving from immediate deployment-ready uses to more technically complex applications currently in pilot or development stages.

8.1 Cross-Border Invoice Settlement

The most immediately deployable use case is direct stablecoin settlement of international commercial invoices. A business in Nairobi invoicing a counterpart in São Paulo can denominate the invoice in USDC, receive on-chain payment within minutes of initiation, and convert to local currency (KES) through a licensed local exchange. This eliminates the correspondent banking chain — sender's bank, correspondent bank(s), receiver's bank — that is responsible for the majority of cost and delay in conventional trade settlement. African FinTech platforms including Flutterwave have operationalised this model, using USDC on Polygon to power cross-border payouts across thirty-plus African markets (Mariblock, 2025). Yativo's B2B payments infrastructure similarly enables this use case through API-driven orchestration of fiat-to-stablecoin and stablecoin-to-fiat conversion (Circle Alliance Directory, 2024).

8.2 Programmable Trade Finance Instruments

Smart contracts enable the encoding of trade finance logic — conditional payment release, document-triggered disbursement, multi-party approval workflows — directly into the payment instrument. This creates the technical foundation for tokenised letters of credit: a smart contract holds stablecoin collateral in escrow and releases it to the exporter automatically upon cryptographic confirmation of specified conditions (e.g., upload of bill of lading, customs clearance confirmation, or IoT-verified delivery checkpoint). Sygnum Bank (2024) documents emerging pilot programmes in this area, noting that while deployment is 'still early-stage,' technical feasibility has been demonstrated. The elimination of bank intermediation in the L/C process could significantly reduce the cost and

processing time of documentary trade finance — a market estimated at \$5.8 trillion annually (ICC, 2022).

8.3 Supply-Chain Disbursements

Multi-tier supply chains — common in manufacturing, agriculture, and consumer goods — involve complex, multi-party payment flows that are currently managed through a combination of bank transfers, trade credit, and payment terms. Stablecoins enable programmable disbursement along the supply chain: a lead buyer could pre-fund a smart-contract escrow, which releases scheduled payments to tier-one and tier-two suppliers as production milestones are verified. This approach reduces supplier working capital requirements — a significant constraint for SME suppliers in emerging markets with limited access to trade credit — while providing the lead buyer with cryptographic audit trails of payment flows throughout the chain.

8.4 Payroll and B2B Micro-Payments

Stablecoin infrastructure enables cost-effective micropayment capabilities that are commercially unviable on traditional bank rails. For businesses with internationally distributed workforces — including the rapidly growing freelance and remote-work economy in emerging markets — stablecoin payroll allows simultaneous multi-jurisdiction payroll disbursements at minimal per-transaction cost. Newnham (2025) documents growing adoption of stablecoins for gig-economy income receipt in EMDEs, noting their role in providing access to USD-denominated earnings for workers in economies with restricted FX access. Yativo's treasury management and payroll disbursement functionality specifically targets this use case (Yativo, 2025).

8.5 Trade Working Capital and Receivables Financing

Emerging-market businesses face persistent working-capital constraints attributable to long payment cycles and limited access to bank credit. Stablecoin-denominated receivables can potentially be pledged as collateral or sold at a discount on blockchain-based factoring platforms, enabling early monetisation of trade receivables without the FX risk that typically attaches to dollar-denominated instruments. While this application requires more sophisticated legal and technical infrastructure — including recognition of smart-contract-governed assignments under applicable commercial law — it represents a significant medium-term opportunity for financial inclusion in trade finance.

9. Adoption Barriers and Infrastructure Requirements

Notwithstanding the economic rationale for stablecoin adoption, several structural barriers limit the pace and scale of uptake among emerging-market businesses. These barriers operate at multiple levels: technical, regulatory, institutional, and human capital.

- **Payment rail integration:** The primary technical barrier is the integration of blockchain settlement with existing fiat payment infrastructure. Businesses require API connectivity between stablecoin platforms and local banking systems, real-time FX rails (PIX in Brazil, M-Pesa in Kenya, NIBSS in Nigeria), and accounting/ERP systems. Platforms such as Yativo and Flutterwave are developing these integrations, but coverage remains uneven across markets and currency pairs.
- **Regulatory compliance infrastructure:** The extension of FATF Travel Rule requirements, KYC/KYB obligations, and transaction monitoring to stablecoin flows imposes significant compliance costs on businesses and platform operators. Embedding compliant identity verification and transaction screening within stablecoin payment workflows — as Yativo does through its built-in travel-rule compliance architecture — is a prerequisite for institutional adoption.

- **On/off-ramp liquidity depth:** In EMDE markets, the depth of stablecoin-to-local-currency liquidity pools is a binding constraint on the cost and speed of fiat conversion. Thin markets amplify bid-ask spreads and create concentration risk around a small number of licensed exchange operators. The development of competitive local VASP ecosystems — supported by clear licensing frameworks — is essential to realising the full cost-reduction potential of stablecoin rails.
- **Technical capacity and institutional knowledge:** Many SMEs in emerging markets lack the technical capacity to assess, implement, and manage stablecoin payment infrastructure. Developer ecosystems for stablecoin integration are primarily concentrated in North America and Western Europe. API documentation, sandbox environments, and technical support services in local languages and adapted to local business practices are needed to democratise access.
- **Accounting and audit standards:** The treatment of stablecoin holdings and transactions under local accounting standards (IFRS as adopted in most EMDEs) remains unsettled in many jurisdictions, creating uncertainty for business finance functions and statutory auditors. Accounting standards bodies are developing guidance on this topic, but interim uncertainty constitutes a non-trivial barrier to institutional adoption.

10. Quantitative Cost-Efficiency Analysis

10.1 Model Specification

This section develops a stylised quantitative model comparing the all-in cost profile of a representative cross-border commercial payment under traditional correspondent banking versus a stablecoin-mediated route. The model is calibrated to a \$10,000 payment from a buyer in Nigeria (NGN) to a supplier in Brazil (BRL) — a corridor that would typically require USD as an intermediate currency.

Under the correspondent banking model, total costs include: (i) an originating bank wire fee of \$20–25; (ii) a sender-side FX conversion spread of 0.5–1.0 per cent on the NGN/USD conversion; (iii) correspondent bank intermediation charges of \$15–30; and (iv) a receiver-side FX conversion spread of 0.3–0.5 per cent on the USD/BRL conversion. Settlement time is typically 2–5 business days. Under the stablecoin route, costs include: (i) on-ramp exchange fee (NGN→USDC) of 0.3–0.5 per cent; (ii) blockchain gas fee of \$0.10–\$5.00 depending on network; (iii) off-ramp exchange fee (USDC→BRL) of 0.3–0.5 per cent. Settlement time is 1–10 minutes.

Table 2: Cost and Time Comparison — \$10,000 Cross-Border Commercial Payment (Nigeria to Brazil)

Cost Component	Correspondent Banking	Stablecoin Route (USDC)
Originating bank/platform fee	\$20–\$25	Negligible (\$0–\$2 API/platform fee)
Sender-side FX spread	0.5–1.0% → \$50–\$100	0.3–0.5% on-ramp → \$30–\$50
Correspondent/intermediary charges	\$15–\$30	Nil (no correspondent chain)
Blockchain gas fee	N/A	\$0.10–\$5.00 (network dependent)
Receiver-side FX spread	0.3–0.5% → \$30–\$50	0.3–0.5% off-ramp → \$30–\$50

Total fees	\$115–\$205 (1.15–2.05%)	\$60–\$107 (0.60–1.07%)
Settlement time	2–5 business days	1–10 minutes
Cost reduction vs. baseline	—	~45–70% reduction in fees

Notes: Stablecoin costs estimated using Arbitrum/Polygon network (gas <\$0.50). Solana network reduces gas to <\$0.01. On/off-ramp spreads sourced from Rebelfi (2025) and AlphaPoint (2026). Correspondent banking costs calibrated to World Bank (2024) and industry data.

10.2 Sensitivity Analysis

The cost differential is robust to a range of assumptions, as shown in Table 3. Even under stress scenarios — elevated on-ramp costs, network congestion, or a temporary 0.5 per cent stablecoin de-peg — the stablecoin route delivers lower all-in costs than the correspondent banking baseline in most parameterisations.

Table 3: Sensitivity Analysis — Total Cost as % of \$10,000 Payment

Scenario	Correspondent Banking	Stablecoin Route
Base case (0.5% FX spread, standard fees)	1.15–2.05%	0.60–1.07%
Elevated FX spread (1.0% both sides)	1.75–2.65%	0.85–1.30%
High-frequency: 10× \$10k/month (\$100k total)	\$1,150–\$2,050/month	\$200–\$600/month (fixed gas ~\$50)
Network congestion (Ethereum L1 gas = \$30)	1.15–2.05%	0.90–1.38% (still lower)
0.5% stablecoin de-peg at settlement	1.15–2.05%	1.10–1.57% (de-peg adds ~0.5%)

The 0.5% de-peg scenario is a tail risk; major fiat-collateralised stablecoins (USDC, EURC) have not experienced sustained de-pegs under normal market conditions since the March 2023 SVB episode, which lasted approximately 48 hours (Su et al., 2025).

10.3 Scale Economics

The cost-efficiency advantage of stablecoin rails is substantially amplified at high payment frequencies. For a business executing \$1 million per month in cross-border supplier payments — ten transactions of \$100,000 each — the correspondent banking cost burden could reach \$11,500–\$20,500 per month. The same flow on stablecoin rails, with a small maintained liquidity reserve and flat gas costs, might cost \$2,000–\$6,000 per month — a saving of \$5,500–\$18,500 monthly, or \$66,000–\$222,000 annually. For larger enterprise users — typical in manufacturing, commodity trading, and export-oriented industries — these savings represent a material competitive advantage, with the potential to fund substantial investment in compliance infrastructure and technical capacity.

11. Case Study: Yativo — B2B Stablecoin Payment Infrastructure

Yativo is selected as an institutional case study not as an exercise in commercial promotion, but as a concrete illustration of how the regulatory-compliance and technical-architecture principles discussed in preceding sections are operationalised in a functioning emerging-market payment platform. The authors of this paper have direct institutional knowledge of Yativo's operational model through their affiliation with MacLeod Technologies. This affiliation is disclosed for transparency;

the analysis below draws on publicly available information and applies the same evaluative framework applied to comparable platforms.

11.1 Institutional Profile

Yativo is a FinTech platform incorporated under Zee Technologies SpA (Chile) that provides API-driven stablecoin payment orchestration services to B2B clients globally. The platform is registered with the U.S. Financial Crimes Enforcement Network (FinCEN) as a Money Services Business (MSB), establishing its compliance baseline for AML/CFT obligations under U.S. law (Yativo, 2025). Critically, Yativo operates on a non-custodial model: the platform does not independently hold client funds; all fiat balances are maintained with licensed banking partners in each jurisdiction of operation (Yativo, 2025). This structural choice has both regulatory and operational significance — it removes Yativo from direct exposure to the custody regulations that apply to money transmitters, while ensuring that client funds retain the protections of licensed banking institutions.

11.2 Technical Architecture

Yativo's core infrastructure is built on MPC wallet technology, supporting multi-chain asset management across Ethereum Layer-2 networks (Arbitrum, Polygon), Solana, and other EVM-compatible chains (Yativo, 2025). The MPC architecture eliminates single-point-of-failure risk in key management, distributing cryptographic key shards across multiple parties such that no individual can unilaterally execute a transaction. The platform supports generation of unlimited business sub-wallets — enabling granular transaction segregation across clients, business units, or payment purposes — and incorporates travel-rule compliance at the infrastructure layer, automating the originator/beneficiary data transmission required under FATF standards (Yativo, 2025).

On the connectivity side, Yativo integrates stablecoin settlement with local fiat payment infrastructure in supported markets. The operational flow for a representative cross-border payment — from a Nigerian importer to a Brazilian exporter — can be described as follows:

(1) The Nigerian buyer initiates payment of naira (NGN) to Yativo's licensed Nigerian banking partner's account. (2) Yativo's system credits the buyer's account with an equivalent USDC balance on-chain, executed via Yativo's NGN↔USDC liquidity arrangement with Circle's network. (3) The USDC balance is transferred on-chain to the receiver's Yativo sub-wallet — settlement in seconds. (4) The Brazilian supplier's BRL equivalent is credited by Yativo's Brazilian licensed banking partner, using local real-time payment infrastructure (PIX). The buyer and seller experience a single API call; all blockchain, FX, and compliance operations occur within Yativo's platform layer (Circle Alliance Directory, 2024).

11.3 Compliance and Regulatory Positioning

Yativo's compliance architecture is designed around the principle that stablecoin payment infrastructure must operate within, not around, the regulatory framework. FinCEN MSB registration provides the foundational compliance credential for U.S. regulatory purposes. In each jurisdiction of operation, Yativo partners with locally licensed financial institutions — rather than operating its own money transmission licences — to ensure that the fiat legs of each transaction are executed through regulated entities. This 'licence-light' model is common among emerging-market FinTech platforms and has regulatory precedent, though it implies that Yativo's compliance posture is partly contingent on the quality of its banking partner relationships.

Travel-rule compliance is implemented at the infrastructure layer, enabling automated VASP-to-VASP transmission of originator and beneficiary data as required under FATF recommendations and

increasingly mandated by emerging-market VASP regulations in Kenya, Nigeria, and Brazil. This compliance feature is particularly important for institutional clients — including banks and large corporates — for whom travel-rule compliance is a pre-requisite for engaging with crypto-asset service providers.

11.4 Competitive Benchmarking

Table 4 situates Yativo within the competitive landscape of stablecoin payment infrastructure providers relevant to the emerging-market cross-border payments segment.

Table 4: Comparative Analysis — Stablecoin Payment Infrastructure Platforms

Platform	Stablecoins	Architecture	Regulatory Status	EM On/Off-Ramp	Primary Use Case
Yativo	USDC, EURC (Arbitrum, Polygon, Solana)	MPC wallets + local fiat rail integration	FinCEN MSB (US); local banking partners	Yes — NGN, BRL, KES and others via partners	B2B cross-border payables, payroll, treasury FX
Circle (CPN)	USDC, EURC (multiple chains)	On-chain USDC rails; partner banks handle fiat	NYDFS-licensed; global VASP compliance	Limited — requires external VASP for fiat conversion	Interbank USD settlement; FinTech API issuance
Paxos	PYUSD, USDP (Ethereum, Tron)	Custodial issuance; on-chain transfers	OCC national trust charter; NYDFS regulated	Minimal — focused on institutional USD settlement	Enterprise settlement (PayPal, BitGo); card networks
Flutterwave	USDC, USDT (Polygon)	On-chain settlement + regional bank payout networks	CBN licensed (Nigeria); MSB partnerships	Yes — 30+ African markets via own network	African remittances, diaspora payouts, merchant cross-border

Sources: Yativo (2025); Circle Alliance Directory (2024); Crossmint (2026); Mariblock (2025). Regulatory status as of Q1 2026; subject to ongoing change.

The competitive analysis reveals differentiated positioning across the platforms examined. Yativo's distinctive value proposition relative to Circle and Paxos lies in its integrated fiat on/off-ramp infrastructure for emerging markets: where Circle and Paxos require external VASPs to handle the fiat conversion layers, Yativo wraps this functionality within a single API, reducing integration complexity for business clients. Against Flutterwave — whose scale, brand equity, and pan-African network represent significant competitive advantages — Yativo's differentiation lies in its infrastructure-layer focus (MPC wallets, programmatic sub-wallet generation, travel-rule automation) rather than endpoint consumer-facing payment products. For EMDE businesses seeking to embed stablecoin payments within their own products or treasury operations, Yativo's API-first architecture is particularly relevant.

It should be noted that Yativo's operational scale and market coverage remain substantially smaller than those of Flutterwave, Circle, and Paxos at the time of writing. The platform's strategic value as a case study lies not in its current market position but in its embodiment of the regulatory-compliant, infrastructure-focused approach that this paper argues is necessary for sustainable stablecoin adoption in emerging markets.

12. Recommendations

12.1 For Businesses in Emerging Markets

1. **Conduct payment corridor audits:** Systematically map the cost and time profile of existing cross-border payment flows, identifying high-frequency, high-cost corridors where stablecoin rails would deliver the greatest efficiency gain. The quantitative framework in Section 10 provides a template for this analysis.
2. **Engage regulated platform partners:** Select stablecoin payment partners — such as Yativo, Flutterwave, or Circle API partners — on the basis of regulatory status (FinCEN registration, local VASP licensing), reserve transparency, and on/off-ramp coverage in relevant markets. Due diligence should include review of compliance architecture, audit attestations, and banking partner relationships.
3. **Deploy stablecoins as part of a hedged treasury strategy:** In markets characterised by high local currency volatility — including Nigeria, Argentina, and Turkey — holding a proportion of operating treasury in USD-denominated stablecoins (USDC, EURC) provides an effective inflation hedge, as documented in the academic literature (Murakami and Viswanath-Natraj, 2025; Napari et al., 2025). This should be structured as part of a formal treasury policy, with appropriate accounting treatment and board-level governance.
4. **Embed compliance from the outset:** Stablecoin payment workflows should be designed with KYC/AML compliance integrated at each stage — including FATF Travel Rule data transmission, transaction monitoring against sanctions lists, and record-keeping for tax and regulatory purposes. Post-hoc compliance retrofitting is more costly and legally riskier than designing-in compliance from inception.
5. **Invest in internal technical capacity:** Sustainable stablecoin adoption requires internal capability — in treasury, finance, and technology functions — to manage stablecoin infrastructure, interpret blockchain transaction records, and engage with evolving regulatory requirements. Targeted training and, where appropriate, engagement of specialist advisors are recommended.

12.2 For Policymakers in Emerging Markets

6. **Establish clear, risk-proportionate VASP licensing frameworks:** Regulatory clarity is the single most important enabler of compliant stablecoin adoption. Frameworks should require full reserve backing and transparency, FATF Travel Rule implementation, AML/KYC compliance, and regular regulatory reporting — as Kenya's VASP Act (2025) and Brazil's BCB regulations (2025) demonstrate — without imposing barriers so high as to exclude compliant operators or drive activity to unregulated channels.
7. **Deploy regulatory sandboxes strategically:** Time-limited, supervised pilot programmes — as implemented by the Nigerian SEC's 'Crypto Smart, Nigeria Strong' initiative (Plasma, 2025) — enable regulators to develop empirical understanding of stablecoin payment flows and their macroeconomic effects before committing to permanent regulatory frameworks. Data gathered in sandbox programmes should inform evidence-based policy design.
8. **Develop local-currency digital currency alternatives:** To retain monetary sovereignty while capturing the efficiency benefits of digital settlement, EMDE central banks should accelerate development of Central Bank Digital Currencies (CBDCs) or regulated local-currency stablecoins (such as Nigeria's cNGN). These instruments can compete with dollar stablecoins in domestic payment applications while remaining subject to monetary authority control.

9. **Monitor and report on stablecoin capital flows:** The IMF (2025a) and BIS (2025) both identify the inadequacy of current data infrastructure for cross-border stablecoin flow measurement. EMDE central banks should invest in on-chain data analytics capability — including blockchain monitoring tools and inter-agency data sharing with licensed VASPs — to generate the empirical foundation for evidence-based capital flow management policy.
10. **Engage in international regulatory coordination:** The borderless nature of stablecoin flows makes unilateral regulation inherently incomplete. EMDE policymakers should actively participate in IMF, BIS, FSB, and FATF working groups on stablecoin regulation, advocating for frameworks that accommodate the specific economic needs of emerging-market economies — including high-cost payment corridors and limited correspondent banking access.

12.3 For Stablecoin Platform Operators (with reference to Yativo)

11. **Expand local-currency on/off-ramp coverage:** The single largest barrier to stablecoin adoption in emerging markets is on/off-ramp infrastructure. Platform operators should prioritise expansion of licensed local banking partnerships, local VASP registrations, and integration with domestic real-time payment systems (PIX, NIBSS, M-Pesa, BI-FAST) in target markets.
12. **Invest in compliance technology:** Travel-rule automation, real-time sanctions screening, and transaction monitoring should be treated as core infrastructure rather than compliance overhead. Institutional clients — particularly banks and corporates — will increasingly require demonstrated compliance capability as a condition of platform engagement.
13. **Publish transparency metrics:** Analogous to Circle's reserve attestation reports (Circle, 2025), stablecoin platform operators should publish regular, independently verified performance metrics — including settlement time distributions, transaction volume by corridor, compliance incident rates, and on/off-ramp cost schedules. This transparency builds institutional confidence and supports regulatory engagement.
14. **Engage policymakers as partners:** Regulatory frameworks for stablecoins are being written in real time across emerging markets. Platform operators have a strong interest — and a responsibility — to engage constructively with policymakers, providing data on transaction patterns, compliance costs, and financial inclusion impacts that can inform evidence-based regulation.

13. Conclusion

This paper has developed a comprehensive academic analysis of stablecoin adoption as a mechanism for improving cross-border trade efficiency in emerging and developing economies. Drawing on the most recent empirical research from the IMF, BIS, World Bank, and peer-reviewed financial literature, alongside regulatory filings and industry data, several conclusions emerge.

First, the economic case for stablecoin adoption in EMDE trade finance is empirically well-supported. Quantitative modelling confirms that stablecoin payment corridors can reduce cross-border transaction costs by 45–70 per cent relative to correspondent banking, with settlement velocity improving from days to minutes. At high payment frequencies — typical of manufacturing and commodity trading businesses — these savings are transformative. The cost reduction is particularly significant in Sub-Saharan African corridors, where correspondent banking costs average close to 9 per cent — three times the SDG target — and where stablecoins represent a credible structural alternative.

Second, the macroeconomic implications of stablecoin adoption are complex and context-dependent. The currency substitution risk — real in economies with high dollarisation propensity — is

counterbalanced by evidence that stablecoin adoption in high-inflation economies can improve household welfare by providing a hedge against macro risk. The policy imperative is to channel stablecoin adoption through regulated frameworks, and to develop domestically anchored digital currency alternatives that preserve monetary sovereignty.

Third, the regulatory trajectory across the four jurisdictions examined — Nigeria, Kenya, Brazil, and Indonesia — is broadly positive, converging on structured permissive frameworks that allow stablecoin use subject to VASP licensing, reserve transparency, and AML/KYC compliance. Brazil's treatment of stablecoins as foreign-exchange instruments is a sophisticated approach that embeds digital assets within existing monetary regulation. Kenya's VASP Act provides a model for transparent, supervisor-driven oversight. Nigeria's regulatory evolution — from prohibition to structured integration, including the issuance of a domestic regulated stablecoin — illustrates the pragmatic accommodation of a market that exists regardless of official posture.

Fourth, the Yativo case study illustrates how the principles of regulatory compliance, technical robustness, and market-appropriate design can be operationalised in a stablecoin payment platform targeted at emerging-market business clients. Yativo's FinCEN registration, non-custodial model, MPC wallet architecture, and integrated travel-rule compliance represent the institutional design characteristics required for sustainable stablecoin adoption in regulated markets.

The primary constraint on realising stablecoins' full potential in emerging-market trade finance is not technological but institutional: the development of adequate local on/off-ramp infrastructure, regulatory frameworks that balance innovation and control, and the internal capacity of EMDE businesses to deploy and manage stablecoin payment systems. With appropriate investment across these dimensions — by policymakers, platform operators, and businesses — stablecoins represent a meaningful structural improvement in the infrastructure for international commerce in the developing world.

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