

Stablecoins in emerging markets:

Opportunities & challenges



Stablecoins are a foundational payment innovation, not an incremental one. For emerging markets and developing economies (EMDEs), the potential payoff is large. EMDEs also face distinct risks and challenges in adopting this innovation. This paper maps the opportunity that wider adoption could bring in agentic commerce, tokenization, smart contracting, cross-border remittances, and competition in financial markets; weighs the risks and challenges that come with it; sets out a regulatory blueprint to manage them; and closes with country-specific analysis of India, Brazil, and Indonesia.

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Opportunities and challenges

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Executive Summary

Stablecoins are a foundational payment innovation rather than an incremental one. They collapse messaging, clearing, and settlement into a single onchain step, settle in seconds with finality, and can be programmed to act on conditions without an intermediary. They do this without relying on the two-tier banking system and the public backstops that support it. For emerging markets and developing economies (EMDEs), where payment and contracting frictions are highest, the payoff is correspondingly large. EMDE users already hold about two-thirds of global stablecoin supply. The question for policymakers is no longer whether stablecoins arrive but whether they arrive inside a regulatory perimeter or outside one.

The paper identifies four opportunities. First, agentic commerce: AI agents transacting in sub-cent amounts, at machine speed, cannot run on rails built around fixed fees, merchant accounts, and human clicks. Fast domestic systems such as UPI and PIX were built for retail tickets, and the cross-subsidy that keeps them free (about 0.25 percent of a typical transaction, funded by banks and taxpayers) cannot stretch to machine volumes. Second, tokenization and smart contracts: with the asset and the cash leg on one ledger, a loan can repay itself from a delivery rider's fares, a farmer can lock in a price before planting, and a dataset can be licensed per query. Where courts are slow or costly, self-executing contracts make investments viable that hold-up risk currently prevents. Third, remittances: sending \$200 costs about 6.5 percent globally against under 1 percent onchain, and EMDEs receive roughly \$654 billion a year. Our estimates suggest a two-point cut in cost could add about billions to these inflows alone. Fourth, competition: PIX has already shown that open, interoperable rails compress bank margins and shift deposits toward smaller institutions. Stablecoins extend that pressure to FX and cross-border settlement.

The risks are real but mostly concern system design, not the instrument. Deposit flight is limited because issuer reserves return to the banking system; the evidence so far shows no erosion of bank deposits. Local-currency coins are likely to strengthen monetary transmission by forcing banks to pass through policy rates. Dollarization is a legitimate worry for high-inflation, capital-controlled economies, not for large economies with strong domestic rails, and it can be contained through licensed ramps, holding limits, and barring banks from foreign-coin funding. Capital-flow management depends on chokepoints, and licensed exchanges and ramps are the new chokepoints; prohibition removes them while leaving the technology in place. Financial stability turns on reserve quality. Illicit use is a small fraction of volume and concentrates at unlicensed cash-out points, which argues for supervising ramps rather than banning coins. CBDCs, fast payment systems, and stablecoins are complements.

We propose a six-part regulatory blueprint: legal clarity, licensing and prudential rules for domestic issuers, ring-fencing of foreign-currency coins, integration with national rails, ongoing supervision and consumer protection, and international coordination.

Case studies of India, Brazil, and Indonesia show that the rails, the demand, and the use cases are already in place, and that the binding constraint in each is policy rather than technology. Countries that license a credible domestic-currency coin early, while ring-fencing foreign ones, will shape how stablecoins are used within their borders. Those that delay will find, as Nigeria has, that dollar coins arrive anyway and are hard to unwind.

1 Introduction: A foundational shift in financial architecture

Market-driven economies thrive on financial innovation that lower economic frictions. Whether it was the replacement of metal coins with paper money after the advent of the printing press, or the move from physical bank branches to online banking in the internet era, technological progress has always been the key driver. They share a common theme: used prudently, technology minimizes the friction of storing and moving value across people, place, and time. As those frictions fall, the economy grows toward its full potential, and mass prosperity follows.

These efficiency gains do not happen automatically. They require a coordinated effort between profit-maximizing firms, which compete away the inefficiencies of the old system, and prudent regulators, who moderate the risks that invariably accompany a new technology. This trade-off between efficiency and risk lies at the heart of every financial innovation, and recent advances in onchain payments are no different. Progress in cryptography and the internet has produced a core innovation in payment technology, the stablecoin, which holds real promise for improving the cost, speed, and transparency of money movement across agents, both human and machine.

Market participants and regulators now face a clear question: how best to capture the benefits of this payment system while minimizing its risks? The question is especially pressing for emerging markets and developing economies (EMDEs). On one hand, the payoff from an efficient payment system is likely to be larger for these economies since they have not yet reached their full economic potential: lower payment frictions can translate into much higher economic growth, unlocking economic value, and financial inclusion in different jurisdictions. On the other hand, such countries face distinctive challenges in adopting stablecoins, particularly as dominant stablecoins currently tend to reference a currency - the US dollar - that the EMDE central bank does not issue. A well-designed policy should aim to optimize this efficiency-risk trade-off, rather than either shutting the technology down or leaving it unregulated.

2

Stablecoins cut payment frictions

To see the potential of any payment innovation, we need to first understand why payments matter so much. Payments solve one of the most fundamental challenges any economic exchange faces: the buyers and sellers of goods and services do not meet at the same place at the same time. This gives rise to two frictions: a timing problem, since the sellers are not paid the moment they deliver, and an enforceability problem, since they may not be paid at all. Payment systems, at their core, solve these two frictions so that economic exchanges happen smoothly. How these frictions are alleviated differs across various payment architectures, and consequently the cost and speed of payments vary across them. A payment system should therefore be judged by how cheaply it can minimize these two frictions, transaction by transaction, while preserving the financial stability of the system as a whole.

2.1 Existing payment systems

Existing systems, which are predominantly bank-based, resolve the timing and enforceability problems by transmitting information among the parties to an exchange, authenticating the identities of payer and payee, and ultimately settling the transaction in their accounts.¹ These systems carry out three core functions: (i) messaging, where the payer's bank instructs the payee's bank in standardized formats such as ISO 20022 over networks such as SWIFT, (ii) clearing, where banks exchange and reconcile these payment instructions and sometimes offset many payments against each other, and (iii) settlement, where the actual transfer between the banks occurs by debiting or crediting the reserve accounts that banks hold at the central bank. This is, by design, a two-tier system supported by two types of money: commercial bank money and central bank money. Individuals, households, and businesses keep commercial bank money – that is, bank deposits – and banks hold central bank money. Commercial bank money gets explicit and implicit support from the central bank or the government in the form of subsidized deposit insurance, access to emergency funding facilities, and occasional bailouts.

As an example, consider the ACH (Automated Clearing House) settlement system that is widely used in the United States for payrolls, bill payments, direct debits, and domestic remittances. Banks settle their claims in batches – periodically, after netting their offsetting obligations. There is also some settlement risk between cycles, which can add to system-wide stress in bad times. In contrast, systems such as RTGS (Real-Time Gross Settlement) settle each claim individually and practically remove the settlement risk, but at a high liquidity cost, since money moves with each transfer.

¹ See, for example, Charles M. Kahn and William Roberds, "Why Pay? An Introduction to Payments Economics," *Journal of Financial Intermediation* 18, no. 1 (2009): 1–23, <https://www.sciencedirect.com/science/article/abs/pii/S1042957308000533>; and Rhys Bidder, "Money and Payments Infrastructure: Understanding the Plumbing," *Quarterly Bulletin Articles* (Central Bank of Ireland), March 2026, 1–52, <https://ideas.repec.org/a/cbi/qtbart/y2026m03p1-52.html>.



Countries like India and Brazil have made remarkable progress in their domestic payment rails by introducing UPI and PIX over the last decade. These rails are instant for consumers: users link their bank account to a public rail, and their accounts are credited or debited within seconds. Banks in turn settle with each other in central bank money using gross settlement (as in PIX) or using frequent net settlement in batches several times daily (as in UPI). The rapid adoption of these rails for domestic transfers shows that consumers prefer them to traditional methods.²

Another key leg of the modern payment system is the credit-card networks, which combine credit with payments. Authorization happens instantly when a cardholder presents her card to a merchant and the merchant relays it to the card issuer's network. The issuer checks the credit limit, runs a fraud check, and either approves or declines the request. At this stage no money actually moves. That happens later, when the acquiring and issuing banks offset their positions in batches to decide who owes whom. Final settlement happens later still, often after a day or two (T+1 or T+2), when the issuing bank pays the acquiring bank the transaction amount net of interchange fees. The merchant receives the money from the acquiring bank net of its fees.

These payment systems involve multiple parties in a transaction, each with their own fees, commission, or liquidity needs, which adds to the cost of payment ultimately borne by the consumers. And although they differ in design, at their core they all depend on the two-tier banking system for final settlement. Message transfer, authentication, batch offsetting under net settlement, prefunded liquidity under gross settlement, and final settlement in the central bank account all add to the cost, delay, and opacity. The centrality of the two-tier banking system also carries a macroeconomic cost, in the form of subsidized deposit insurance for banks, access to liquidity in bad times, and taxpayer funded bailouts in extreme cases.

2.2 Stablecoins

Stablecoins are digital assets, recorded on a distributed ledger, whose issuer undertakes to keep their market value stable in relation to a reference currency, typically the US dollar. They perform all the key functions of a payment system—instruction for payment, authentication, and settlement—almost instantly and at a fraction of the traditional cost. Lower payment costs, in turn, improve welfare in ways that reach well beyond money's direct role as a medium of exchange: they reduce information frictions, strengthen contract enforceability, and enable more efficient and smooth consumption, all of which feed directly into higher growth, innovation, and financial inclusion.

The opportunity is fundamental because stablecoins combine the technological advantages of crypto with a value anchored to fiat money. Because they live on a blockchain, the three core functions - information transmission, verification, and settlement - collapse into a single step, and settlement becomes atomic and final, eliminating settlement risk.

² For detailed background and discussions on PIX and UPI, see Fabio Araujo and Arnildo da Silva Correa, "The Future Financial System: Brazil's Experience," and Amiyatosh Purnanandam, "Cashless Payments in India: The UPI Story," both in *Frontiers of Digital Finance*, ed. Dirk Niepelt (Paris and London: CEPR Press, 2025), <https://cepr.org/publications/books-and-reports/p393>.



Bypassing intermediaries also removes the cost and opacity of layered intermediation. Because of their onchain design, stablecoins do not rely on the two-tier banking infrastructure, so they carry none of the implicit or explicit public support—deposit insurance, emergency liquidity, and occasional bailouts—that backs traditional banks. Second, they are implemented through, and interact with, smart contracts, pre-programmed instructions that execute automatically once conditions are met. Together, these features yield the six benefits illustrated in figure 1: cheaper, faster, borderless, transparent, programmable, and open payments.

2.2.1 Stablecoin taxonomy and legal relation

Much of the policy confusion around stablecoins comes from treating them as a single instrument, but the word covers arrangements that differ in the mechanism that keeps the value stable, in the asset that serves as reference, in what backs the token, in the legal relationship between issuer and holder, and in whether and how the holder can redeem.

For stabilization and backing mechanisms, four families are commonly distinguished: (i) Fiat-backed (offchain collateralized) stablecoins, such as USDC, are liabilities of a centralized issuer backed by a reserve of offchain assets (bank deposits, government bills, repos, and in some cases less-liquid assets); they account for well over ninety percent of circulating supply and are the only family that this paper treats as a payment instrument; (ii) Crypto-collateralized stablecoins are over-collateralized by other crypto assets locked in smart contracts and stabilized by liquidation mechanics; (iii) Algorithmic stablecoins rely on supply adjustment and arbitrage rather than on a reserve; the collapse of Terra/UST in 2022 is the reference case, and several jurisdictions, Brazil among them, now prohibit their distribution; and (iv) tokenized deposits, that are not stablecoins: they are bank deposits recorded on a ledger, remain within the deposit-insurance and prudential perimeter of the bank, and circulate only among the bank's own identified customers. Keeping (iv) apart from (i) is essential because the tokenized-deposit model is the one that central banks (the BIS "unified ledger" work, the ECB, and Brazil Drex program) favor for wholesale settlement.

2.2.2 Adoption of stablecoins

Stablecoin adoption has grown rapidly, especially after the United States provided regulatory clarity with the GENIUS Act in July 2025, which set reserve requirements, disclosure policies, and licensing rules for issuers of payments stablecoins. Full reserve backing under the U.S. law combines onchain settlement with the stability of the US dollar in a single instrument. Figure 2 shows the growth in supply and circulation of the two main USD-pegged stablecoins, USDC and Tether, over the past six years.



Figure 1: Benefits of Stablecoins

Programmable digital money on open rails

01 Cheaper

Skips the intermediary chain and the reconciliation, duplicate compliance, and prefunded liquidity it requires. Savings are largest in cross-border payments spanning several jurisdictions.

02 Faster

Available 24/7, regardless of weekends or bank holidays. Onchain settlement is instant and final, lowering the opportunity cost of tied-up funds for senders and receivers.

03 Borderless

An open, permissionless rail anyone can reach—ideal for cross-border remittances, agentic payments, and access to financial markets abroad with appropriate policy/capital control guardrails.

04 Transparent

Fees are recorded onchain and verifiable by anyone, removing the opacity that comes with multiple layers of intermediation.

05 Programmable

Internet-native payments that execute on rules set in advance—escrow, conditional release, atomic delivery-versus-payment—the basis for smart contracting.

06 Open and inclusive

Low barriers to entry level the field between large and small banks, rich and poor households, and large and small businesses.

Figure 2: USD-pegged stablecoin supply over time

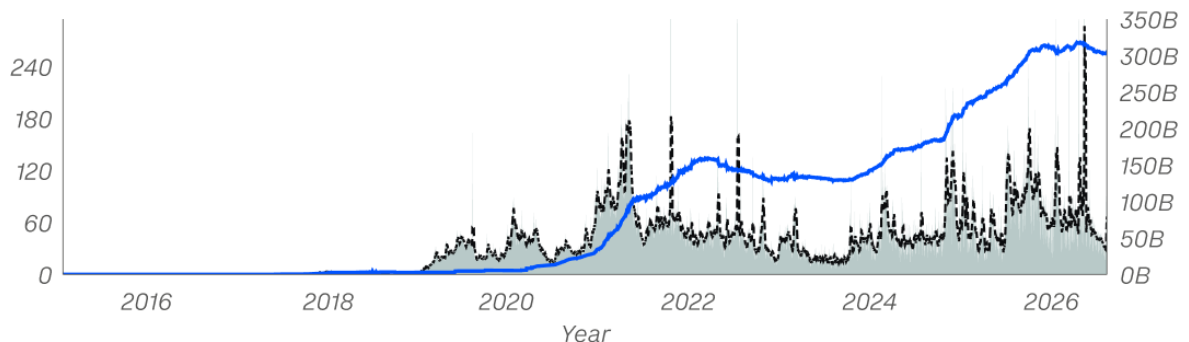
— Combined supply (left axis)

■ Daily volume (right axis)

----- Volume, 7-observation average (right axis)

Supply (billion tokens)

Daily volume (US\$ billion)



Source: Supplied USDT and USDC CSVs; Feb 2015-Aug 2026.

Supply = market cap / price. Volume above US\$350B clipped; final day excluded.

Volume source/methodology requires confirmation before publication.

EMDE regulatory frameworks lag those of the developed economies, yet EMDE users are at the forefront of this shift, and among the largest users of crypto, including stablecoins. Goldman Sachs reports that EMDEs³ hold nearly two-thirds of the global stablecoin supply. Country-level adoption is hard to measure precisely, so industry observers estimate it from onchain analytics and web-traffic.

³ Goldman Sachs Global Institute, "Stablecoins and Emerging Markets," Goldman Sachs, February 4, 2026, <https://www.goldmansachs.com/what-we-do/goldman-sachs-global-institute/articles/stable-coins-and-emerging-markets>.

EY Parthenon surveyed 350 executives from financial and non-financial firms—including from EMDEs in Asia, Africa, and Latin America—shortly after the GENIUS Act passed in July 2025.⁴ Even at that early stage, about 23% of financial institutions and 8% of corporations reported using stablecoins, and 54% of non-users expected to begin within 6-12 months; 91% of users report cost savings of 5% or more and 41% savings above 10%, driven mainly by cross-border savings. Users around the globe, including in the EMDEs, are embracing stablecoins at a rapid pace.

3

Stablecoins can be a catalyst for economic growth and financial inclusion in EMDEs

EMDEs stand to gain from prudent adoption of stablecoins along four dimensions: agentic commerce, tokenization and smart contracts, cross-border remittances, and competition in financial services. This section expands on each in turn, beginning with agentic commerce.

3.1 Agentic commerce

Stablecoins combine the onchain infrastructure of crypto with the stability of traditional money, so that they can move value between the agents of an economy at internet speed, at low cost, and programmably. Instead of the repeated human interference that defines legacy rails, onchain payments can execute against a predefined set of conditions, which makes stablecoins well suited to serve as the payment layer for agentic commerce.

With agentic commerce, the paper's central claim is most pronounced: transactions that agents generate are too small to price on legacy infrastructure, too fleeting for onboarding, and too geographically dispersed for local instant payment systems.

3.1.1 Why is it different?

Payments follow commerce. When e-commerce arrived in the 1990s and early 2000s, internet banking and web payments emerged, but the changes were mostly front-end; the underlying architecture still relied on bank-to-bank transfer settled at the central bank. Agentic commerce is a deeper shift: autonomous AI agents, acting for human principals, can run a full purchase cycle—search, payment, fulfillment—from a goal rather than a sequence of clicks. For example, there will be a rise in machine-to-machine transactions with agents paying one another directly—one calling another's API to buy data or compute, negotiating terms, and settling. Volumes are still small, but some estimates put

⁴ Prashant Kher, Kevin Bailey, and Scott Mickey, "Stablecoins: Adoption, Optimism and Regulatory Clarity," EY, September 15, 2025, https://www.ey.com/en_us/insights/financial-services/cost-savings-and-speed-drive-stablecoin-adoption.



agentic commerce at \$3.5 trillion by 2031, and the IMF expects it to grow in importance over time.^{5,6} Much of that growth will come from emerging markets, which cannot afford to not have rails that support this commerce.

The shift can be explained with the second customer on the network: software that retrieves, compares and increasingly transacts on a person's behalf, at a scale the web has not previously served. That customer does not watch advertisements and does not form a durable billing relationship with distributors. Automated traffic already accounts for roughly 60 percent of web page content.⁷

3.1.2 Why the old bargain has broken down

For years, publishers and developers tolerated crawlers as search engines sent readers back to them, allowing them to profit. Generative AI changes that transaction because these systems crawl to answer—not to refer. Google search referrals to publishers fell by roughly a third globally,⁸ and about 70 percent of media experts expect AI licensing to become a tangible revenue stream within three years.⁹ Most sites now face a choice to either allow automated traffic for free or to block it. The third option is one where agents pay for access instead. Cloudflare's Pay Per Crawl already lets content owners charge AI crawlers directly.

For EMDEs the point is that this is a pricing failure and not only an intellectual property dispute. Compulsory licensing, and statutory royalties take years to litigate and reward parties large enough to litigate them. Publishers or dataset providers in EMDEs have neither the leverage to negotiate an enterprise contract nor a forum in which to enforce one. A per-use market pays everyone who sets a price, including a regional newspaper archive in India, regardless of whether you are a crop-price dataset in Indonesia, or a Portuguese-language collection in Brazil. This follows the same logic we apply to remittances in section 3.3 and to competition in section 3.4, where the gains fall to those currently priced out.

3.1.3 Why legacy rails cannot support it

Legacy infrastructure for internet payments was built for human eyes and human behavior: a person clicks “buy,” payment flows through

5 Nick Maynard and Louis Atkin, “Agentic Commerce Market Report: Size, Trends 2026-31,” Juniper Research, April 7, 2026, <https://www.juniperresearch.com/research/fintech-payments/ecommerce/agentic-commerce-research-report/>.

6 See S. Davidovic and H. Tourpe, “How Agentic AI Will Reshape Payments,” IMF Note No. 2026/004 (International Monetary Fund, 2026), <https://www.imf.org/en/publications/imf-notes/issues/2026/04/22/how-agentic-ai-will-reshape-payments-575560>, where they write, “Although adoption remains at an early stage, experimentation by technology firms, payment networks, and financial institutions shows that agentic models will become increasingly relevant over time.”

7 Cloudflare Radar, “Traffic Worldwide: Bot vs. Human,” accessed August 18, 2026, <https://radar.cloudflare.com/traffic#bot-vs-human>.

8 Charlotte Tobitt, “Global Publisher Google Traffic Dropped by a Third in 2025,” Press Gazette, January 16, 2026, <https://pressgazette.co.uk/media-audience-and-business-data/google-traffic-down-2025-trends-report-2026/>.

9 Nic Newman, Journalism, Media, and Technology Trends and Predictions 2026 (Oxford: Reuters Institute for the Study of Journalism, 2026), https://reutersinstitute.politics.ox.ac.uk/sites/default/files/2026-01/Trends_and_Predictions_2026.pdf.



a static card or bank credential and a one-time authorization, and settlement follows later through a processor and acquiring bank. That model cannot serve autonomous agents, which transact at machine speed and frequency, around the clock, across borders, and in tiny amounts – an agent may pay a fraction of a cent per API call. Payments must move from human-initiated “click-to-pay” to agent-mediated “decide-to-pay.”

The problem is arithmetic. Legacy rails charge fixed fees alongside a percentage rate, so smaller payments result in larger shares consumed by the fee.¹⁰ These implications matter for our purposes. First, fast domestic rails fail to solve the issue: FedNow’s baseline fee is 45 to 450 times the network cost of a stablecoin transfer, so systems like UPI, PIX, and BI-FAST remain domestic systems built for retail tickets and not sub-cent settlement between software. Second, the cross subsidy that makes UPI free may not be expandable to agentic volumes. In section 6.1.2 we show that a typical ₹800 UPI transaction costs about 0.25 percent of value funded by taxpayers and banks, which becomes unrealistic when transaction counts rise by orders of magnitude, and average tickets fall below a cent. Third, neither aggregation nor merchant onboarding is a workaround. Batching needs a durable billing relationship that a first-contact agent sale does not have, while accepting card payments requires a merchant account which many microsellers do not have.

Why stablecoins fit? Stablecoins are emerging as the native settlement layer because bank and card rails do not run at machine speed. Stablecoins, on the other hand, offer 24/7 availability, borderless reach, near-instant atomic settlement, viable micropayments, and are programmable. A principal funds a wallet with stablecoins; the agent transacts under a predefined program and settles at internet speed. Because payment, escrow, conditional release, and automatic refunds can be encoded in a single smart contract and executed without an intermediary, stablecoins suit the multi-party conditional transactions agentic commerce generates (see the Box on “Stablecoins for Agentic Commerce”). Economic welfare is maximized when agents consume exactly what they need and when they need it, and do not waste productive assets either in terms of timing or the amount. Programmable, atomic payments let consumption be matched to need—buying one unit exactly when it is needed—smoothing consumption and freeing capital otherwise locked up for lumpy purchases.

The control model also inverts, as on card rails the oversight takes place mostly after a transaction is done. This changes with wallets with per-transaction ceilings, task budgets, and permitted categories of service which are set before agents transact. That shift matters, as a system that runs thousands of small conditional transactions cannot rely on a court for any of them. Especially in our case study countries enforcement tends to be sluggish: About four years in India against a backlog of more than 50 million cases, around 801 days in Brazil at about 22 percent of the claim and around 403 days in Indonesia at roughly 70 percent of the amount at stake.

¹⁰ Stripe; Visa USA Interchange Reimbursement Fees; Regulation II, 12 C.F.R. pt. 235; FedACH and FedNow 2026 fee schedules; Spark (2026). Authors’ analysis. The table uses published U.S. schedules at each rail’s most favorable tier, which makes the comparison conservative: EMDE card and bank costs are generally higher, so the floor in India, Brazil, or Indonesia binds at least as tightly.



Table 1: Cost comparison for micro transactions

Rail	Published cost per transaction	Minimum viable transaction at a 5% cost ceiling
Card	2.0% + \$0.15 to 2.9% + \$0.3	\$5 to \$14.29
Debit	\$0.21 + 5bp + \$0.01 fraud adjustment	\$4.44
Bank transfer	\$0.25 to \$0.5 per entry	\$5 to \$10
Instant Payment (FedNow baseline)	\$0.045 per credit transfer	\$0.9
Stablecoin transfer	\$0.0001 to \$0.001	\$0.002 to \$0.02

Stablecoins for Agentic Commerce

Stablecoins can support agentic commerce and machine-to-machine payments because payments, escrow, conditional release of funds, and automatic refund can all be encoded into a single smart contract and they can be executed without the need for an intermediary. This can be especially helpful for multi-layer contracts and multi-party transactions. Stablecoins bring uniformity in the way in which AI agents exchange data and value.

Stablecoins can be an especially powerful payment infrastructure in a tokenized economy that is built on payment protocols such as x402, AP2, or ERC-8004. For example, the x402 protocol revives the dormant HTTP 402 “payment required” status code, letting a client (such as an AI agent) pay for a server in stablecoins inline within a single web request: The server answers an unpaid request with a machine-readable specification of amount, recipient, and accepted settlement schemes, and the agent’s wallet attaches a signed authorization and retires.

The protocol sets no price and takes no cut, so a seller in Jakarta and one in San Francisco face the same terms of access. The price arrives before the agent commits, making cost an input to tool selection and letting agents compare providers as they work. And because the standard fixes only the payment handshake, it leaves room for competing settlement schemes rather than routing agentic commerce through the same two card networks that intermediate most online payments today. Nothing in the design requires a foreign currency coin.

Agentic commerce and machine-to-machine payments

What stablecoins uniquely enable

01

Programmability

Conditional logic, atomic multi-party settlement, escrow & split payments—money agents can compose in code.

02

Micropayments

Sub-cent fees → pay-per-API, per-inference, per-compute; metered & streaming payments cards can't support.

03

Instant & 24/7

Settles in seconds, always-on, final. No T+1 processor. Machines don't keep banking hours.

04

Borderless

Cross-border settlement without FX / correspondent-bank friction.

05

Machine-native

Agent signs a scoped payload. No card credential to store or steal. HTTP-native (x402).

06

Composable

Interoperates with the tokenized economy, DeFi & open standards (x402, AP2, ERC-8004).

3.2 Tokenization and smart contracts

Tokenization is the process of embedding an asset's ownership rights and attributes onto a ledger, so that it carries its own logic: a loan can hold its repayment terms and the conditions the borrower must meet inside the contract itself, while dividend payments or collateral liquidations can execute on predefined conditions rather than through manual reconciliation across institutions. With tokenization, one can represent traditionally traded and non-traded assets— bonds, equity, debt, land, and real estate—thereby expanding the “contracting space” and helping “complete the market”.

For the purposes of this paper, two things matter. First, stablecoins are the cash leg that is essential for settlement. Furthermore, as the asset and the money sit on the same ledger, the swap happens in one step. Either both sides move or neither does. That removes the risk that one party pays and the other fails to deliver, the very risk the chain of intermediaries exists to manage.

3.2.1 Micro-level payoffs

A key friction that marginal consumers face in the traditional market is the high fixed cost of transaction, which makes small transactions prohibitively expensive. The ability to write specialized contracts alongside economically viable micropayments can resolve this friction. Consider a delivery rider in Sao Paulo who needs a motorcycle to work and has no credit file while earning small amounts many times a day. Fixed monthly installments are the wrong design for that income, and a lender cannot underwrite the risk on standard terms. Smart contracts can instead take an agreed share of all completed fares at the instance they settle, making repayment rise with earnings and pause on days with little or no work. Once the motorcycle is paid off, the same contract can route a slice of each fare into a tokenized bond or index holding, so a saver whose minimum viable investment previously exceeded a week's income can build a position a few cents at a time. Investing a few cents from each fare is uneconomic on any rail carrying a fixed per-transaction cost, but routine when the fare and the deduction settle on the same ledger. Such arrangements are easy to write in an enforceable manner with smart contracts, while being costly or impossible in traditional settings.¹¹

The same logic applies to several other types of transactions. The inability to write contracts covering every contingency is a long-noted impediment to economic growth. When a contract cannot specify every future state, one party ends up with control over the unspecified situations. Because the payoffs and actions in those situations are unspecified, the party holding that decision right can “hold up” the other party ex post, i.e., making the other party worse off. Fearing expropriation, the other party invests or walks away, and growth suffers.¹²

11 Tamanna Singh Dubey and Amiyatosh Purnanandam, “Can Cashless Payments Spur Economic Growth?” (working paper, SSRN, 2026), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4373602; and Shashwat Alok et al., “Open Banking and Digital Payments: Implications for Credit Access” (working paper, SSRN, 2024), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5028744. These studies show that the widespread adoption of UPI in India improved credit outcomes and economic growth, primarily for marginal businesses and households. UPI improved the verifiability of payment flows to these businesses and made them creditworthy even if they lacked traditional collateral. Smart contracts can take these activities further by writing even deeper contracts based on the payment information flow and programmable logic.

12 See the foundational work by Oliver Hart and John Moore, “Property Rights and the Nature of the Firm,” *Journal of Political Economy* 98, no. 6 (1990): 1119–58, <https://www.edegan.com/pdfs/Hart%20Moore%20>



Consider a farmer choosing between a generic crop with many buyers and a higher-value specialized crop with a single buyer, a local food processor. The specialized crop needs larger upfront investment, and no contract can foresee every contingency—market prices, weather, local disruptions. Once the crop is grown, the processor can demand a lower price, knowing the farmer has nowhere else to sell, and going to court is slow and costly. Anticipating this hold-up, the farmer plays safe and plants the generic crop, forgoing the more productive investment opportunity that would have left both parties better off. A smart contract resolves this friction: before planting, the parties lock the agreed price into a contract with funds held in escrow as stablecoins, and the payment releases automatically once delivery is verified. The contract can go even further; for example, by referencing the price to a benchmark index of commodities, or splitting payments across milestones such as mid-season payment or end-of-season payment. These arrangements are far less costly to write, monitor, and enforce than the traditional arrangements that involve several intermediaries and court systems.

The mirror image problem appears with intangible assets, and it is also where tokenization and agentic commerce intersect. When looking at physical crops, the vulnerable party is the one who has already made the investment. With an idea, a dataset, or a piece of licensed content however, that vulnerability shifts, as the asset can be copied at no cost if it is revealed. A seller cannot demonstrate what a dataset is worth without disclosing enough to destroy the sale, and the cost of writing, monitoring, and enforcing a license exceeds the value of any single use. Therefore the license is either sold wholesale to a large buyer or not sold at all. Tokenization changes the unit of trade. Imagine a research group in Nairobi holds labelled agricultural imagery and encodes the rights as a token whose terms specify a per-query price, the permitted use, expiry date, and a revenue split across the authors and the field surveyors who collect the data. AI agents assembling crop yield models in Sao Paulo query the dataset, present the credential identifying principal it acts for, and the contract checks the license terms, releases a fraction of a cent in stablecoins, and splits it among the rights-holders on receipt. Nothing in that exchange is negotiated, invoiced, reconciled, or litigated: the license executes rather than being enforced.

In this example, the counterparties are software, so the transaction needs to be priced at a level no card or bank rail can reach, and it must complete without a human in the loop. This is only feasible if usage rights are machine-readable rather than written in a physical contract. Also, the seller is precisely the participant current arrangements exclude: too small to negotiate a bilateral license with a foreign model developer, too small to detect or contest unlicensed use, and therefore paid nothing while the data is already being used. The same structure applies to a Jakarta musician whose track is used in generated media, or a Lagos translator whose parallel writings improve a language model.

[\(1990\)%20-%20Property%20Rights%20and%20the%20Nature%20of%20the%20Firm.pdf](#), and a large literature that follows this line of thinking. Philippe Aghion and Patrick Bolton's "An Incomplete Contracts Approach to Financial Contracting," *Review of Economic Studies* 59, no. 3 (1992): 473–94, <https://academic.oup.com/restud/article-abstract/59/3/473/1635295>, specifically focuses on incomplete contracts in financial markets and highlights the importance of contractual incompleteness on economic efficiency.

3.2.2 Macro-level payoffs

Contractual incompleteness handicaps complex, relationship-specific investments that drive growth: if the contracting framework cannot support them, they are never made. By making contingent actions automated and enforceable without courts or arbitrators, smart contracts reduce hold-up, so parties invest in mutually beneficial, relationship-specific projects.¹³ The gains extend to financing: as the contracting space becomes more complete—collateral that auto-liquidates, covenants that self-trigger, escrow that releases on verified delivery—credit becomes cheaper and more available to financially constrained firms. Tokenization also widens access to capital markets, a core source of wealth creation, diversification and risk-sharing.¹⁴ It can form a bridge from payments to capital markets for marginal households around the world, especially in the EMDEs.

Equity ownership is low even in rich economies (58% of US households in 2022) and often below 10% in EMDEs. Our January research, *From the Unbanked to the Unbrokered*, finds this exclusion to be structural, and not a preference: fixed costs, custody fees, settlement infrastructure, and account minimums price out savers below a wealth threshold, leaving roughly four billion adults with bank accounts, but no route into compounding assets. Tokenization fixes this, with stablecoins as the settlement rail underneath. Stablecoins let tokenized shares or bonds settle atomically against payment instead of through multi-day, intermediary-heavy clearing, which is what makes microtransactions as small as a mobile top-up economically viable. That matters more in EMDEs, where half of the countries lack a functional stock exchange and existing ones are often small, illiquid, and sized for institutional minimums. Stablecoin-settled tokenization is what lets a small saver in through the same rail that lets a local firm raise capital beyond capital lending, which otherwise misprices small borrowers.

Stablecoins are the first comprehensively regulated tokenized asset class which makes them suited as a settlement leg for everything else to come. For EMDE savers, stablecoins could provide the payment rail for accessing tokenized T-bills, money market funds, and index funds—investments most likely to be useful to ordinary households. The same logic applies beyond financial assets. Land and real estate can move onchain with property records that prevent the same plot from being pledged as collateral twice. Commodity-backed loans—like the ones tied to Brazilian grains or Indonesian palm oil—can settle once shipping documents are tokenized. Art and handmade goods can carry tokens proving origin and ownership, while licenses, patents, and royalties pay out the instant a stablecoin payment arrives.

¹³ Daron Acemoglu, Pol Antràs, and Elhanan Helpman, “Contracts and Technology Adoption,” *American Economic Review* 97, no. 3 (2007): 916–43, <https://www.aeaweb.org/articles?id=10.1257/aer.97.3.916>, study how contractual incompleteness leads to lower levels of advanced technology adoption, which can lead to sizable differences in productivity and comparative advantages across countries. See also Nathan Nunn, “Relationship-Specificity, Incomplete Contracts, and the Pattern of Trade,” *Quarterly Journal of Economics* 122, no. 2 (2007): 569–600, <https://dash.harvard.edu/server/api/core/bitstreams/7312037c-7a75-6bd4-e053-0100007fdf3b/content>, where he shows that a country’s ability to enforce contracts is a key determinant of the production of goods that require relationship-specific investments.

¹⁴ Coinbase Institute, “From the Unbanked to the Unbrokered: Unlocking Wealth Creation for the World,” Coinbase, January 19, 2026, <https://www.coinbase.com/en-in/public-policy/advocacy/documents/from-the-unbanked-to-the-unbrokered>.



3.2.3 Why stablecoins are essential

Tokenized assets without tokenized cash legs still settle through the banking system, which reintroduces the settlement lag, the reconciliation cost, and the fixed per-transaction fee that the tokenized leg is meant to remove. Atomic delivery-versus-payment usually requires both legs on the same ledger. Domestic-currency coins matter especially here: a local lending or borrowing market cannot easily run on a foreign currency without creating a currency mismatch between what's borrowed and what's earned. That makes an INR-, BRL-, or IDR-denominated coin a prerequisite for domestic tokenized credit and capital markets, rather than an optional addition. This split also answers the "digital dollarization" worry often raised in relation to EMDEs: domestic transactions stay denominated in local currency, while deep-liquidity dollar coins are reserved for the cross-border transactions.

3.2.4 Real-world applications

Tokenized private-credit protocols now extend about \$19 billion in active onchain loans to operating businesses. Goldfinch lends to FinTechs across Asia, Africa, and Latin America, and Centrifuge finances invoices and trade receivables – pairing off-chain underwriting with onchain settlement. India offers a directly relevant case – farmers borrow against warehoused crops using electronic Negotiable Warehouse Receipts (e-NWR), and startups like Whrri put the warehouse receipt on the blockchain so that the same lot cannot be pledged twice. In effect, trust is built with the blockchain technology, rather than relying on intermediaries. While on Aave, the largest decentralized lending protocol with roughly \$50-75 billion in deposits, loans run entirely on code: a borrower posts collateral and takes a stablecoin loan at an algorithmically set interest rate. If the value of collateral falls below a predefined threshold, the position is automatically liquidated by the contract without the involvement of any court or loan officers' discretion.¹⁵

3.3 Cross-border remittances

There is perhaps no better place than cross-border payments to show what stablecoins can do for EMDEs. This is aligned with the United Nations Sustainable Development Goals (SDGs), under which SDG 10(C) (Reduced Inequalities) notes "By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent".

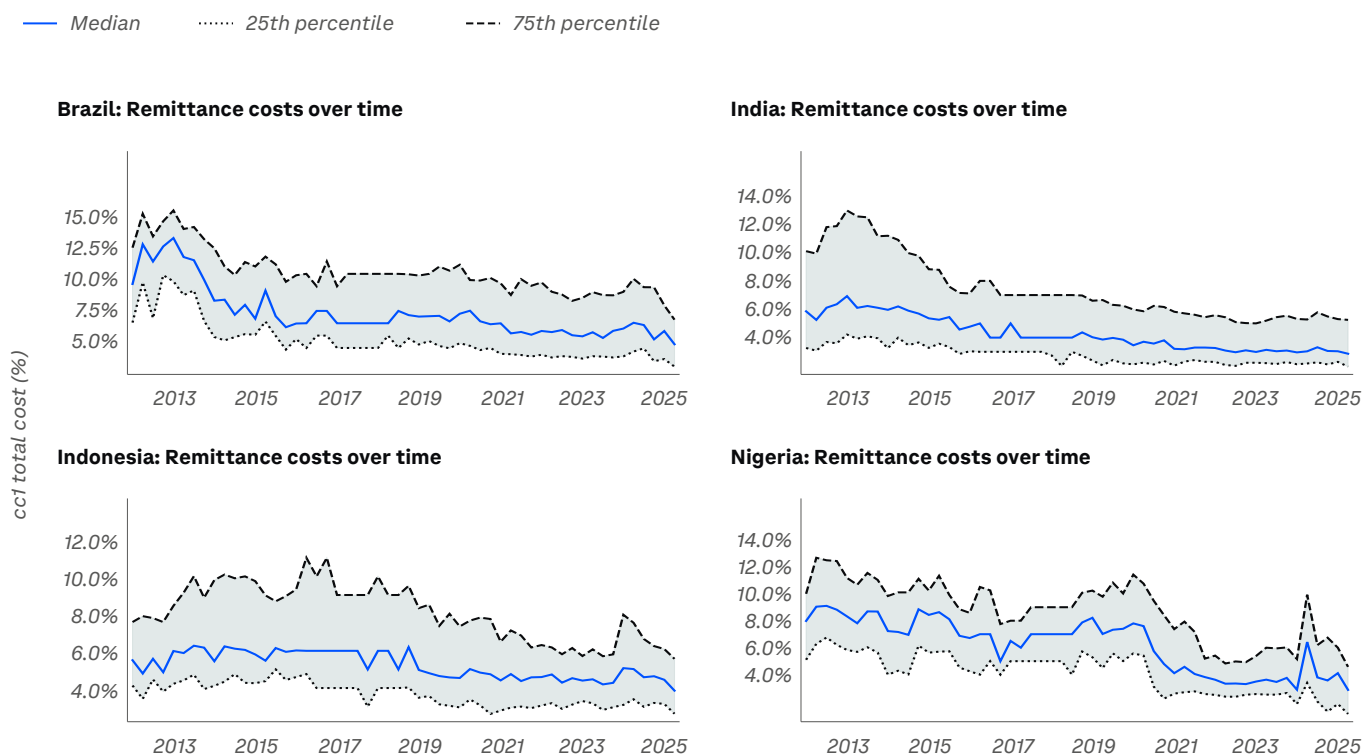
Two architectures dominate today: the traditional correspondent-banking channel, and money transfer operators (MTOs) such as Remitly or Western Union.

3.3.1 How does the current system work, and why it is costly?

In the correspondent-banking architecture, a sender's bank routes a transfer through a chain of intermediary banks that hold accounts with

¹⁵ See, for example, Whrri, accessed October 6, 2026, <https://whrri.loans/>; and Aave, accessed October 6, 2026, <https://aave.com/>.

Figure 3: Cost of remitting \$200 to Brazil, India, Indonesia, and Nigeria



Source: Supplied World Bank RPW datasets (2011-2025 Q3).
cct total cost; pooled quotes, not volume-weighted.

one another in different currencies (nostro/vostro accounts). Transfer instructions are exchanged over the SWIFT network, and settlement happens either through a real-time gross settlement system or directly in correspondent accounts. A typical cross-border payment passes through at least four institutions across different time zones and regulatory regimes, each adding fees, delay, compliance cost, and opacity about the exchange rate the payee ultimately receives. Some tasks, such as KYC checks and reporting, are duplicated across jurisdictions, and holding liquidity in multiple currencies adds cost that is passed on to both sides.

MTOs are non-bank financial institutions licensed to move money. Rather than relying on a chain of correspondents, they hold local-currency accounts in each country and pay the receiver from a pre-funded local pool. Individual transfers do not trigger any cross-border movement; instead, MTOs net offsetting flows and settle residual balances periodically at wholesale FX rates. Even so, they still depend on banks and the correspondent network to replenish those pre-funded pools, and the pre-funded accounts tie up liquidity, which adds to the cost.

The result is expensive, in both direct fees and the opportunity cost of delay. World Bank data put the cost of sending \$200 across borders at about 6.49 percent globally.¹⁶ **Figure 3** plots the median as well as the 25th and 75th percentile of cost of remitting \$200 to India, Brazil, Indonesia, and Nigeria: the median has fallen in all four but remains high, around 3-4 percent even in 2025—far above the 1 percent cost of

¹⁶ See World Bank, “An Analysis of Trends in Cost of Remittance Services,” Remittance Prices Worldwide Quarterly, issue 53 (March 2025), https://remittanceprices.worldbank.org/sites/default/files/rpw_main_report_and_annex_q125_1_0.pdf.

Figure 4: Transfer speed across countries (2025)

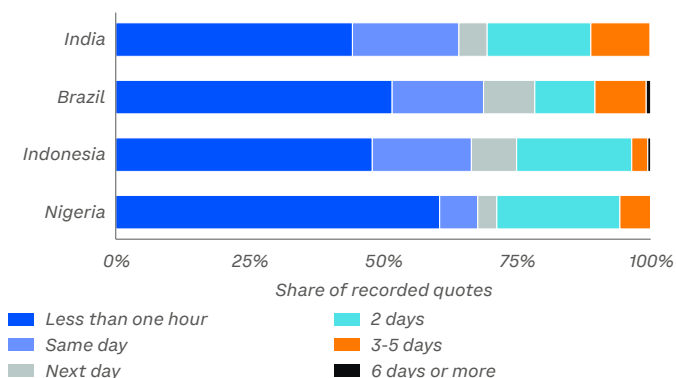


Figure 5: Cost of money transfer across the type of intermediaries in India

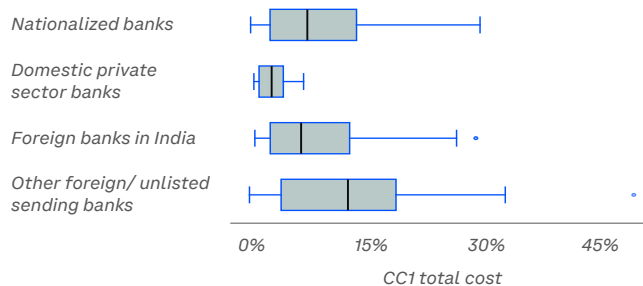


Figure 6: Global remittances and EMDEs' share

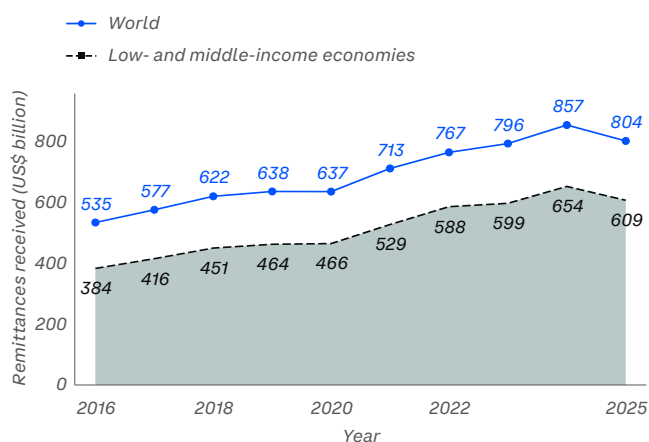
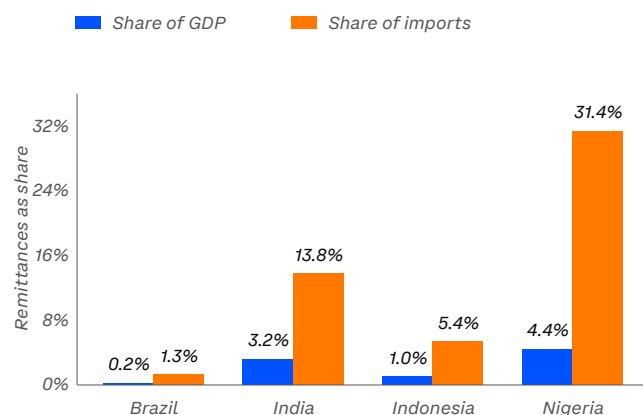


Figure 7: Remittances as a share of GDP and imports for select countries



stablecoins transfer for any transaction size.¹⁷ Speed compounds the problem: Figure 4 shows that in India about 40 percent of remittances take more than two days, with a similar pattern in Indonesia, Brazil, and Nigeria, and these delays fall hardest on those with the least developed infrastructure.

The burden also lands on the institutions most likely to serve the poor. Figure 5 shows that public-sector banks in India charge considerably more than private banks or MTOs, and because public banks have the largest rural and semi-urban reach, poor and marginalized customers face the highest costs.¹⁸

3.3.2 The scale of remittances for EMDEs

Cross-border flows are especially large for EMDEs. World Bank estimates put global remittances at about \$856 billion in 2024, of which roughly 75 percent (\$654 billion) went to EMDEs (figure 6); the largest recipients include India, Mexico, and the Philippines. India's inward remittances nearly doubled over a decade, from about \$70 billion to \$138 billion in

¹⁷ Adding on- and off-ramp costs of stablecoin remittance in countries with less-developed domestic payment rails can raise the cost. However, for countries like India and Brazil with deep domestic infrastructure such costs are likely very low. Further, as the payment volume goes up, the on- and off-ramp costs will come down as well.

¹⁸ Reserve Bank of India, "Basic Statistical Return (BSR) 2: Deposits with Scheduled Commercial Banks (SCBs)," accessed October 6, 2026, <https://www.rbi.org.in/scripts/AnnualPublications.aspx?head=Basic+Statistical+Return+BSR+2++Deposits+with+Scheduled+Commercial+Banks+SCBs>.



2024—about 3.7 percent of GDP.¹⁹ Figure 7 shows the 10-year average (2016-2025) of remittances as a share of GDP and of imports for the four countries. The scale differs, but remittances matter in each.

3.3.3 What stablecoins change

Lower cost and higher speed can have a substantial impact on EMDEs, at both the micro and macro levels—provided a properly designed infrastructure and regulatory framework help harness the benefits. The gains are largest where domestic rails are already strong: pairing stablecoins for the cross-border leg with UPI or PIX for the domestic leg, as in India and Brazil, can be multiplicative.

On cost, a stablecoin transfer runs under 1 percent of the amount, against the 3.5-7 percent most EMDEs face on traditional rails, and the savings are largest for the poor households that pay the most above the country average. The savings come from dropping the correspondent-banking chain, the pre-funding of foreign-currency liquidity, and slow settlement. In thinly traded corridors the on- and off-ramp costs are high today, but should fall as volumes grow. On speed, traditional rails take three to five days while stablecoins settle in seconds or minutes. Instant receipt frees funds stuck in transit and lets transfers match the payee’s needs, so senders do not have to batch large lumpy transfers and receivers do not have to borrow to bridge the gap—a benefit that compounds for small businesses whose working capital would otherwise be tied up, and for emerging-market currency pairs (say Brazil-Mexico or India-Indonesia) that otherwise route through the U.S. dollar. Stablecoins also add the programmability and transparency described earlier. Table 2 compares stablecoins, banks, and MTOs across all these dimensions.

Table 2:
Payment rails
compared:
stablecoins,
banks, FinTech
apps

	Stablecoins	Banks	FinTech apps
Cost, \$500 remittance	< 1%	3.5 - 7%	1.5 - 3%
Speed	Seconds to minutes	1 - 5 business days	Minutes to same day
Rate transparency	High	Low	Varies
Scalability	Very High	High	High
Programmability	Yes	No	No
Compliance	One stop	Multiple	Multiple
Flexibility	Very high	Low	Moderate

19 World Bank, “Personal remittances, received (current US\$),” World Bank Open Data, accessed October 6, 2026, <https://data.worldbank.org/indicator/BX.TRF.PWKR.CD.DT>.

3.3.4 The payoffs

The immediate benefit is a direct transfer to payees: intermediaries lose their rents and recipients gain, which also adds to the recipient country's foreign-exchange inflow. The longer-run benefit is a rise in remittance volume, discussed below.

At the micro level, recipients are often poor households relying on money from family abroad for daily consumption. When funds arrive in minutes and at lower cost, they absorb shocks—a job loss, a medical emergency—far better than by pawning assets or borrowing from moneylenders. The academic evidence provides strong support for this channel: Jack and Suri (2014) find that M-Pesa let Kenyan households smooth consumption through health shocks that cut non-users' consumption by about 7 percent; Suri and Jack (2016) estimate it lifted some 194,000 households—about 2 percent of Kenya's population—out of poverty. There is also a behavioral channel: high costs force large, infrequent transfers, whereas cheap transfers can be small and timely, smoothing consumption and improving saving for both sides.

At the macro level, remittances are a large and unusually stable source of foreign exchange that buffers currency shocks and supports the balance of payments, especially for import-heavy economies. Inward remittances financed almost half of India's merchandise trade deficit between FY2010-11 and FY2023-24.²⁰ Lower-cost, faster remittances can also raise volume, and consequently help an EMDE with its foreign currency reserves.

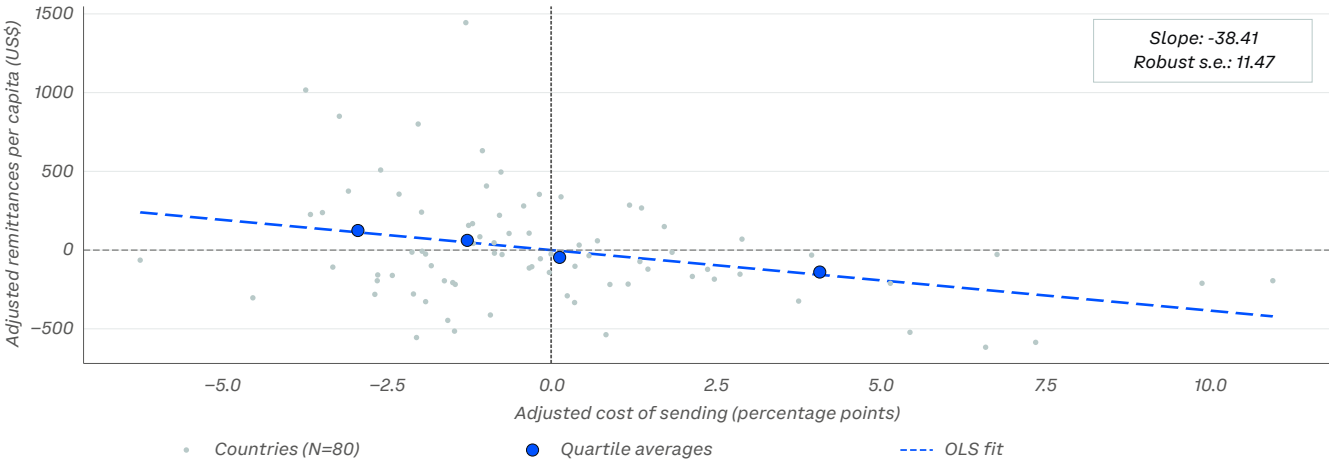
Across 80 countries for which we have data from the World Bank, our analysis shows that remittances per capita fall clearly with the cost of sending \$200 (Figure 8).²¹ At the median, inflows could rise by about \$38 per person per year for each 1-percentage-point cut in cost, so the 3-5 point reduction stablecoins can eventually deliver is worth roughly \$120-200 per capita for the average country. Applying a conservative elasticity from Aycinena, Martínez, and Yang (2010), Figure 9 shows that a 2-percentage-point cut could add billions of dollars to India's inward remittances, and Figure 10 repeats the exercise for Brazil, Indonesia, and Nigeria.

The broader literature agrees with these analyses: an IMF study of 71 countries (Kpodar and Imam, 2022) finds that lowering the cost of remittance to 3 percent could generate an extra \$32 billion in remittances, with larger gains where financial markets are less developed. Freund and Spatafora (2005) find a 1-percentage-point fall in fees raises recorded remittances by 16 percent, partly by shifting flows from informal to formal channels. Finally, because remittances are steadier than FDI or portfolio flows—and tend to rise as the local currency weakens—a larger remittance base dampens exchange-rate volatility, a real benefit for economies with thin reserves.

20 Reserve Bank of India, "Changing Dynamics of India's Remittances: Insights from the Sixth Round of India's Remittances Survey," RBI Bulletin, March 2025, https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?id=23260.

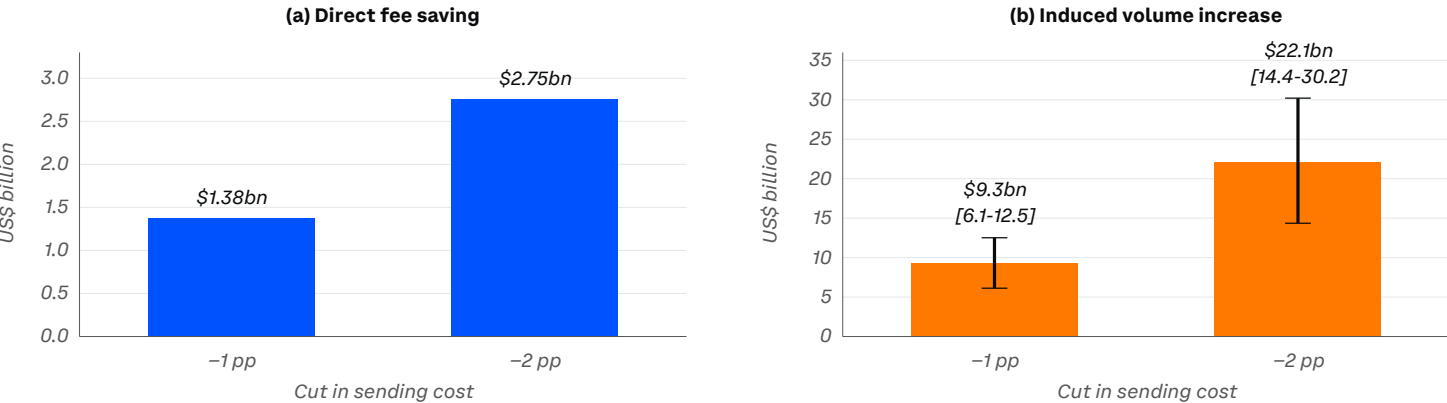
21 As is typical in an analysis of this nature, one cannot establish the cause and effect immediately from these statistical relationships. However, they provide strong correlations between the cost of remittance and volume.

Figure 8: Cost of remittance and volume
 2024 cross-country association, adjusted for population and GDP



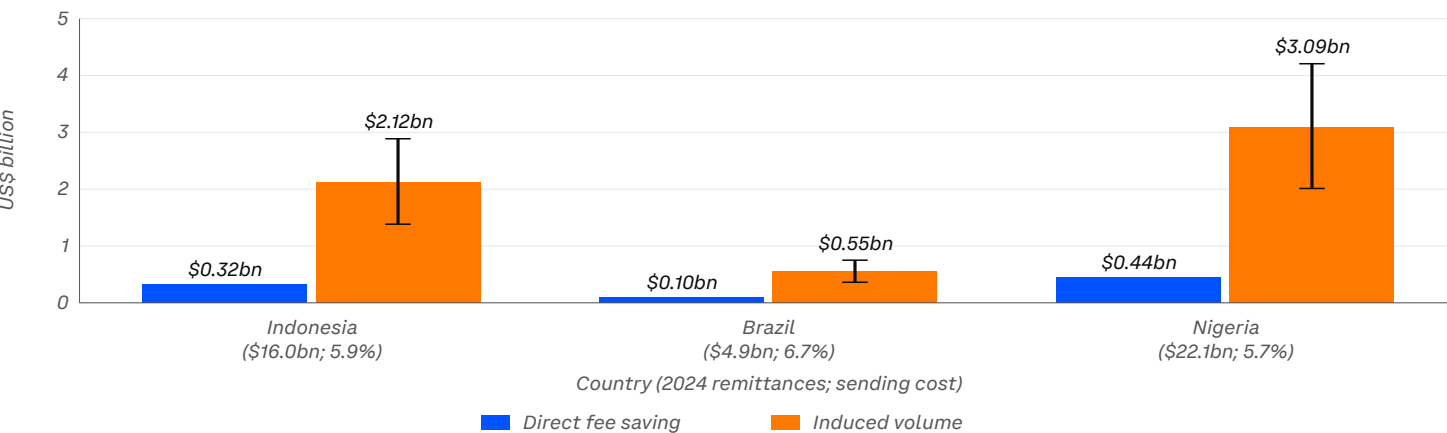
Cost of remitting US\$200; both variables residualized on log population and log GDP.
 OLS fitted on all complete cases; HC1 robust standard error. Association, not causation.
 Sources: World Bank RPW (cost); WDI (remittances, BX.TRF.PWKR.CD.DT).

Figure 9: Estimated fee savings and induced volume increases from a 1-2 percentage point cut in remittance costs
 Illustrative benefits from 1 and 2 percentage-point cuts in sending costs



Base: India 2024 remittances = US\$137.7bn; sending cost = 5.12%.
 Induced volume: assumed elasticity -0.3; whiskers: -0.2 to -0.4 sensitivity range.
 Sensitivity range is not a confidence interval; these are scenarios, not causal forecasts.
 Sources: World Bank WDI (remittances); Remittance Prices Worldwide (cost).

Figure 10: Estimated benefit of a 2-percentage point cut in remittance cost on direct fee savings and remittance volume in Indonesia, Brazil, and Nigeria
 Indonesia, Brazil, and Nigeria, 2024



Induced volume: assumed elasticity -0.3; whiskers: -0.2 to -0.4 sensitivity range.
 Sensitivity range is not a confidence interval; these are scenarios, not causal forecasts.
 Sources: World Bank WDI (remittances); Remittance Prices Worldwide (cost).

3.4. Competitive effects of fast payment rails

A competitive financial market is critical for growth and innovation, and because payments are the most foundational function of finance, an uncompetitive payments market holds back the rest of the system. Existing infrastructure—part legacy technology, part decades of accreted regulation—tilts the field toward large incumbents. Banks draw market power from a closed-loop system in which moving money across institutions and borders is costly, gain an information advantage from seeing their customers' payment flows, and enjoy public support through subsidized deposit insurance, liquidity access, and occasional bailouts. The result is a weak incentive to compete.

Fast, interoperable rails can change this. Brazil's PIX already has: Sarkisyan (2025) finds that as PIX spread, the banking market grew more competitive, with small banks gaining deposits as customers moved money in search of better rates, and an IMF study (2026)²² finds PIX-driven FinTech competition compressed banks' lending margins while improving operational efficiency.

Stablecoins add programmability and cross-border reach to that fast-rail foundation, extending competition along two fronts. In the financial sector, incumbents must offer better products to keep depositors and borrowers, while small banks and nonbanks gain a permissionless rail once reserved for the largest banks. In the real sector, small firms in cross-border commerce—who cannot, unlike large firms, run a trading desk or hire a bank to manage the flows—gain direct, low-cost access to cross-border settlement, narrowing a disadvantage that today raises their payment costs and supply-chain frictions.

In short, small banks, small businesses, and marginalized households stand to gain the most from better payment technology. UPI and PIX showed the early promise of fast interoperable rails; stablecoins, tokenization, and smart contracts can take it further, especially in EMDEs where payment frictions and contracting incompleteness are high.

22 Rui Xu, "Fintech Competition and Banks' Shrinking Margins in Brazil," IMF Working Paper No. 2026/007 (International Monetary Fund, 2026), <https://www.elibrary.imf.org/view/journals/001/2026/007/article-A001-en.xml?ArticleTabs=Abstract>.

4

Challenges: Real and perceived

Every financial innovation carries risk, and stablecoins are no different; the benefits above come with concerns that prudent regulation must manage if an economy is to capture the upside without taking on undue risk—the efficiency-risk trade-off discussed earlier in the paper. This section discusses these concerns from an emerging market viewpoint. Two themes recur throughout these discussions: (i) many of the oft-cited risks are either overstated or manageable through prudent institutional design, and (ii) prohibition is rarely the answer due to its tendency to push activities into unmonitored channels, making it harder to control the eventual risk.

4.1 Credit supply and monetary transmission

Concerns about deposit-flight: A common worry is that stablecoins shrink bank credit as depositors swap deposits for coins. The argument ignores the general equilibrium effect. When a resident buys a dollar-backed coin, the issuer must hold reserves against it—under the GENIUS Act, in bank deposits, Treasury bills, or similar safe dollar assets—so the money returns to the banking system and aggregate deposits do not fall. What changes is their distribution: away from scattered retail deposits toward larger, more wholesale-like funding (Altavilla et al., 2026), likely favoring banks that are efficient and compete hardest. Whether that raises or lowers credit is not obvious: efficient community banks may gain.

In addition, the wholesale funding mix imposes market discipline that curbs excessive risk-taking and lowers the eventual cost to taxpayers from bailouts and underpriced deposit insurance at large banks. The evidence so far shows little deposit flight: studies by the Council of Economic Advisers, Charles River Associates, and academics agree that stablecoin growth has not meaningfully eroded U.S. bank deposits, and a Coinbase Institute report notes that U.S. community-bank deposits grew even as USDC's market cap reached about \$75 billion.²³ In short, disintermediation is about institutional design and credit frictions, not the form of private money that circulates; the regulatory goal should be to encourage credit creation, not to police a shift from banks to other intermediaries.

4.1.1 Concerns about monetary policy transmission

Could stablecoins weaken a central bank's control of monetary policy? For EMDEs the answer depends on the currency of backing and regulation controlling capital controls. For local-currency coins, transmission is likely to improve, not worsen. A key mechanism through which a central bank conducts its monetary policy is by increasing or decreasing its policy rate, which subsequently gets transmitted to the real economy via banks. If banks pass these rates to their depositors and borrowers immediately and fully, then the transmission is most effective. Large banks with market power generally do not do so to their depositors. With

²³ Coinbase Institute, "Small Banks and Stablecoins: Nothing to Fear, Much to Gain," Coinbase, July 15, 2026, <https://www.coinbase.com/public-policy/advocacy/documents/small-banks-and-stablecoins>.

the competition from stablecoins, the transmission of these rates to the real sector will be faster and more complete. The evidence from the U.S. banking sector points in this direction: transmission of monetary policy is stronger in areas with more competitive banking markets.²⁴ A more wholesale, rate-sensitive funding mix reinforces the effect.

The genuine concern is foreign-currency backed stablecoins: if residents hold and transact in dollar coins at scale, part of the money supply is tied to a unit the central bank does not issue, and transmission weakens as domestic funding costs begin to track foreign conditions (Altavilla et al., 2026). This risk is real but manageable, and largely matters only where the local currency is already weak; we discuss the containment tools—licensed ramps, holding limits, and ring-fencing banks from foreign-coin funding—under dollarization (Section 4.2). The policy implication is urgency, not prohibition: adoption is driven by network effects, so a jurisdiction that delays clarity does not keep stablecoins out—as Nigeria shows, it cedes ground to dollar coins that are hard to unwind later. Moving early to license a credible local-currency coin and set clear rules for foreign-currency ones is the better course.²⁵ A country that has policy for a credible local-currency coin early locks network effects around its own unit; a country that delays discovers, too late, that dollar-coin holdings cannot be unwound.

A related point that goes the other way is often missed. Because issuers park reserves in short-term government paper, stablecoin inflows raise demand for those bills and lower their yields: both Ahmed & Aldasoro (2025) and Cerutti et al. (2026) find that inflows into dollar-backed stablecoins push down short-term U.S. Treasury yields. The implication for an EMDE is clear: a well-regulated stablecoin backed by domestic government bills can potentially channel demand into the sovereign's own short-term debt, lowering its cost of funds.

4.2 Dollarization and monetary sovereignty

Because roughly 80 percent of stablecoin supply is dollar-backed, a natural concern for the EMDEs is that stablecoins accelerate dollarization and erode monetary sovereignty. The worry is legitimate in some cases but often overstated. It helps to see dollarization as a spectrum, not as an on or off switch. Payment dollarization, where everyday transactions are quoted and settled in dollars, is unlikely in large EMDEs with strong domestic rails (e.g., India, Brazil, Indonesia) and has historically followed war, regime change, and major economic instability rather than financial innovation. Real dollarization, where prices themselves are set in dollars, is very unlikely for a large, diversified economy. The case regulators should focus on is the one in between—financial dollarization, where residents save and borrow in dollars while still transacting locally—which is a live risk in high-inflation, capital-controlled economies like Argentina but not in robust ones like India and Brazil.

24 See Itamar Drechsler, Alexi Savov, and Philipp Schnabl, "The Deposit Channel of Monetary Policy," *The Quarterly Journal of Economics* 132, no. 4 (2017): 1819–76, https://econpapers.repec.org/article/oupqjecon/v_3a132_3ay_3a2017_3ai_3a4_3ap_3a1819-1876..htm.

25 Axel Schimmelpfennig and Bo Zhao, "Stablecoins in Nigeria: A Growing Cross-Border Channel," *International Monetary Fund*, June 16, 2026, <https://www.imf.org/en/news/articles/2026/06/16/stablecoins-in-nigeria>.



Even where a foreign coin does circulate, its footprint can be very well contained. Access can be routed through licensed, KYC-compliant on- and off-ramps that report holdings and flows to the central bank; per-user holding and transaction limits can permit cross-border payments while capping domestic store-of-value use; and banks can be barred from funding themselves or lending in foreign-currency coins, keeping dollarization out of the credit channel. A ban does the opposite—it pushes activity into underground networks and offshore exchanges beyond the regulator’s view, as in Nigeria, where restrictions coincided with a surge in stablecoin use.

The asymmetry of risks favors action. The GENIUS Act’s clarity spurred a wave of dollar-coin issuance; if other jurisdictions build comparable frameworks for their own currencies, the dollarization question largely dissolves because residents can transact onchain in their own money while using USD coins only for cross-border payments. A country that refuses to license a local-currency coin does not avoid stablecoins—it cedes the ground to dollar coins and risks being left outside the emerging financial architecture.

Concerns around local-currency coin sharing infrastructure with dollar coins making conversion frictionless, so local coins “might even accelerate the adoption of FX stablecoins” can also be addressed. The risk can be managed as conversion friction is a policy choice, not a technological given. Policy design can be applied at the local-to-foreign conversion point, which is observable and enforceable. A local coin inside the perimeter gives the regulator a seat at the conversion table.

4.3 Capital flight and capital-flow management

Several regulators locate the gravest risk not in payments but in the capital account: stablecoins can move value across borders without the regulated intermediaries on which capital-flow management measures (CFMs) depend. The concern is well founded—and it is the strongest argument against laissez-faire. But CFMs were always enforced at chokepoints, and the onchain economy has chokepoints of its own: the licensed exchanges, custodians, and ramps where coins convert to and from domestic bank money. Routing all legal conversions through licensed ramps, applying the FATF travel rule, and requiring ramp-level reporting to the central bank re-creates the lost friction—more cheaply than the correspondent chain ever provided it. Prohibition does the opposite: it abolishes the legal chokepoints while leaving the technology untouched, pushing flows into unhosted wallets and offshore venues where supervision ends. A capital-control regime that cannot see a flow cannot manage it; regulation makes flows visible precisely so they can be managed.

4.4 Financial stability

Can stablecoins destabilize the financial system? It depends on how the regulatory regime is designed. A fully reserved, fiat-backed stablecoin is close in spirit to a “narrow bank”: it holds safe, liquid assets against its liabilities and, unlike a commercial bank, does no maturity transformation and takes no credit risk (Pennacchi, 2012; Gorton and Zhang, 2023). In that respect a well-run coin can be safer than a bank deposit, which is backed by a portfolio of illiquid loans. The risk lies



elsewhere: if reserves are held in assets that cannot be liquidated at par on demand—long-duration bonds, commercial paper, riskier instruments—a wave of redemptions can force fire sales and break the peg. The answer is not prohibition but a mandate for high-quality, liquid, transparently reported reserves and sound operational controls, precisely what frameworks like the GENIUS Act require.

4.5 Financial crime and illicit use

Do stablecoins facilitate crime? Financial crime is neither new nor unique to stablecoins, and three points put it in perspective. First, the traditional payment system is far from fraud-free; the question is not whether a rail can be misused but how cheaply misuse can be detected, deterred, and resolved. Second, a stablecoin is a bearer instrument, like cash, and carries the same anonymity concerns—illicit finance is not a problem the technology invented. Third, the scale is small: illicit flows are a low single-digit share of onchain volume—estimates range from around 0.1 percent (Chainalysis)²⁶ to roughly 1.2 percent of all crypto activity (TRM Labs)²⁷ with stablecoin-specific illicit flows on the order of 0.4 percent of stablecoin volume.

The most careful recent assessment, FATF's 2025 review, finds that criminals are using stablecoins more—but largely because stablecoins now account for so much of all crypto activity, not because they are unusually prone to crime.²⁸ The misuse it documents (state-sponsored theft, investment scams, terrorist financing, drug trafficking, sanctions evasion) almost always runs through a business that deals with customers—an unlicensed or weakly supervised exchange, broker, or cash-out service, or informal person-to-person trades—with the stablecoin typically the payout from a crime or the final step turning crypto into cash.²⁹ The FATF's own findings point to better regulation, not a ban: too few of these businesses are supervised—by 2025 only about 85 of 117 countries surveyed had passed laws to regulate them—so the place to enforce rules is the on- and off-ramps that convert crypto to cash, by requiring them to verify customers and flag suspicious transfers. A ban does the opposite, pushing activity toward exactly the unlicensed, offshore operators the FATF warns about. The workable strategy is layered: KYC and travel-rule enforcement at licensed ramps, onchain analytics that trace flows of cash never permitted, and caps on transfers from unhosted wallets into the regulated system.

4.6 On- and off- ramp costs

Some studies note that the all-in cost of a stablecoin remittance can exceed the headline “under 1 percent” once on- and off-ramp costs are counted—turning local cash into a coin at the start and back into local cash at the end.³⁰ The blockchain transfer itself is cheap (a network fee

26 Chainalysis, “2025 Crypto Crime Report,” Chainalysis, 2025, <https://www.chainalysis.com/blog/2025-crypto-crime-report-introduction/>.

27 TRM Labs, “2026 Crypto Crime Report,” TRM Labs, January 28, 2026, <https://www.trmlabs.com/reports-and-whitepapers/2026-crypto-crime-report>.

28 Financial Action Task Force, “Targeted Update on Implementation of the FATF Standards on Virtual Assets and VASPs,” FATF, June 26, 2025, <https://www.fatf-gafi.org/en/publications/Fatfrecommendations/targeted-update-virtual-assets-vasps-2025.html>.

29 Financial Action Task Force, “Targeted Report on Stablecoins and Unhosted Wallets,” FATF, June 26, 2025, <https://www.fatf-gafi.org/en/publications/Virtualassets/targeted-report-stablecoins-unhosted-wallets.html>.

30 Wenxin Du, Catherine Huang, and David Scharfstein, “Competing Rails for Cross-Border Payments: Banks, Fintechs, and Stablecoins” (working paper, Harvard Business School, 2026), <https://www.hbs.edu/ris/Pub>.

of a fraction of a cent, at a near-fair rate); the real cost sits at the conversion points, above all the charge to withdraw back into a bank account or cash, which varies widely by provider and country and runs higher in thin markets. If no off-ramp is needed, the cost disappears.

This is a real friction in some corridors, but not a permanent feature of the technology: conversion costs fall with competition, market depth, and scale, all of which improve as volumes grow and more licensed providers enter, and where ramps are already deep the all-in cost is low. Policy can speed this along—licensing more providers, including banks, and wiring the cash-out step directly into the national fast-payment rail so a user can move from stablecoin to a bank balance in seconds, removing the most expensive link in the chain.

4.7 CBDCs and stablecoins

Stablecoins are not the only new form of digital money. Central banks are building their own digital currencies (CBDCs), and many countries are rolling out fast national payment systems in the mold of India's UPI and Brazil's PIX. In such a fast-changing landscape, does a stablecoin still have a role?

The realistic future is not one technology winning but all three working side by side, because each does something different: fast national systems handle everyday domestic payments cheaply and instantly; a CBDC is central bank money that can be programmed for specific uses; and stablecoins add programmability and cross-border reach on an open network anyone can build on. Cross-border interoperability, though, has proved hard. Project mBridge,³¹ a shared platform linking several central banks' CBDCs, reached a working prototype, but the BIS stepped back in 2024 and handed it to the participating central banks,³² after which it became entangled in geopolitics. The BIS's Project Agorá,³³ which connects central bank and commercial bank money to settle large cross-border payments, completed live testing in 2026 with about 40 institutions—but a widely shared system is still some way off.

For an emerging economy, the practical lesson is to plan for all three rather than bet on one. The national fast-payment system is best for domestic payments, a CBDC can move central bank money, and well-regulated stablecoins to support programmability and private-sector innovation. The pieces are complements; the aim is to let them fit together.

[lication%20Files/Du_Huang_Scharfstein_14Feb2016_66992079-2e6b-4584-95cf-014441c77485.pdf](#). The authors compare the all-in cost, including the on- and off-ramp costs, of cross-border remittances across three systems: banks, MTOs, and stablecoins. For a related study, see Alberto Di Iorio, Enrica Di Stefano, Michele Mascioli, and Giorgio Trebeschi, "Are Stablecoins Efficient for Remittances? Evidence from a Mystery Shopping Exercise by Banca d'Italia," Markets, Infrastructures, Payment Systems no. 86 (Banca d'Italia, July 2026), <https://www.bancaditalia.it/pubblicazioni/mercati-infrastrutture-e-sistemi-di-pagamento/ap-profondimenti/2026-086/index.html?com.dotmarketing.htmlpage.language=1>, who execute transfers using a "mystery shopping" exercise across these systems.

31 Bank for International Settlements, "Project mBridge," accessed October 6, 2026, https://www.bis.org/about/bisih/topics/cbdc/mcbdc_bridge.htm.

32 Ledger Insights, "BIS Debates Ending Cross Border CBDC Project mBridge – Report," Ledger Insights, October 29, 2024, <https://www.ledgerinsights.com/bis-debates-ending-cross-border-cbdc-project-mbridge-report/>.

33 Bank for International Settlements, "Project Agorá," accessed October 6, 2026, <https://www.bis.org/about/bisih/topics/fmis/agora.htm>.

Emerging markets have an opportunity to design regulation that contains the risks of stablecoins without losing their benefits. Over-restrictive rules only push activity into the shadow economy, where the risks are harder to control; the goal is prudent regulation that manages risk while allowing innovation in cross-border payments, smart contracts, and agentic commerce. The GENIUS Act in the U.S. and MiCA in the EU point to workable paths, and EMDEs that delay risk being left behind—over time, a country without an active stablecoin ecosystem could find itself at a serious economic and geopolitical disadvantage. The framework below is a starting point, and it should be comprehensive, covering both domestic-currency coins and USD- (or other foreign-currency-) backed coins.

5

Policymakers should use a prudent regulatory approach

5.1

A broad framework for regulation

5.1.1 Legal clarity and definitions

The law must say plainly what a stablecoin is, what it does, and who stands behind it:

- Define the instrument—electronic money, a deposit, or a new category—since that determines which regulator is in charge and which rules apply.
- Spell out the issuer's duties (backing, redemption, disclosure) and the holder's right to redeem at face value.
- Make the reserves bankruptcy-remote, so the assets backing the coins belong to holders, not the issuer's other creditors, and holders are made whole if the issuer fails.
- Give onchain settlement clear legal standing—an onchain transfer is final and enforceable—and confirm that smart contracts are enforceable, the footing the tokenized economy depends on.
- Clarify the tax treatment of using a stablecoin, so uncertainty does not quietly discourage adoption.

5.1.2 Licensing and prudential rules for domestic issuers

A domestic-currency coin should be as trustworthy as a bank deposit—arguably more, since a fully backed coin resembles a narrow bank that takes no credit risk:

- Who may issue: licensed banks or approved nonbank issuers that pass fit-and-proper tests and ongoing supervision.
- Reserves: backed one-for-one by safe, liquid assets—cash and short-term government debt—held separately from the issuer's own funds; holding them in local government bills also channels demand into the sovereign's short-term debt and lowers its funding cost.



- Transparency: monthly public reserve reports and independent audits, not self-attestations.
- Liquidity in tiers: a set share redeemable same-day in cash, the rest in short, safe instruments, so redemptions can be met without fire sales.
- A capital cushion to absorb losses, plus strong operational and cybersecurity standards—key management, smart-contract audits, and business-continuity plans.

5.1.3 Ring-fencing and foreign-currency safeguards

The monetary-policy concerns around foreign-currency coins can be handled, keeping their footprint in check:

- Reporting: route foreign-coin access through licensed exchanges that report holdings and flows to the central bank—you cannot manage what you cannot see.
- Per-user limits on foreign-currency coins that allow cross-border payments while capping domestic store-of-value use, relaxed over time as monitoring matures.
- Protect the credit channel: bar banks from funding themselves or lending in foreign-currency coins, keeping dollarization out of the banking system.
- A last-resort cap on any foreign coin that starts becoming everyday domestic money, along the lines of MiCA's payment cap.

Key elements of a stablecoin framework for EMDEs

For each element: The risk it addresses and the measures that deliver it

Legal clarity and definitions Addresses: Legal uncertainty deters adoption • Statutory definition of the instrument • A holder's right to redeem at par • Bankruptcy-remote reserves • Clear tax treatment	Licensing and prudential rules Addresses: Hidden reserve quality; issuer failure and runs • Licensed issuers, fit-and-proper tests • 1:1 segregated, high-quality reserves • Monthly audits and public disclosure • Capital, liquidity and cyber standards	Ring-fencing and FX safeguards Addresses: Currency substitution; weaker monetary control • Report foreign-coin holdings and flows • Per-user limits on foreign coins • Banks barred from FX-coin lending • Last-resort cap if it becomes daily money
Interoperability with national rails Addresses: Fragmented rails; costly cash-in and cash-out • Domestic rail (UPI/PIX) for local legs • Ramps wired into the national rail • Open technical standards • Foreign income convertible to local coin	Supervision and consumer protection Addresses: Consumer harm; standards slipping over time • Ongoing audits and redemption stress tests • Guaranteed redemption and redress • Regulatory sandboxes and corridor pilots • User education	International coordination Addresses: Cross-border leakage; regulatory arbitrage • Align with EU, US and Asian frameworks • Common reserve and disclosure standards • Information-sharing across jurisdictions • Engagement via the G20 and BRICS

5.1.4 Combining payment rails

The largest gains come from combining rails, not choosing among them:

- Domestic rail for home, stablecoins for innovation: let UPI- or PIX-type systems handle domestic payments and stablecoins carry the cross-border leg.
- Wire the ramps into the national rail: license conversion services that connect directly to the instant-payment system, so moving between a coin and a bank account is instant and cheap—a practical way to lower off-ramp costs for end users.

5.1.5 Ongoing supervision, consumer protection, and learning by doing

- Continuous supervision: ongoing audits, public disclosure, and periodic stress tests of whether an issuer could meet a redemption run.
- Consumer protection: guaranteed redemption at par, a clear route to complain and be compensated, and plain-language disclosure of what a holder is and is not protected against.
- Learn by doing: use regulatory sandboxes and live pilots on specific remittance corridors to test whether stablecoins truly cut costs before letting them scale.
- Financial education, so users understand the instrument they hold.

5.1.6 International coordination

Because coins cross borders, domestic rules work better when they fit the wider system:

- Align with international norms taking shape in the EU, the United States, Singapore, Hong Kong, and Japan, adapting them to local conditions and working toward mutual recognition of licensed issuers.
- Common standards on reserves, disclosure, and information-sharing, so a coin regulated in one place is trusted in another.
- Use international forums: India pressed for common crypto rules during its G20 presidency, and BRICS discussions on cross-border settlement show both the appetite for coordination.

Taken together, these six elements let an economy sit closer to the efficiency-risk frontier: enough regulation to keep stablecoins trustworthy and monetary control intact, but not so much that the benefits are strangled or pushed offshore. EMDEs that move early—licensing a credible domestic-currency coin while ring-fencing foreign ones—stand to capture cheaper remittances, efficient agentic commerce, better credit, and deeper markets, and to avoid being left behind as this foundational change in financial architecture takes shape worldwide.

6

Country case studies: India, Brazil, and Indonesia

This section takes a closer look at specific potentials, infrastructure, and challenges that three of the largest EMDEs—India, Brazil, and Indonesia—have when it comes to the adoption of stablecoins.

6.1 India

India has the most to gain and among the tightest policy constraints. A prudent framework for INR-backed stablecoins, with clear rules, could pay rich dividends; the risk is being left behind, since in a future global economy countries without a stablecoin may struggle to compete with those that have strong onchain digital payment networks.

6.1.1. The opportunity

Remittances. India is the world's largest remittance recipient, at about \$150 billion in 2025³⁴—roughly a fifth of the global total. The main corridors are the Gulf (construction and domestic workers in the UAE and Saudi Arabia sending money to often-remote parts of the country) and the United States. Average costs have fallen but still run at 5 percent or more for many senders, especially in remote areas and through public-sector banks, so even a small cut in cost and delay puts real money in ordinary households' hands. Informal peer-to-peer stablecoin transfers already occur; the opportunity is to move that flow onto a compliant rail and cut costs across the board.

Agentic commerce. India has a rare combination of large online commerce infrastructure and deep AI talent. India's DPI provides a strong foundation for agentic commerce in the country, and the country's FinTech sector is making tremendous progress in facilitating e-Commerce with programmable logic. India has all the infrastructure to run a full agentic loop to realize its AI potential, with a programmable payment system that the stablecoin provides.

Tokenization and smart contracts. Building on India's DPI and UPI, India's FinTechs are moving toward tokenization and smart contracts: firms like Whrri³⁵ show the potential for working-capital credit to small borrowers on the blockchain, and IBBIC, a bank consortium, runs blockchain workflows for trade documents and inland letters of credit. Smart contracts could matter most where courts are slow: to sustain 6-8 percent growth India needs faster enforcement than its congested courts provide—the World Bank Doing Business 2020³⁶ put the average time to resolve a commercial dispute at about four years, the National Judicial Data Grid (NJDG)³⁷ records a backlog of over 50 million cases, and India ranks 163rd on enforcing contracts. Warehouse lending on

³⁴ World Bank, "Personal remittances, received (current US\$)," World Bank Open Data, accessed October 7, 2026, <https://data.worldbank.org/indicator/BX.TRF.PWKR.CD.DT>.

³⁵ Whrri, accessed October 7, 2026, <https://whr.loans/>.

³⁶ World Bank Group, "Enforcing Contracts," Doing Business, accessed October 7, 2026, <https://archive.doingbusiness.org/en/data/exploretopics/enforcing-contracts>.

³⁷ National Judicial Data Grid, accessed October 7, 2026, https://njdg.ecourts.gov.in/njdg_v3/.



smart contracts can settle obligations automatically, compressing a years-long dispute to seconds; courts still handle genuine factual disputes, but the payment, escrow, and collateral legs need not wait on them.

Competition. UPI has made domestic payments seamless and competitive, but cross-border remittances still route through a small set of authorized-dealer banks and licensed MTOs, leaving room for more competition and innovation.

6.1.2. Existing payment landscape

Domestic payments are dominated by UPI—instant and free for most retail users. That near-zero user cost is real but cross-subsidized: a 2022 RBI discussion paper estimates a typical ₹800 UPI transaction costs about 0.25 percent of value, split across the issuer bank (0.10), the app (0.06), the acquirer (0.07), and NPCI (0.02), funded by taxpayers and banks.³⁸ The government recently introduced the Merchant Discount Rate (MDR) framework for UPI to accommodate these transaction costs. As volumes scale, the required investment in infrastructure, cybersecurity, and fraud prevention will keep growing, borne opaquely by the state and banks under the current model. A stablecoin rail instead makes the cost an explicit, onchain fee borne by the transacting parties, preserving the incentive to invest over time. India is also piloting a CBDC, the e-rupee (retail and wholesale pilots launched in November 2022), and a mature stablecoin regime could complement the existing payment rails.

6.1.3. Constraints

Policy is the binding constraint: the RBI leans toward prohibition, viewing foreign-currency coins as a threat to monetary sovereignty and rupee coins as a risk to revenue and stability, with no enabling framework.³⁹ Tax makes ramps uneconomic: a 30 percent tax on gains plus a 1 percent tax deducted at source on every transaction makes on- and off-ramping unviable for most uses.

6.1.4. Recommendations

- Provide policy clarity: a clear framework for regulated rupee-referenced stablecoins, with the safeguards set out in the regulatory blueprint.
- Run a capped, time-bound regulatory sandbox on a single remittance corridor. Pilot a stablecoin-to-UPI cross-border bridge on a high-volume corridor such as UAE-India, keeping the domestic leg on UPI and the cross-border leg on a stablecoin.
- Rationalize the withholding tax of 1 percent, aligning the rate with the transaction's economic cost rather than a flat charge.

³⁸ Reserve Bank of India, "Discussion Paper on Charges in Payment Systems," August 17, 2022, <https://www.rbi.org.in/scripts/PublicationsView.aspx?id=21082>.

³⁹ Harsh Kumar, "Stablecoins Bigger Threat to Indian Economy Than Cryptocurrencies?" Outlook Money, April 10, 2022, <https://www.outlookmoney.com/news/stablecoins-a-bigger-threat-to-economy-than-cryptos-rbi-dy-governor-opinion-divided-news-190989>.

Brazil is a world leader in digital public infrastructure, finance, and tokenization, with a strong appetite for stablecoins. Regulatory and tax insecurity for issuers remains a key constraint.

6.2.1. The opportunity

Remittances and cross-border: Inward personal remittances are small relative to GDP, so the real opportunity lies elsewhere: (i) in the dollars earned by freelancers and small businesses selling into the global market. A developer who invoices in USD can be paid faster by receiving USDC and off-ramping to reais via PIX through a domestic provider. And access to dollars through a dollar-backed coin democratizes dollar savings for ordinary Brazilians, once the preserve of a privileged few. (ii) Importers, exporters and treasuries of mid-sized firms that

face the correspondent-banking chain, the wholesale-retail spread and, for smaller firms, no access to a trading desk. And (iii) the “dollar-proxy” demand of Brazilian firms and households for a dollar-denominated instrument that settles around the clock.

Agentic commerce. Brazil is well placed for agentic commerce and machine-to-machine payments, thanks to its growing FinTech sector and the Open Finance, which lets an authorized third party - an agent - initiate payments from any account and to Pix Automático, which brings recurring, pre-authorized payments to the public rail. Iniciador⁴⁰—an open finance payment FinTech—has already launched an agentic payment system using PIX for settlement and Open Finance for initiation.⁴¹ Integrating them with stablecoins can connect the cross-border rail and bring further efficiency to the network.

Tokenization and smart contracts. Brazil is an emerging-market leader in asset tokenization, with a fast-growing private RWA market and Drex, the central bank’s tokenization platform focused on reconciliation of liens and collateral across institutions. Unsurprisingly, some call it the global center of RWA tokenization,⁴² bringing onchain transparency to bonds, equity, grains, receivables, and private credit. Issuance is scaling fast—R\$1.5 billion in January 2026, up from R\$122 million a year earlier (Avalon Blockchain Consulting)⁴³—opening opportunities in farm credit, real-estate finance, and trade credit if paired with programmable money. Smart contracts also fit Brazil’s slow courts: a first-instance commercial dispute in the country takes about 801 days at a cost near 22 percent of the claim, with a backlog of roughly 80 million cases. Brazil ranks 58th of 190 on enforcing contracts, (World Bank, Doing Business 2020; CNJ, Justiça em Números)⁴⁴, suggesting that the courts are sound but slow.

40 Iniciador, accessed October 7, 2026, <https://iniciador.com.br/en>.

41 “Fintech brasileira leva Pix à era da inteligência artificial,” NeoFeed, May 29, 2026, <https://neofeed.com.br/startups/fintech-brasileira-leva-pix-a-era-da-inteligencia-artificial/en/>.

42 Matej Prša, “Why Brazil and XDC Network Are Winning the RWA Race,” BeInCrypto, February 3, 2026, <https://beincrypto.com/brazil-rwa-tokenization-liqi-xdc-100m/>.

43 Avalon, “Brazil RWA Tokenization in 2026: Why the World’s Largest Emerging Market Is Leading the Institutional Blockchain Revolution,” June 6, 2026, <https://avalonbc.com.br/en/insights/brazil-rwa-tokenization-2026#intro-en>.

44 Conselho Nacional de Justiça, “Justiça em Números,” accessed October 7, 2026, <https://www.cnj.jus.br/pesquisas-judiciarias/justica-em-numeros/>.



Competition. The introduction of PIX itself was a key competitive shock to the Brazilian banking market: it pulled instant payments away from the five large banks that had long dominated and gave smaller banks and payment institutions a level rail. Stablecoins add a parallel, programmable dollar layer that competes in FX and cross-border settlement, the segment PIX does not reach. Competition in the FX leg with programmable money presents opportunities for innovation.

6.2.2. Existing payment landscape

PIX reaches most adults and now supports programmable recurring payments; Open Finance Brasil, a central bank mandated data-sharing and payment-initiation framework, is among the world's most advanced, with tens of millions of active consents and billions of weekly API calls; and Drex has been refocused from a retail CBDC toward a collateral and settlement infrastructure. Stablecoin adoption is high,⁴⁵ dollar-heavy and pro-cyclical. Roughly 90 percent of crypto transaction volume is stablecoins, mostly dollar coins, and declared holdings are predominantly held by legal entities. The stablecoin-to-reais rail already operates: users move reais in and out of dollar coins through domestic providers (Bitso, Mercado Bitcoin, Transfero) and through the Brazilian entities of global platforms (Coinbase, Bybit, OKX and others), with PIX as the instant on-/off-ramp. Real-referenced stablecoins exist (BRLA, BRZ), issued by private firms without an issuer license, and are used mainly for trading pairs, onchain settlement between providers and, increasingly, as the domestic leg of cross-border flows. This infrastructure can serve any corridor in which the counterpart rail is comparably deep, for example Brazil–Mexico via SPEI.

6.2.3. Constraints

The missing issuer regime, classification dispute, and fragmentation across digital payment systems remain Brazil's core structural constraints. Until a statute clearly defines who may issue a stablecoin and under what terms, real-referenced coins remain unbankable claims on unlicensed issuers, foreign dollar coins circulate without direct supervision, and products face classification risk from conflicting regulatory definitions. Absorbing stablecoins into the electronic money framework would eliminate peer-to-peer transfers, self-custody, and foreign dollar coins, mirroring the EU's safe but commercially weak model. Meanwhile, because PIX, Open Finance, the redirected Drex, CVM tokenization rules, and the Central Bank's provider framework operate in silos, cross-system use cases incur substantial coordination overhead to reconcile distinct regulatory, tax, reporting, and tokenization regimes.

6.2.4. Recommendations

- Enact the issuer regime, and choose the category deliberately: define a dedicated legal category rather than absorbing stablecoins into the electronic-money regime;

⁴⁵ Plasma, "Brazil Stablecoin Market," accessed October 7, 2026, <https://www.plasma.org/learn/brazil-stablecoin-market>.

- Provide tax clarity: remove the uncertainty over how stablecoin transfers are taxed and set promoting neutrality with the regulated FX market;
- Aim at B2B and trade finance: importer/exporter settlement, focus on the freelancer and creator economy, and cross-border cash management for small firms.
- Encourage foreign investment into tokenized RWAs: let overseas investors buy Brazilian tokenized assets in stablecoins, through VASPs.

6.3 Indonesia

Indonesia sits between India and Brazil: high and rising adoption, strong and fast-improving payment rails, and a regulatory regime mid-transition. Its commodity-based economy has much to gain from stablecoins.

6.3.1. The opportunity

Remittances. Indonesia receives about \$16 billion a year in remittances, largely from migrant workers in Saudi Arabia, Malaysia, Hong Kong, and Taiwan. A cheaper, faster cross-border rail is an immediate household gain.

Agentic commerce. Indonesia is building the public rails an agentic economy needs: SNAP,⁴⁶ its open-API payment standard evolving toward open finance; QRIS and BI-FAST⁴⁷ for interoperable instant payments; and a new open-commerce network, the Indonesia Open Network (ION),⁴⁸ modeled on India's ONDC. Together these give agentic commerce real potential.

Tokenization and smart contracts. Tokenization is promising but early. The regulatory foundation is only now being laid—the OJK has begun treating “digital financial assets” as a distinct class and published a draft rule⁴⁹ on digital-asset offerings in September 2025 that would require issuers to hold an OJK license, not yet final—and activity is largely proof-of-concept, through accelerators such as Tokenize Indonesia.⁵⁰ Indonesia's institutional obstacle is the cost, not the speed, of enforcement: a commercial dispute resolves in about 403 days, faster than in Brazil or India, but costs roughly 70 percent of the amount at stake, and the country ranks 139th of 190 on enforcing contracts (judicial-quality score 8.9 of 18; World Bank, Doing Business 2020). At that price, litigation makes no sense for small or mid-size deals, leaving the SME and retail layer without a usable enforcement backstop—precisely where self-executing contracts help. Atomic escrow and delivery-

46 Bank Indonesia, “Standard National Open API Pembayaran (SNAP),” accessed October 7, 2026, <https://www.bi.go.id/en/Layanan/standar/snap/default.aspx>.

47 ACI Worldwide, “Inside Real-Time: Indonesia,” accessed October 7, 2026, <https://www.aciworldwide.com/real-time/indonesia>.

48 Ministry of Cooperatives and SMEs, “Indonesia Open Network (ION) is Accelerating Indonesia's Next Generation Digital Public Infrastructure, with Support from Google.org,” July 8, 2026, <https://umkm.go.id/news/yg73l2cdds18p0t4qaxyx31c>.

49 SSEK Law Firm, “Indonesia Issues Draft OJK Regulation on Digital Financial Asset Offerings,” Indonesia Law Blog, November 19, 2025, <https://www.ssek.com/blog/indonesia-issues-draft-ojk-regulation-on-digital-financial-asset-offerings/>.

50 Indonesia Crypto Network, “Tokenize Indonesia Launches to Boost RWA Startups in Indonesia,” accessed October 7, 2026, <https://indonesiacrypto.network/blog/tokenize-indonesia-launches-to-boost-rwa-startups-in-indonesia>.



versus-payment let a commodity trade or a small cross-border deal settle only when both sides perform, which for a commodity economy (palm oil, nickel, agricultural trade finance) could open deals that today are not worth the legal risk.

Competition. Domestic payment systems are becoming more competitive, but cross-border payments and forex markets are not as competitive as we showed earlier in the paper: cross-border remittance cost often exceeds 4% of the transaction amount.

6.3.2. Existing payment landscape

Indonesia has a strong, mostly public set of domestic rails, which is growing fast. The centerpiece is QRIS,⁵¹ the national QR standard linking banks and e-wallets and now connecting to partners across ASEAN, backed by BI-FAST (Bank Indonesia's 24/7 instant transfers at a low flat fee) and SNAP (the national open-API standard). Stablecoins sit in a gray zone: under the Currency Law the rupiah is the sole legal tender, and Bank Indonesia does not permit crypto or stablecoins for payment.⁵² Since January 2025 the OJK regulates them as tradable "digital financial assets," not money. Rupiah-backed coins exist but are used mainly for trading and on-ramp, while most Indonesian crypto users hold dollar coins—an imbalance that channels rupiah savings into U.S. Treasuries. This is a potential reason that Bank Indonesia is floating a state-backed "national stablecoin"⁵³ tied to government bonds.

6.3.3. Constraints

The regulatory framework is still in transition: until stablecoin payments are recognized, the opportunity stays gated, and legal and policy clarity remains at an early stage. And the public infrastructure, though improving, is less mature than India's or Brazil's—open finance in particular—so real technical and integration hurdles remain for agentic commerce and tokenization.

6.3.4. Recommendations

- Authorize regulated stablecoin payments under the OJK, with reserve and audit requirements; a framework for a rupiah-backed coin is a good start.
- Target corridors the public rails miss: pilot cross-border remittances from countries with large migrant populations, with the foreign-currency leg on stablecoins and the domestic leg on BI-FAST or QRIS.
- Cooperate with other ASEAN markets to enshrine stablecoins within intra-ASEAN cooperation to advance cross-border payments efficiencies, complementary to inter-payment system connectivity through the Digital Economy Framework Agreement (DEFA).

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7

Conclusion

Across the three cases the pattern is the same even as the details differ. India has the largest prize; Brazil has the rails and the appetite but unresolved regulation and coordination questions; and Indonesia has the demand and a fast-improving public stack but has not yet permitted stablecoin payments. In each, the binding constraint is policy, not technology—the rails, the demand, and the use cases are already visible, and what remains is a clear framework to put them to work. The gains are large and within reach, and whether an economy captures them turns on the choices its regulators make now.

Those choices matter because stablecoins are not an incremental innovation but a foundational one. Foundational innovations do not merely change the products and services on offer; they reshape the architecture of the financial system itself. By combining the blockchain technology of crypto with the stability of fiat money, they enable faster, cheaper, and programmable payments, opening the door to growth, innovation, and financial inclusion. These gains are especially valuable for EMDEs, where stablecoins can sharply reduce payment, information, and contracting frictions. But they can be realized only with a clear regulatory framework for issuing and using stablecoins. EMDEs that move in that direction will sit at the frontier of global payment markets for decades to come.

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