

CRX: On-Chain FX Hedging

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Abstract

CRX enables institutional-grade FX hedging on-chain, removing the banking overhead embedded in the current cost of trading. A smart contract holds pre-funded margin, marks positions to market, and settles trades against institutional benchmarks. CRX launches in emerging markets.

1. Introduction

1.1 The Market

Non-deliverable forwards are the primary instrument for managing emerging-market currency risk. An NDF locks in a future exchange rate, settling the difference between the locked rate and the market rate in cash at expiry. Estimated daily NDF volume is \$300 to \$340 billion (BIS, April 2025).

Pricing in the NDF market is structurally expensive. Participants pay 50 to 300 basis points or more to hedge through traditional banking channels. That spread reflects the cost of the bank-intermediated model. Trades flow through correspondent banking chains, where each link adds credit, capital, and operational cost to the spread. The model is designed around legacy banking infrastructure.

1.2 The Landscape

Today, FX activity flows through three channels: institutional FX venues, stablecoin spot rails, and FX perpetuals. Forward-dated FX hedging products do not exist outside the bank-intermediated system.

Institutional FX venues. CME, EBS Markets, 24 Exchange, and bank dealer platforms offer forward-dated contracts against institutional benchmarks. Access requires a combination of

FCM relationships, ISDA documentation, counterparty credit lines, and prime brokerage arrangements.

Stablecoin spot rails. OpenFX, Circle StableFX, Mento, and similar infrastructure use stablecoins to facilitate cheaper and faster spot transactions. They do not create contracts to manage forward-dated FX exposure.

FX perpetuals. Hyperliquid, Ostium, and similar perp DEXs offer on-chain perpetuals on G10 pairs. Perps have no expiry and mark continuously against an index. That structure serves speculators on major pairs, not institutional hedging workflows.

1.3 Why Now

Supply and demand for on-chain FX hedging have recently emerged:

Supply. FX market making has historically lived in institutional firms. Crypto-native market makers now have FX capabilities.

Demand. Stablecoin adoption is accelerating. Roughly two-thirds of global stablecoin supply is held outside the US. The businesses driving that adoption carry significant FX exposure with no efficient way to hedge.

1.4 The Entry Point

Stablecoin-native companies in emerging markets are the most underserved. These include payment platforms holding EM currency inventory, their cross-border payments customers, and lenders with EM-denominated balance sheets. They carry significant FX risk, but access to hedging is gated behind minimum trade sizes, bilateral credit relationships, and documentation requirements. CRX launches with on-chain NDFs in emerging markets.

2. CRX Architecture

The architecture has three components: an off-chain execution engine that matches takers to makers, a smart contract that manages collateral and settles trades, and oracles that bring benchmark rates on-chain.

2.1 Execution Engine

The execution engine sits off-chain to meet institutional latency requirements.

Quote Routing. A taker submits an RFQ specifying a currency pair, tenor, notional, and direction. Makers return firm, signed quotes on the full notional, each valid for a specified window. CRX selects the best maker quote and offers it to the taker as principal counterparty. The taker signs to confirm or lets the quote expire.

Trade Recording. On taker acceptance, the execution engine binds the trade with CRX as principal counterparty. CRX submits both signed agreements to the smart contract from its operator wallet.

2.2 Smart Contract

The smart contract performs functions banks traditionally handle. It is publicly auditable, deterministic, and free of legacy banking infrastructure.

Collateral Custody. On receiving the signed trade agreements, the smart contract validates the signatures. Initial margin is pulled from both counterparties' wallets and held by the smart contract in a USD-backed stablecoin until settlement.

Margin Enforcement. Initial margin is calibrated per pair using historical volatility data and a stress buffer anchored to five-year worst-case single-day moves. A maintenance level sits below initial margin, giving positions room to absorb normal mark-to-market fluctuations before a margin call is triggered. Mark-to-market runs continuously against Pyth Network's price feed for the pair. If a position's margin falls below the maintenance level, the smart contract emits an on-chain margin call. The counterparty has a fixed response window to add margin; failure to respond results

in liquidation.

Default Handling. When a counterparty fails to meet a margin call, the smart contract automatically registers a default. The defaulter's remaining collateral is forfeited, and CRX assumes the position, posting additional margin from an insurance layer. CRX immediately opens an offsetting hedge with another maker through the standard RFQ flow. The non-defaulting counterparty's contract is preserved.

Benchmark Validation. At expiry, the smart contract validates the oracle-submitted fixing against Pyth Network's price feed within a per-pair tolerance. Submissions outside tolerance are rejected, triggering a pre-defined fallback procedure.

Atomic Settlement. Once the validated fixing is accepted, the smart contract computes the payout from the stored contract parameters. The smart contract transfers the payout to the winning counterparty and returns remaining margin to both parties. The transaction either completes atomically or reverts entirely.

2.3 Settlement Source

The settlement source for each pair is the same fixing specified by the Emerging Markets Traders Association (EMTA), the standard for institutional emerging-market FX hedging. Two oracles, each running on independent infrastructure, retrieve the fixing at expiry and submit the value on-chain.

3. Use Cases

Operational hedging. Stablecoin-native companies with direct EM FX exposure hedge their own balance sheets through CRX. A remittance company holding a multi-currency working capital position across NGN, KES, and ZAR can lock forward rates against USD through CRX, sized and dated to match its operational flow.

Platform distribution. Stablecoin payment platforms serve businesses making cross-border payments across EM corridors. CRX allows them to offer hedging products embedded in their existing customer interface. A Brazilian importer with a

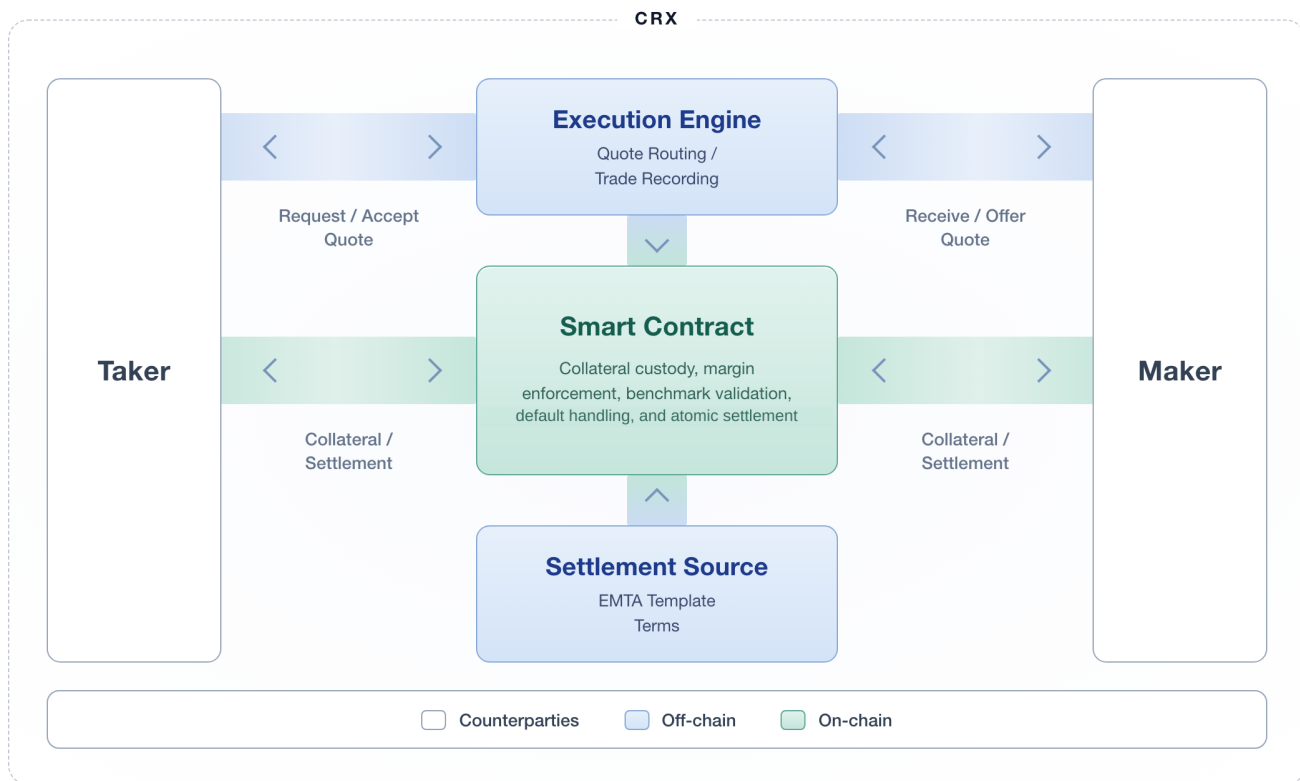


Figure 1: The architecture of CRX.

30-day USD payable can lock the BRL cost of that payment through their existing payment platform.

Automated hedging. Corporate treasury automation tools detect FX exposure as it is created across operational flows and programmatically route hedge execution to CRX. A U.S. company with Indian operations creating a rupee-denominated payable can have its treasury platform trigger a hedge through CRX for USD/INR at the matching tenor, with no human intervention.

4. Roadmap

Portfolio margining. Initial margin at launch is calculated per position. Subsequent phases introduce portfolio margining, where margin is computed across all open positions to improve capital efficiency.

Yield-bearing collateral. Initial margin at launch is held in a USD-backed stablecoin. Subsequent

phases introduce additional collateral options, including yield-bearing tokens. Each new collateral type is individually audited before being added.

5. Regulatory Approach

CRX is the principal counterparty to eligible contract participants (ECPs), operating below the CFTC's swap dealer *de minimis* threshold. Swap dealer registration is planned when aggregate gross notional volume crosses \$8 billion over a rolling 12-month period. Regulatory strategy is led by Orrick's Dan Ullman, formerly with the CFTC.

6. Conclusion

As stablecoin adoption accelerates, demand for on-chain derivatives hedging grows with it. CRX brings institutional-grade products on-chain. Trading that previously required bank intermediation is moving to open infrastructure.