

Stablecoins and the Rupee: How Digital Dollars Behaved During Pakistan's 2022–23 Currency Crisis

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ABSTRACT

The Pakistani rupee lost more than 40 percent of its value against the US dollar between 2022 and 2023, falling from roughly PKR 178 to over PKR 300 per dollar during a balance-of-payments crisis that left the formal banking system short of dollars (State Bank of Pakistan, 2023). That crisis lined up with a real jump in Pakistan's stablecoin use: dollar-pegged tokens gave households and businesses a low-friction way to hold dollar value outside a banking system that still excludes more than 100 million adults (Global Findex, 2022). This paper looks at how stablecoin markets actually behave during episodes like that one. Using Venezuela and India as comparison cases, it shows that liquidity access, not currency sentiment on its own, drives the stablecoin “premium,” the extra local currency people pay above the official rate to buy a token like USDT. Splitting that premium into a structural baseline that exists even without any stress, plus a stress increment that moves with crises and regulatory shocks, helps explain something odd about Pakistan's own numbers. The rupee has barely moved in the past year (about –1.6 percent against the dollar as of August 2026, per Forex.pk), yet crypto adoption has stayed high. The likelier explanation is that adoption is tracking expected depreciation, shaped by the memory of 2022–23, rather than what the currency is doing right now. Stablecoins aren't risk-free either. Reserve quality, issuer credibility, and the fact that ordinary holders can't redeem directly with the issuer all mean a stablecoin trades one kind of risk for another rather than removing it. Running that logic over Pakistan's two live instruments, the USD1 settlement token and a proposed rupee-linked stablecoin, the strongest case for stablecoins here turns out to be remittances. Even so, the saving looks less like a fee cut for senders and more like relief for a subsidy the state is already paying, since Pakistan's remittance corridors already beat the global average. The paper closes with what regulators would need to get right to capture those gains without recreating the liquidity squeezes seen elsewhere in South Asia.

Keywords: stablecoins; currency depreciation; Pakistan; remittances; financial inclusion; cryptocurrency regulation

INTRODUCTION

Pakistan's rupee lost more than 40 percent of its value against the US dollar between 2022 and 2023, falling from roughly PKR 178 to above PKR 300 per dollar amid a severe balance-of-payments crisis,

Sep 2026
Vol 11. No 6.

depleted foreign reserves, and acute dollar shortages in the formal banking system (State Bank of Pakistan, 2023). That crisis lined up with a real surge in domestic crypto activity. A 2023 KuCoin survey of Pakistani crypto investors found that 33 percent cited the rupee's depreciation as a reason for holding digital assets, and Pakistan's crypto adoption climbed sharply in the years that followed, jumping six places to rank third globally by Chainalysis's 2025 Global Crypto Adoption Index (Chainalysis, 2025; Cointelegraph, 2025). Since then the rupee has settled down. Open-market data show a movement of only about -1.64 percent against the dollar over the twelve months to August 2026, trading in a band between roughly PKR 276.75 and PKR 280.47 (Forex.pk, 2026). Pakistan's adoption ranking has stayed high regardless, sitting third globally, behind only India and the United States (Chainalysis, 2025).

This paper treats the 2022–23 depreciation crisis, not the current stretch of relative calm, as its case study for a broader question: how do stablecoins, cryptocurrencies designed to hold a steady value against a reference currency, actually behave when the local currency they implicitly hedge comes under acute pressure? The fact that adoption has stayed high after the currency stabilized suggests something specific: expected depreciation, shaped by the memory of 2022–23, together with financial exclusion and remittance costs, is doing more of the explanatory work than current-period currency movement alone. The Discussion section returns to this point. The answer matters to three audiences: individual users deciding whether to hold savings in stablecoins, businesses managing cross-border payment exposure, and regulators deciding how to treat a technology already in use at scale within their borders.

BACKGROUND: WHAT IS A STABLECOIN?

A stablecoin is a cryptocurrency engineered to hold a steady value, typically pegged 1:1 to a fiat currency such as the US dollar. Three structural models dominate the market:

- Fiat-backed stablecoins hold reserves of real dollars, cash equivalents, and short-dated government securities roughly matching the number of tokens in circulation. Tether (USDT) and USD Coin (USDC) are the largest examples. Tether's reserves were reported at approximately 69 percent US Treasury bills as of Q1 2025, with the remainder in repurchase agreements and other assets that have at times included bitcoin and gold: volatile holdings that bear directly on the reserve-composition risk discussed later in this paper (Tether Limited, 2025).
- Crypto-backed stablecoins are collateralized by other cryptocurrencies, generally over-collateralized to absorb price volatility in the underlying collateral. DAI is the principal example, though its collateral pool now also includes substantial fiat-backed stablecoins and tokenized real-world assets, which complicates the clean three-model split offered here (MakerDAO, 2025).
- Algorithmic stablecoins hold no hard reserves at all, relying instead on code and market incentives to hold the peg. This is the riskiest model, and it was responsible for the 2022 collapse of TerraUSD.

In weak-currency or capital-restricted economies, stablecoins do more than serve crypto traders. They function as a store of value resistant to local depreciation, a lower-cost channel for cross-border

remittances, and a practical substitute for a dollar-denominated bank account where none is legally or logistically available.

METHODOLOGY

This paper draws on publicly available market data, primary institutional sources, and regulatory statements published through August 2026. Comparative case evidence comes from Venezuela and India, chosen because both offer observable, quantified stablecoin premium data during distinct types of stress: a currency-liquidity crisis in Venezuela's case, a regulatory supply shock in India's. That contrast lets the underlying mechanism be separated from any single triggering event. It also has a limitation, discussed later in this paper: both cases were picked because they showed a premium spike, so the design can't observe a depreciation episode that produced no spike, and can't on its own prove the pattern is general. Pakistan-specific findings draw on open-market exchange rate data, State Bank of Pakistan and Pakistan Virtual Assets Regulatory Authority (PVARA) statements, and reporting on USDT's integration into Pakistan's payments landscape. Since no centralized, published Pakistan-specific USDT premium series exists to compare against Venezuela's or India's, Pakistan-specific premium figures here should be read as directional rather than precisely quantified.

FINDINGS

The Global Pattern: Premiums as a Stress Indicator, and What the Baseline Reveals

Across the cases examined, the stablecoin “premium,” the amount by which the local-currency price of USDT exceeds the official exchange rate, widens under two distinct but related conditions: acute currency stress and constrained stablecoin supply. A baseline premium of roughly 3 to 4 percent persists even absent either condition (see Table 1), and that baseline is itself worth analyzing. It reflects structural costs: capital controls, banking restrictions on crypto rails, on/off-ramp friction, and the compensation peer-to-peer counterparties demand for legal and settlement risk, rather than crisis itself. Because the premium is the sum of this structural floor and a stress increment, only the increment actually moves with events. A regulator who watches the raw level instead of the deviation from a jurisdiction's own baseline risks mistaking a country that's simply made dollar access expensive for one in permanent crisis.

In Venezuela, the USDT premium over the official BCV (Banco Central de Venezuela) rate reached approximately 15.5 percent on Binance P2P markets during June–July 2026, as the central bank's expansion of bolivar liquidity outpaced the dollars available through official channels (CriptoNoticias, July 2026, citing Ecoanalítica data on Binance P2P volumes). Demand wasn't purely speculative. Import-export and retail businesses used USDT to preserve working capital, while individuals used it as an accessible, phone-held store of value.

India saw a comparable premium spike for a different reason. USDT traded at a 7–10 percent premium on major Indian exchanges in mid-2026, above the typical 3–4 percent baseline, after an enforcement action

by India's financial-crime agency tightened stablecoin liquidity across peer-to-peer markets, OTC desks, and exchange order books (CoinDesk, June 30, 2026; AMBCrypto, June 2026). Exchange executives put the premium down to a supply-demand imbalance rather than currency weakness, since the rupee itself wasn't under comparable stress at the time. Once decomposed against the 3–4 percent baseline, the genuine stress increment in the Indian episode comes out to roughly 3 to 6 percentage points, not the full 7 to 10 percent headline figure.

Table 1 summarizes the comparative data, with each figure now labeled correctly by what it measures and over what window.

Market Condition	Measure	Observation Window	Primary Driver
Normal baseline (no stress)	3–4% premium over official rate	Ongoing / cross-market average	Structural: capital controls, on/off-ramp friction, counterparty risk
India (2026)	7–10% premium over official rate ($\approx$ 3–6 pts stress increment above baseline)	Mid-June 2026 spike	Regulatory enforcement action; supply-side liquidity shock
Venezuela (2026)	$\sim$ 15.5% premium over official BCV rate	June–July 2026	Currency-liquidity crisis; dollar access restrictions

Table 1. Comparative USDT premium data, with each row reporting a like-for-like premium over the official rate and its observation window. Sources: CriptoNoticias (July 2026, citing Ecoanalítica); CoinDesk (June 30, 2026); AMBCrypto (June 2026).

Taken together, the comparison suggests the premium works less as a pure measure of currency sentiment and more as a composite indicator of liquidity access. It widens whenever the effective supply of dollar-equivalent tokens fails to keep pace with demand, whether that demand comes from currency-liquidity stress or from regulatory friction restricting supply, as long as the reading is taken as a deviation from each jurisdiction's own baseline rather than a raw level.

Stablecoins Are Not Risk-Free

Despite their design intent, stablecoins aren't immune to loss of value. During a 2023 confidence shock tied to reserve and compliance concerns, USDT traded as low as \$0.985 on some exchanges, a deviation of about 1.5 percent. That falls short of the 2 percent devaluation threshold used in the depeg-probability estimate below, but it's still informative, since it shows the peg moving under stress even without crossing that specific threshold. Academic research on stablecoin depeg frequency backs this up: a 2025 thesis tracking six major stablecoins (USDT, USDC, TUSD, BUSD, DAI, and USTC) from mid-2017 through the end of 2025 identified 85 separate episodes crossing a 2 percent deviation threshold, with fiat-backed coins experiencing frequent but generally mild and quickly-resolved episodes (Morono Moreno, 2025). That frequency is a meaningful risk signal in its own right.

A structural feature makes this risk worse for retail holders. Unlike a bank depositor, an individual stablecoin holder generally can't redeem tokens directly with the issuer. All they can do is sell on the open

market at the prevailing price, which is exactly the mechanism through which a depeg can occur and persist for smaller holders even as large, sophisticated players arbitrage the peg back toward parity.

The practical upshot is that a stablecoin doesn't eliminate currency risk so much as swap it for a different set of risks: issuer solvency, reserve composition and transparency, and market liquidity at the moment of exit. Whether that swapped-in set of risks is actually smaller than the currency risk it replaces isn't obvious, and it depends on the comparison. Eighty-five deviation episodes across six major stablecoins over eight years isn't clearly a smaller risk than the currency risk of holding rupees through a crisis on the scale of 2022–23, and a fair comparison would need to weigh the size of a typical depeg loss against the size of a typical depreciation loss, not just how often each happens.

Pakistan's Emerging Stablecoin Landscape

Pakistan's policy posture toward stablecoins has moved from exploratory talk to active integration over the period leading up to this paper, and two instruments now deserve the same three-part risk test, issuer solvency, reserve composition and transparency, and exit liquidity, already applied above to stablecoins in general.

USD1 is a dollar-referenced stablecoin issued by World Liberty Financial Inc., a US-registered DeFi company incorporated in Delaware in 2024, and it's been positioned in Pakistan as a settlement tool for international payments (HokaNews, January 2026). Reserve assets, reported as cash, short-term US Treasuries, and other cash-equivalent instruments, are held by BitGo Trust Company, which also handles minting, redemption, and reconciliation, keeping issuance and custody structurally separate. BitGo publishes reserve attestations monthly (BitGo, 2026). As of the most recent public reporting, though, no independent third-party auditor for these attestations has been named, which is a noticeably thinner disclosure regime than Tether's, even accounting for Tether's own reserve-composition caveats noted earlier (CoinDesk, 2026). World Liberty Financial's governance and financial structure runs partly through DT Marks DEFI LLC, an entity associated with the Trump family (CoinDesk, 2026). None of this settles whether USD1 is safe to hold, but it's worth naming these facts rather than describing USD1 only as “fully dollar-reserve-backed.”

Separately, the State Bank of Pakistan is developing a central bank digital currency (CBDC) prototype with technical assistance from the IMF and World Bank, and PVARA Chairman Bilal Bin Saqib said in December 2025 that Pakistan would “definitely launch” its own stablecoin, partly framed as a way to collateralize government debt (The News, December 5, 2025; The Block, 2026). That instrument runs into a problem this paper otherwise lays out: a rupee-linked token doesn't hedge rupee depreciation. It's a more efficient rupee, not a substitute for dollar exposure, and it doesn't touch the dollar demand this paper spends several sections describing. The debt-collateralization angle makes this worse. If the token's reserves are Pakistani government debt, its stability depends on the solvency of the issuer of the very currency it's denominated in, which is circular, and holders would be picking up sovereign credit risk in exchange for payment convenience rather than getting a hedge at all. Whether that circularity is deliberate or an unintended side effect of the collateralization choice isn't publicly clear yet, and should be confirmed with PVARA before the paper treats it as settled.

Nigeria's eNaira is the most relevant comparison for Pakistan's CBDC prototype, and it belongs here as a cautionary case, not as an example of a regulator successfully capturing stablecoin-style efficiency gains. The eNaira is a central bank digital currency, not a stablecoin, and it hasn't reached meaningful adoption despite substantial official promotion (IMF, 2023).

Officials have been clear that stablecoins aren't meant to replace the rupee or serve as legal tender for domestic pricing. The emerging model is hybrid: the rupee stays for domestic transactions, dollar-referenced instruments handle cross-border settlement, and none of it is a step toward dollarization.

The Remittance Case

The strongest economic argument for stablecoin adoption in Pakistan is remittance-cost reduction, but it's a stronger and different argument once it's built on Pakistan's own corridor data instead of a global average. A 6–7 percent fee range is close to the World Bank's global average of 6.36 percent, but it isn't Pakistan's figure. In the World Bank's Remittance Prices Worldwide series, South Asia is consistently the cheapest receiving region in the world, at 4.80 percent in Q1 2025 and 5.30 percent in Q3 2025 (World Bank, Remittance Prices Worldwide, 2025), and Pakistan's largest single corridor, Saudi Arabia to Pakistan, has been recorded at around 2.1 percent, with periodic zero-fee promotions on top of that (World Bank, Remittance Prices Worldwide, 2025). On its main corridors, Pakistan already meets the UN Sustainable Development Goal target of 3 percent.

Using these numbers: Pakistan's record \$38.3 billion in FY2024–25 remittance inflows (State Bank of Pakistan, 2025), a realistic Pakistani weighted-average fee of roughly 2–3 percent, and a post-adoption stablecoin-settlement fee under 1 percent together yield an estimated saving of approximately \$400–750 million a year, a serious number, but well below what the global-average fee would imply.

A stronger version of this argument follows from the smaller number itself. Pakistan's remittance costs are already low partly because the state actively buys them down, through the Pakistan Remittance Initiative, preferential exchange rates for formal channels, and subsidized or zero-fee corridors meant to pull flows away from informal hawala networks. The cost hasn't been eliminated so much as shifted onto the public balance sheet. A credible stablecoin settlement rail would more likely reduce a fiscal subsidy the state is already paying than cut a fee borne directly by remittance senders, a claim about public finance that's testable against the subsidy's budget line, and honestly a more distinctive reason for why Pakistan in particular has a stake in this technology than the household-fee framing offers.

DISCUSSION

Four things follow from these findings. First, stablecoin demand in Pakistan, like in Venezuela and India, is best explained as a response to the joint absence of currency stability and formal dollar access, but for Pakistan specifically, that response now looks driven more by the memory of the 2022–23 crisis, plus financial exclusion and remittance costs, than by what the currency is doing right now, since the rupee itself has held steady for about two years. That's a claim about expected rather than realized depreciation, and it fits the evidence gathered here better than taking the original premise at face value would.

Sep 2026

Vol 11. No 6.

Second, the USDT premium, where it's observable, works as a useful real-time proxy for liquidity stress that regulators and analysts can track independently of official exchange-rate data, but only as a deviation from a jurisdiction's own baseline, not as a raw level. Pakistan currently has neither a centralized, published premium series like India's or Venezuela's, nor an estimate of its own baseline, and without the second, a published series would be hard for regulators or the public to actually read.

Third, the depeg risk laid out above means any Pakistani policy encouraging stablecoin adoption for financial inclusion should come paired with consumer-facing disclosure about reserve composition and redemption mechanics. The population most likely to adopt stablecoins for inclusion reasons, the unbanked and underbanked, is also the population least equipped to arbitrage a depeg event if one happens.

Fourth, the case for stablecoins partly rests on the claim that no adequate substitute exists for dollar access or low-cost domestic transfer in Pakistan, and that claim needs testing against what already exists. The Roshan Digital Account gives non-resident Pakistanis foreign-currency accounts and has pulled in billions of dollars; Raast, the State Bank's instant payment system, and licensed mobile-money providers handle domestic transfer cheaply and have grown substantially (State Bank of Pakistan, 2025). If stablecoins are still the better answer for whatever gaps remain, the recommendations below should say specifically what these existing tools don't reach, plausibly informal-sector users without documentation for a Roshan Digital Account, and cross-border settlement rather than domestic transfer, instead of proposing new architecture as if the field were empty.

POLICY RECOMMENDATIONS

- Publish a domestic USDT/PKR premium series, drawing on peer-to-peer and exchange data, to give regulators and the public a real-time liquidity-stress indicator like the ones available in India and Venezuela. Pair it with an estimate of Pakistan's own structural baseline premium, built from P2P and exchange data during a period of relative currency stability (the twelve months to August 2026 discussed above would work), so a published reading gets read as a deviation from baseline rather than an alarming number on its own.
- Require reserve-composition and redemption-mechanism disclosure, including a named independent auditor, for any stablecoin integrated into regulated payment rails. This is a standard USD1 doesn't fully meet yet, and it matters because retail users can't redeem directly with issuers.
- Calibrate compliance requirements to avoid India-style supply shocks, while recognizing the tension this creates with the first recommendation: a published premium series that then widens after enforcement action becomes a visible, official signal of stress, which could itself speed up the flight it's measuring. This paper comes down in favor of publishing anyway, on balance, provided the baseline-adjustment step above is in place, but regulators should treat the trade-off as a live design question rather than something settled.

- Prioritize the remittance corridor as the near-term use case, but frame the benefit accurately: the near-term saving is more plausibly a cut to the fiscal cost of Pakistan's existing remittance subsidies (the Pakistan Remittance Initiative and related preferential-rate programs) than a direct fee saving to senders, since Pakistan's main corridors already price near or below the UN SDG target.
- Keep the hybrid model, rupee for domestic pricing, dollar-referenced instruments for cross-border settlement, and specifically, for any rupee-linked stablecoin, avoid collateralizing it with government debt, since that would make the token's stability depend on the solvency of the same sovereign whose currency risk it's supposed to help manage.
- Before proposing new stablecoin-based inclusion architecture, document specifically what gaps remain in existing instruments, the Roshan Digital Account, Raast, and licensed mobile money, so recommendations target the actual shortfall instead of assuming none of these tools exist.

LIMITATIONS

This paper draws on publicly available market data, industry and financial press reporting, and regulatory statements, rather than primary data the author collected or verified directly, and no Pakistan-specific USDT premium series exists to draw on, so Pakistan-specific premium claims here stay directional. The comparative design picks Venezuela and India because each showed a premium spike, which is a form of selection on the dependent variable: a design that only looks at episodes where the premium widened can't observe a depreciation or supply shock that produced no widening, so it can't, on its own, prove the widening pattern is general rather than specific to these two cases. Relatedly, Pakistan itself contributes no direct premium observations to this paper's evidence base, so the Pakistan discussion throughout applies a mechanism documented elsewhere rather than reporting a finding drawn from Pakistani data. Finally, as the Discussion notes, existing instruments, the Roshan Digital Account, Raast, and licensed mobile money, haven't been systematically compared against stablecoins on cost or reach here, so the policy recommendations above should be read as provisional until that comparison happens.

CONCLUSION

Stablecoins behave, in practice, as a liquidity-sensitive hedge rather than a risk-free one. Their premiums widen under both currency stress and regulatory friction relative to a jurisdiction's own baseline, and their peg, while generally reliable, isn't guaranteed, a distinction that matters most for the unbanked populations most likely to lean on them as an informal substitute for banking infrastructure. Pakistan's own currency has held comparatively steady for about two years, but its high, sustained crypto adoption reads better as a legacy of the 2022–23 depreciation crisis, compounded by financial exclusion and remittance costs, than as a response to what the currency is doing now. For Pakistan, where a severe recent depreciation episode and comparatively low remittance costs coincide with one of the world's highest rates of crypto adoption, the real policy question isn't whether to engage with stablecoins, that's already happening at scale, but how to regulate them, and how to name their risks honestly, in a way that

keeps their inclusion and remittance benefits without recreating the liquidity squeezes and consumer-protection gaps seen elsewhere in the region.

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