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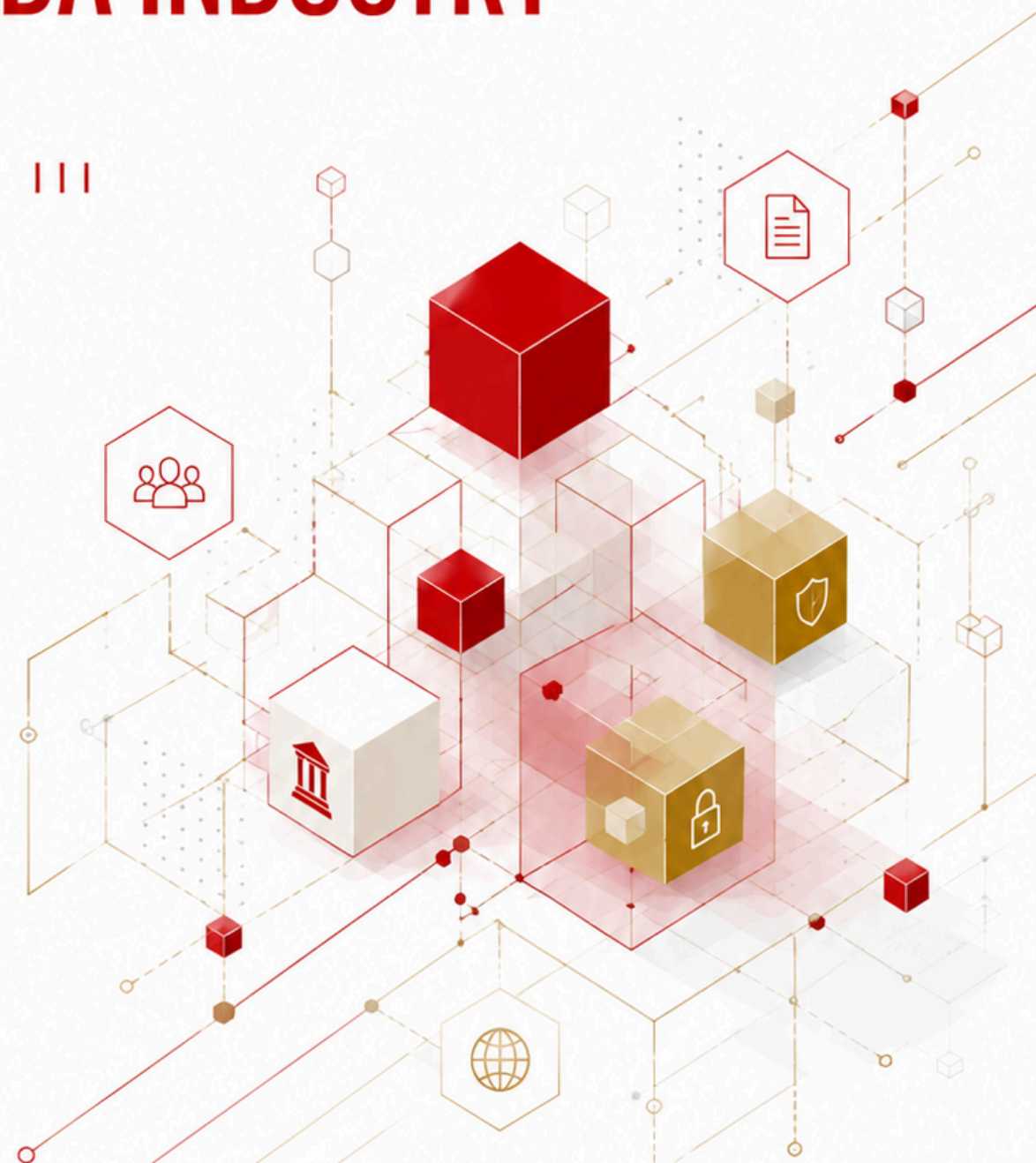
FUNDAMENTALS AND GUIDING PRINCIPLES OF THE VDA INDUSTRY

VOLUME III



JUNE 2026

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CHAPTER A

Introduction to the Evolving VDA Landscape

1. Macro-Shifts and the Drive Toward Global Consensus

The global Virtual Digital Asset (VDA) ecosystem has experienced a profound metamorphosis since 2023. Previously characterised by regulatory ambiguity and disparate national policies, the landscape has decisively shifted toward structured legal recognition and comprehensive oversight. This paradigm shift was largely catalyzed by several factors: the catastrophic collapse of major industry players (most notably the FTX exchange, which exposed the severe vulnerabilities of unregulated offshore platforms)[1], the dangers of commingling user funds, and the lack of robust cybersecurity controls.

During its G20 presidency in 2023, India played a pivotal role in shaping the international response to these vulnerabilities. The presidency culminated in the "Delhi Declaration",[2] which welcomed the IMF-FSB Synthesis Paper's risk-based framework for crypto-asset regulations anchored in the principle of "same activity, same risk, same regulation"[3]. Indian officials championed the reality that the borderless nature of crypto-assets renders isolated regulatory attempts ineffective, advocating instead for a globally coordinated architecture to safeguard macroeconomic stability while preserving technological innovation.

2. Regulatory Evolution and Present Status in India

Domestically, India's approach to VDAs has evolved significantly over the past decade[4]. The regulatory journey began with cautionary warnings and a 2018 banking ban imposed by the Reserve Bank of India (RBI), which was later quashed by the Supreme Court in 2020[5]. Rather

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[1] Conlon, T., Corbet, S., & Hu, Y. (2023). The collapse of the FTX exchange: The end of cryptocurrency's age of innocence. *The British Accounting Review*, 101277.https://www.sciencedirect.com/science/article/abs/pii/S0890838923001348

[2] International Monetary Fund & Financial Stability Board. (2023). IMF-FSB Synthesis Paper: Policies for Crypto-Assets https://www.fsb.org/uploads/R070923-1.pdf

[3] Gujarat National Law University. (2026, March). Crypto assets in India: Assessing the case for regulation (Abridged version). GNLU. https://gnlu.ac.in//Content/gnlu/pdf/odrd/Abridged%20Version_Report_Crypto%20Assets%20Project.pdf

[4]Namaste Web3. (2023). Fundamental and Guiding Principles of the VDA Industry Vol I.&Vol II.

[5]Gujarat National Law University. (2026, March). Crypto assets in India: Assessing the case for regulation (Abridged version). GNLU. https://gnlu.ac.in//Content/gnlu/pdf/odrd/Abridged%20Version_Report_Crypto%20Assets%20Project.pdf

than enacting a comprehensive VDA statute, the government shifted to a deterrence and monitoring strategy. In 2022, a 30% flat tax on VDA income and a 1% Tax Deducted at Source (TDS) on transactions were introduced. By 2023, VDA Service Providers (VDASPs) were brought under the Prevention of Money Laundering Act (PMLA), obligating them to implement strict Know Your Customer (KYC) protocols and register as Reporting Entities with the Financial Intelligence Unit-India (FIU-IND)[6].

Recently, India has taken steps to transition from mere deterrence to rigorous compliance by aligning with the OECD's Crypto-Asset Reporting Framework (CARF). The newly introduced I-T Rules 2026 operationalise CARF under Section 509(1) of the Income-tax Act, 2025, defining strict, user-level reporting obligations for VDASPs[7]. Set to be fully implemented by April 1, 2027, these rules mandate that exchanges systematically report transaction data to tax authorities, running parallel to FIU-IND's AML reporting. Furthermore, India's financial reporting framework has been formally expanded to explicitly include crypto-assets, Central Bank Digital Currencies (CBDCs), and e-money as "financial assets," establishing a stringent compliance baseline designed to eliminate disclosure asymmetries and combat cross-border tax evasion[8].

3. The Push for CBDCs and India's e-Rupee Pilots

In sharp contrast to its cautious and restrictive posture toward private, decentralised VDAs, the RBI is actively advancing its state-backed digital currency, the CBDC. Driven by the objective of mitigating the "cryptoization" of the economy and reducing reliance on dollar-pegged stablecoins, India is currently running robust pilot programs for both the wholesale and retail segments of the e-Rupee[9].

The wholesale e-Rupee pilot is strategically designed to ensure settlement finality and mitigate interbank settlement risks without requiring a central counterparty, with the RBI exploring its use in tokenized asset settlements through the Unified Markets Interface (UMI)[10]. Concurrently,

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[6] Ibid.

[7] Candour Legal. (2026). Section 509 Crypto Reporting from April 2026 and India's Path to the OECD CARF in 2027.https://candourlegal.com/section-509-crypto-reporting-india-carf-2027/

[8] Central Board of Direct Taxes. (2026, March 20). Income-tax Rules, 2026 (Notification No. 22/2026 [F. No. 370142/41/2025-TPL] / G.S.R. 198(E)). Ministry of Finance, Government of India https://www.incometaxindia.gov.in/documents/d/guest/en-notified-it-rules-2026-20-03-2026-pdf

[9] Godbole, O. (2026, January 19). India's central bank proposes a plan to create digital-currency link among BRICS nations (S. Reback, Ed.). CoinDesk. https://www.coindesk.com/markets/2026/01/19/india-s-central-bank-proposes-a-plan-to-create-digital-currency-link-among-brics-nations

[10] Reserve Bank of India. (2026, May 29). Financial markets and foreign exchange management. In Annual Report 2025-26. https://rbi.org.in/scripts/AnnualReportPublications.aspx?Id=1465

the retail e-Rupee pilot has expanded to encompass millions of users across participating banks. The RBI is aggressively exploring advanced design features, most notably offline functionality to maintain a cash-like experience in regions with limited internet connectivity, and programmable payments[11]. Programmability is currently being tested to deliver highly targeted subsidies, such as digital food coupons in Gujarat and fuel allowances in Andhra Pradesh, seamlessly integrating with India's existing Digital Public Infrastructure (DPI)[12].

4. Global Legislative Strides

Internationally, the era of consultative policy is giving way to enacted law. In the aftermath of the FTX collapse and recent volatility events, global regulators have increasingly accepted the multifunctional nature of crypto intermediaries, recognizing their growing influence and the absolute necessity for enforceable guardrails[13].

The European Union has set a global benchmark with the full implementation of the Markets in Crypto-Assets Regulation (MiCA) in December 2024. MiCA harmonises rules across member states, requiring authorization for Crypto-Asset Service Providers (CASPs) and imposing stringent reserve requirements on stablecoin issuers[14]. At the time of publication, the European Commission has opened consultations for MiCA 2.0, which will entail a review of the implementation of MiCA[15].

The United States has made perhaps the greatest strides in regulating its virtual digital asset sector. Since the re-election of President Donald Trump in 2025, policy pertaining to crypto-assets pivoted from "regulation by enforcement" to statutory clarity[16]. This is

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[11] Reserve Bank of India. (2026, April 29). Digital Rupee (e₹) – FAQs. https://www.rbi.org.in/commonman/english/scripts/FAQs.aspx?Id=3686

[12] Press Information Bureau. (2026, February 15). Government of India launches CBDC-based Digital Food Coupon Pilot in Gujarat (Release ID: 2228470) [Press release]. Ministry of Information and Broadcasting, Government of India. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2228470

[13] Ocampo, D. G., Goodrich, P., & Lovicu, G.-P. (2026, April). Cryptoasset service providers as financial intermediaries: Risks and policy approaches (FSI Occasional Paper No. 27). Bank for International Settlements, Financial Stability Institute. https://www.bis.org/fsi/fsipapers27.pdf

[14] European Securities and Markets Authority, Markets in Crypto-Assets Regulation (MiCA) (ESMA, updated 12 March 2026) https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/markets-crypto-assets-regulation-mica.

[15] European Commission.(2026). Targeted consultation on the review of MiCA Regulation.https://finance.ec.europa.eu/document/download/62be7015-f066-4fac-b74e-71bacdbcc9f5_en?filename=2026-mica-review-targeted-consultation-document_en.pdf

[16]Adrien K. Anderson et al., Clarifying the CLARITY Act: What To Know About the House Crypto Market Structure Bill and Its Path to Law, Arnold & Porter: Perspectives (Aug. 26, 2025), https://www.arnoldporter.com/en/perspectives/advisories/2025/08/clarifying-the-clarity-act.

particularly highlighted by the passage of landmark legislation like the The Guiding and Establishing National Innovation for US Stablecoins (GENIUS) Act of 2025 and the incoming Digital Asset Market Clarity (CLARITY) Act. The GENIUS Act, a bipartisan legislation, establishes a federal framework for payment stablecoins, mandating 1:1 reserve backing in highly liquid assets and certified audits, effectively reframing them as regulated payment liabilities[17].

The companion CLARITY Act addresses the broader digital asset market by introducing a statutory classification framework anchored in the degree of decentralisation of an asset's underlying network[18]. Fully decentralised assets are designated as digital commodities under CFTC jurisdiction, while assets tied to ongoing centralized managerial efforts remain within the SEC's purview as investment contracts - directly resolving the jurisdictional overlap that had long impeded market development.

The pace of institutionalisation is equally notable beyond advanced economies. Kenya enacted its Virtual Asset Service Providers Act in October 2025, and Brazil has advanced one of Latin America's most comprehensive VASP authorisation frameworks[19]. In the Middle East, the UAE has solidified its position as a global hub by establishing the Virtual Assets Regulatory Authority (VARA) in Dubai, the world's first bespoke digital asset regulator[20]. Regional peers and competitors are also moving rapidly to institutionalise crypto assets; Pakistan, for instance, has replaced its previous trading ban with a comprehensive regulatory regime, establishing a Pakistan Virtual Assets Regulatory Authority (PVARA) for licensing and supervision[21].

Across the Asia-Pacific as well, Singapore and Hong Kong have enacted dedicated licensing frameworks for VDA service providers and stablecoin issuers, and Australia legislated mandatory licensing for digital asset platforms in 2026[22].

These developments, and those of several other jurisdictions, are elaborated upon in Chapter D.

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[17] Guiding and Establishing National Innovation U.S. Stablecoins Act or GENIUS Act, No. Public Law No: 119-27, July 18, 2025 (U.S.), https://www.congress.gov/bill/119th-congress/senate-bill/1582/text

[18] Summary: H.R.4763 — 118th Congress (2023-2024) https://www.congress.gov/bill/118th-congress/house-bill/4763

[19] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

[20] Ibid.

[21] Ministry of Law and Justice. (1860). Pakistan Penal Code (Act XLV of 1860). The Pakistan Code. https://pakistancode.gov.pk/english/UY2FqaJw1-apaUY2Fqa-apaUY2Npa5tpZw%3D%3D-sg-jjjjjjjjjjjj

[22] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

5. Leading Global Adoption

Paradoxically, despite the absence of a comprehensive domestic VDA statute and the presence of a highly restrictive tax regime, India continues to be the undisputed global leader in grassroots crypto asset adoption. According to the Chainalysis 2025 Global Adoption Index, India ranks first globally across multiple key metrics, including retail centralised service value received and DeFi value received[23].

This massive domestic engagement has catalysed broader regional growth, driving the Asia-Pacific (APAC) region to become the fastest-growing market worldwide for on-chain crypto activity. In the 12 months ending June 2025, APAC saw a staggering 69% year-over-year increase in value received, with total transaction volumes surging to $2.36 trillion[24]. India's robust developer talent, thriving Web3 startup ecosystem, and high digital penetration have sustained this momentum even amid domestic policy friction.

While global adoption has accelerated, the pace and coherence of regulatory responses have varied significantly across jurisdictions. The absence of an overarching virtual digital assets statute in India has created an imperative to evolve a balanced response to questions surrounding innovation, investor protection, and financial stability. The following chapter examines India's evolving regulatory journey and the implications of its current policy architecture.

[23] Chainalysis. (2025). 2025 Global Adoption Index
https://www.chainalysis.com/blog/2025-global-crypto-adoption-index/
[24] Chainalysis.(2025). 'The 2025 Geography of Crypto Report'
https://www.chainalysis.com/reports/2025-geo-crypto-report/

CHAPTER B

Evolving Taxation and Enforcement Frameworks in India

1. The Offshore Shift and the Amplified Compliance Gap

The introduction of a rigorous taxation framework for VDAs in India was structurally designed to bring transparency and accountability to a rapidly expanding digital economy. Yet, empirical evidence from the past four years demonstrates that this restrictive regime has inadvertently triggered a massive migration of domestic liquidity to unregulated offshore jurisdictions. Current market data indicates that these tax policies have driven approximately 90% of Indian VDA trading volume to offshore platforms[25].

Because these overseas platforms generally do not comply with India's TDS norms, this capital flight has compounded both the revenue loss and the supervisory blind spots that the framework was designed to prevent. This also severely amplifies national security and anti-money laundering (AML) risks. By bypassing the FIU-IND's oversight perimeter, non-compliant offshore platforms create significant blind spots for authorities attempting to track money laundering and terror financing flows, effectively defeating the primary monitoring and traceability objectives the tax was initially meant to achieve.

2. A Disrupted Level-Playing Field for Domestic VASPs

The current regulatory and taxation architecture has created a skewed market environment that inadvertently penalizes domestic compliance. Domestic FIU-registered exchanges absorb immense financial and operational costs associated with strict KYC protocols, localized data storage, and the mandatory deduction of the 1% TDS. Conversely, unregistered offshore exchanges engage in regulatory arbitrage, offering Indian users a frictionless, "zero-TDS" trading experience[26].

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[25] TIOL Knowledge Foundation. (2025). Taxation of digital assets in India: A data-driven assessment of India's VDA tax regime and it's market impact. https://admin.taxindiaonline.com/UploadedFiles/PDFBlob/Taxation%20of%20Digital%20Assets%20in%20India.pdf

[26] Ministry of Finance. (2025, December 8). Taxation of crypto-currency in the country (Lok Sabha Unstarred Question No. 1194). Department of Revenue, Government of India. https://sansad.in/getFile/loksabhaquestions/annex/186/AU1194_U0Gywe.pdf?source=pqals

As a direct consequence of this disparity, compliant domestic exchanges now facilitate less than 10% of India's total crypto volume, amounting to roughly ₹45,000 crores in FY 2024-2025, despite the country possessing one of the largest grassroots crypto user bases globally[27]. The scale of offshore migration and the resulting shortfall in tax collection have been substantial, estimated to have resulted in ₹11,000 crore in uncollected TDS since July 2022[28]. This sheds lights on the unintended consequences of a tax regime that increased compliance costs while encouraging activity to shift towards jurisdictions beyond the effective reach of Indian regulators

Furthermore, domestic platforms continue to face persistent operational friction, particularly concerning restricted access to banking rails and the Unified Payments Interface (UPI)[29]. While non-compliant offshore platforms easily facilitate peer-to-peer (P2P) fiat onboarding through informal channels, legitimate domestic VASPs struggle to secure stable banking services, compounding their competitive disadvantage and stifling domestic Web3 innovation.

3. Tightened Oversight and Aggressive FIU-IND Enforcement

Recognising the escalating risks posed by this regulatory vacuum, the Indian government has aggressively transitioned from a purely advisory stance to a rigid enforcement regime. The FIU-IND is rapidly tightening its regulatory perimeter to bring more entities under its supervisory umbrella. As of March 30, 2026, the number of registered Reporting Entities (REs) has grown to 54, up from 47 at the end of 2024[30].

This expansion in registered entities is accompanied by stringent new compliance mandates aimed at eliminating systemic vulnerabilities. On January 8, 2026, the FIU-IND issued revised directives that heavily increased the AML and Counter-Financing of Terrorism (CFT) obligations for crypto exchanges. To combat the rising threat of mule accounts, exchanges must now implement mandatory liveness detection (such as a selfie with randomised physical gestures) and capture geographical tracking data, including latitude, longitude, and IP

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[27] TIOL Knowledge Foundation. (2025). Taxation of digital assets in India: A data-driven assessment of India's VDA tax regime and it's market impact. https://admin.taxindiaonline.com/UploadedFiles/PDFBlob/Taxation%20of%20Digital%20Assets%20in%20India.pdf

[28] Ibid.

[29] CoinDCX (2024) India Web3 Landscape Report 2024 https://coindcx.com/wp-content/uploads/2025/03/India-Web3-Landscape-Report-2024_v5.pdf

[30] Lok Sabha Secretariat. (2025). Unstarred Question No. 1194. Digital Sansad Portal. https://sansad.in/getFile/loksabhaquestions/annex/187/AU5805_lMTYNK.pdf?source=pqals

addresses, during the onboarding process[31]. Any mismatch between a user's declared address and their geo-location now triggers enhanced due diligence.

Furthermore, law enforcement oversight is extending beyond financial regulators into specialized cyber-enforcement. VDAs have now been formally integrated into the Indian Cyber Crime Coordination Centre (I4C) Standard Operating Procedures[32]. This integration establishes strict, unified guidelines for law enforcement and financial intermediaries regarding the tracing, freezing, and handling of reported or disputed VDA-linked funds, significantly enhancing the state's capacity to disrupt cyber-enabled financial crimes.

4. Section 509, I-T Rules 2026, and India's Alignment with the OECD CARF

India's VDA enforcement landscape has been fundamentally transformed through two interlocking reporting mandates. Under Section 509(1) of the Income-tax Act, 2025, VDA Service Providers must furnish user-level transaction data directly to the Income Tax Department from April 1, 2026[33]. Another March 2026 CBDT amendment formally classifies crypto-assets, CBDCs, and e-money as financial assets under Foreign Account Tax Compliance Act (FATCA) and the Common Reporting Standard (CRS), aligning India with the OECD's Crypto-Asset Reporting Framework effective January 1, 2026[34]. Together with existing AML/CFT obligations to the FIU-IND, this dual-reporting ecosystem attempts evasion increasingly untenable: any discrepancy between exchange-reported data and a taxpayer's Schedule VDA declaration now serves as a direct audit trigger.

Looking ahead, as the global CARF network activates in 2027, the Indian government will automatically receive annual data feeds from peer jurisdictions regarding Indian residents' offshore crypto holdings[35]. For VDASPs[36], this entails capturing and transmitting the account

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[31]Financial Intelligence Unit – India. (2026, January 8). AML & CFT guidelines for reporting entities providing services related to virtual digital assets (VDAs). Ministry of Finance, Government of India. https://fiuindia.gov.in/pdfs/downloads/VDA08012026.pdf

[32]Indian Cybercrime Coordination Centre (I4C). (2026). STANDARD OPERATING PROCEDURE For (NCRP)-(CFCFRMS), Custody, Restoration of Money and Grievance Redressal https://cdnbbsr.s3waas.gov.in/s3ec05142c65e00f4f7cf2e6c4c996e340/uploads/2026/04/2026040992.pdf

[33] Candour Legal. (2026). Section 509 Crypto Reporting from April 2026 and India's Path to the OECD CARF in 2027.https://candourlegal.com/section-509-crypto-reporting-india-carf-2027/

[34] Ibid.

[35] Notably, the framework's effectiveness will ultimately depend on the breadth of international participation. Assets held through service providers located in jurisdictions that have not adopted CARF or do not participate in the automatic exchange of information framework may continue to remain outside the reporting network, creating residual opportunities for regulatory arbitrage and tax avoidance.

[36] Referred to as 'Reporting Crypto-Asset Service Providers (RCASPs)' in the OECD's Crypto-Asset Reporting Framework (CARF).

holder's identity, tax identification numbers, transaction types, and fair market values. This comprehensive international data sharing will finally close the disclosure asymmetry that has historically shielded offshore traders from domestic tax enforcement, effectively eliminating the "offshore gap"[37].

India's transition from deterrence to structured compliance does not occur in a vacuum. It is both shaped by and contributing to a broader shift in the global regulatory architecture, driven by the finalized frameworks of international standard-setting bodies.

[37] Candour Legal. (2026). Section 509 Crypto Reporting from April 2026 and India's Path to the OECD CARF in 2027.https://candourlegal.com/section-509-crypto-reporting-india-carf-2027/

CHAPTER C

The Shift to Global Regulatory Consensus

1. Standard-Setting Bodies (SSBs): Finalized Frameworks by IMF, FSB, and FATF

1.1 Overview of the Global Shift

The global governance of VDAs has definitively transitioned from an era of regulatory ambiguity and isolated policy design to a phase of structured legal recognition and urgent implementation. International SSBs, including the Financial Stability Board (FSB), the International Monetary Fund (IMF), the Financial Action Task Force (FATF), the International Organization of Securities Commissions (IOSCO), and the Basel Committee on Banking Supervision (BCBS), have finalized their foundational frameworks.

Consequently, the regulatory focus has evolved beyond establishing baseline rules toward ensuring consistent domestic implementation, mitigating cross-border regulatory arbitrage, and enhancing international supervisory coordination.

1.2 FSB & IMF Risk-Based Frameworks

The IMF-FSB Synthesis Paper has established a comprehensive risk-based architecture anchored in the foundational principle of "same activity, same risk, same regulation"[38]. This framework promotes proportionality, technological neutrality, and close cooperation among financial authorities globally.

However, despite these unified directives, global implementation continues to lag. An October 2025 FSB thematic peer review, which evaluated the application of the global regulatory framework across 37 jurisdictions, found that while most nations have begun adapting their legal frameworks, implementation remains incomplete and highly inconsistent[39]. Supervisory mandates are frequently unclear, particularly regarding cross-border activities. Furthermore, many jurisdictions have yet to operationalize frameworks for global stablecoin arrangements,

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[38]Gujarat National Law University. (2026, March). Crypto assets in India: Assessing the case for regulation (Abridged version). GNLU. https://gnlu.ac.in//Content/gnlu/pdf/odrd/Abridged%20Version_Report_Crypto%20Assets%20Project.pdf

[39] Financial Stability Board (FSB). (2025) Thematic Review on FSB Global Regulatory Framework for Crypto-asset Activities: Peer review report https://www.fsb.org/uploads/P161025-1.pdf

creating profound risks to financial stability, incentivizing regulatory arbitrage, and resulting in weak oversight of systemic arrangements.

The FSB review further observed that implementation challenges extend beyond the adoption of legislative frameworks. Many jurisdictions continue to face difficulties in establishing clear supervisory responsibilities, particularly where cryptoasset activities cut across securities, banking, payments, and AML/CFT regulatory mandates. The review also noted that differences in national approaches to licensing, authorization thresholds, and cross-border supervision may create opportunities for regulatory arbitrage, potentially undermining the objective of achieving globally consistent regulatory outcomes.

Another key finding was the limited development of cross-border supervisory cooperation arrangements. While many jurisdictions have mechanisms for enforcement-related information sharing, fewer have established frameworks capable of supporting ongoing supervision of internationally active cryptoasset firms and global stablecoin arrangements. The FSB therefore emphasized the importance of strengthening supervisory cooperation and information-sharing mechanisms to address the inherently cross-border nature of digital asset markets.

1.3 IOSCO's 2023 Roadmap and Tokenization Focus

Recognizing the significant risk of harm to retail investors and the market turmoil caused by unregulated platforms, IOSCO finalized its comprehensive *Policy Recommendations for Crypto and Digital Asset (CDA) Markets* and *Decentralized Finance (DeFi)* in late 2023[40]. This outcomes-focused framework is heavily concentrated on addressing market integrity and investor protection concerns. Specifically, it establishes granular regulatory expectations to mitigate conflicts of interest arising from vertical integration, prevent market manipulation and fraud, ensure the safeguarding of client assets, and enforce strict retail client appropriateness.

IOSCO's focus has now shifted from rulemaking to implementation monitoring. Pursuant to its 2023 Crypto-Asset Implementation Roadmap, IOSCO launched a pilot thematic review in 2025, coordinated with the FSB[41], to assess how jurisdictions are implementing key recommendations relating to governance, conflicts of interest, market abuse, custody, client asset protection, retail disclosures, and cross-border cooperation. The review found meaningful progress across participating jurisdictions but concluded that implementation remains uneven and that

[40] International Organization of Securities Commissions (IOSCO). (2023). Policy Recommendations for Crypto and Digital Asset Markets Final Report. https://www.iosco.org/library/pubdocs/pdf/IOSCOPD747.pdf

[41] International Organization of Securities Commissions (IOSCO). (2025).Thematic Review Assessing the Implementation of IOSCO Recommendations for Crypto and Digital Asset Markets https://www.iosco.org/library/pubdocs/pdf/IOSCOPD801.pdf

significant gaps persist, particularly in supervisory cooperation and the regulation of globally active crypto-asset service providers.

The review further noted that while most jurisdictions have established some form of cross-border cooperation mechanism, these arrangements remain largely enforcement-focused and are not yet sufficiently developed to support ongoing supervision of multinational VDASPs. IOSCO consequently called for enhanced information-sharing frameworks and greater coordination among regulators to address the increasingly global nature of crypto-asset markets.

Beyond crypto-asset regulation, IOSCO has issued targeted guidance on the tokenization of traditional assets[42], emphasizing that while existing regulatory frameworks may apply in principle, tokenized market structures raise distinct governance, disclosure, and operational risks that mandate consistent supervisory treatment across all jurisdictions.

1.4 BCBS Global Prudential Standards

To safeguard the traditional banking sector from the volatility of digital assets, the BCBS finalized targeted amendments to its prudential framework and disclosure standards for banks' cryptoasset exposures[43]. The framework distinguishes between tokenized traditional assets and stablecoins with effective stabilization mechanisms (Group 1) and unbacked or highly volatile cryptoassets (Group 2), subjecting the latter to highly conservative capital treatments and a strict exposure limit.

These prudential requirements came into effect on January 1, 2026. However, acknowledging the rapid pace of technological innovation and market shifts,including the scaling of tokenized deposits and stablecoin issuance, the BCBS has since expedited a review of targeted elements of the prudential standard, though the timeline for the conclusion of this review has not been publicly confirmed[44].

[42] International Organization of Securities Commissions (IOSCO). (2025). Tokenization of Financial Assets https://www.iosco.org/library/pubdocs/pdf/IOSCOPD809.pdf
[43] Basel Committee on Banking Supervision's (BCBS). (2024). Disclosure of cryptoasset exposures.https://www.bis.org/bcbs/publ/d580.htm
[44] Bank for International Settlements (BIS). (2026). Basel Committee discusses recent market developments and targeted review of cryptoasset standard. https://www.bis.org/press/p260225.htm

1.5 FATF Standards, Commonwealth Model Laws and AML/CFT Compliance Gaps

The FATF has also successfully extended AML/CFT obligations to VASPs. A cornerstone of this framework is the strict "Travel Rule", which mandates that VASPs collect and securely transmit originator and beneficiary information during transactions to combat illicit finance[45].

Despite establishing these rules, FATF continues to report severe and uneven progress in jurisdictional compliance. The 2025 Targeted Update on the implementation of FATF Standards noted that while 99 jurisdictions have now drafted or enacted Travel Rule frameworks, over 75% of jurisdictions remain only partially compliant or completely non-compliant with FATF's baseline requirements[46]. Significant vulnerabilities persist globally in licensing, supervision, and cross-border data sharing. This implementation gap remains a serious concern, as non-compliant VASPs and offshore networks continue to be leveraged in complex financial crime typologies, underscoring the urgent need for robust, coordinated enforcement.

FATF's March 2026 report, Understanding and Mitigating the Risks of Offshore Virtual Asset Service Providers[47], further highlighted that offshore VASPs have emerged as one of the most significant supervisory blind spots in the global digital asset ecosystem. The report observed that many offshore VASPs deliberately structure their operations to provide services into jurisdictions where they lack registration or licensing, exploiting inconsistencies in national regulatory frameworks and complicating supervisory cooperation. These entities have been linked to large-scale fraud, money laundering, sanctions evasion, and terrorist financing, with FATF identifying techniques such as nested exchange arrangements, intermediary wallets, cross-chain transfers, and multi-jurisdictional corporate structures as common methods used to obscure regulatory oversight. To address these risks, FATF called upon jurisdictions to adopt activity-based licensing frameworks, strengthen cross-border supervisory cooperation, proactively identify unlicensed offshore operators, and impose effective sanctions against entities that provide virtual asset services without appropriate regulatory authorisation.

FATF has also continued to emphasize the evolving AML/CFT risks associated with stablecoins, unhosted (self-hosted) wallets, and peer-to-peer (P2P) transactions. Its 2026 Targeted Report on

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[45] Financial Action Task Force (FATF). (2025). FATF urges stronger global action to address Illicit Finance Risks in Virtual Assets.https://www.fatf-gafi.org/en/publications/Fatfrecommendations/targeted-update-virtual-assets-vasps-2025.html

[46] Financial Action Task Force (FATF). (2025).Targeted Update on Implementation of the FATF Standards on Virtual Assets and Virtual Asset Service Providers.https://www.fatf-gafi.org/content/dam/fatf-gafi/recommendations/2025-Targeted-Upate-VA-VASPs.pdf.coredownload.pdf

[47]:"

Stablecoins and Unhosted Wallets – Peer-to-Peer Transactions notes that while P2P transfers are a legitimate feature of blockchain networks, they also represent one of the most significant regulatory blind spots because transactions conducted directly between unhosted wallets occur outside the regulated VASP ecosystem[48]. This limits the application of customer due diligence, transaction monitoring, sanctions screening, and Travel Rule requirements, making P2P channels attractive for money laundering, sanctions evasion, fraud, and other illicit financial activity.

FATF further observed that the increasing use of stablecoins, owing to their price stability, speed, and cross-border functionality, could amplify these risks as adoption grows, particularly where stablecoins are transferred through unhosted wallets or intermediary P2P networks. Rather than recommending restrictions on P2P activity itself, FATF advocates a risk-based supervisory approach focused on strengthening oversight of regulated VASPs that provide entry into and exit from the virtual asset ecosystem, enhancing blockchain analytics and transaction tracing capabilities, improving cross-border supervisory cooperation, and ensuring that stablecoin issuers and other ecosystem participants appropriately identify, assess, and mitigate associated money laundering, terrorist financing, and proliferation financing risks.

Efforts to translate international standards into operational legislation have also begun to emerge at the regional and intergovernmental level. In 2024, the Commonwealth Secretariat published a Model Law on Virtual Assets[49] designed to assist member states in developing comprehensive regulatory frameworks aligned with FATF standards. The model law provides guidance on licensing virtual asset activities, defining issuer and intermediary obligations, implementing AML/CFT controls, and establishing supervisory and enforcement mechanisms.

By mid-2026, several Commonwealth jurisdictions had reportedly begun using the framework as a basis for drafting or amending domestic legislation, reflecting a broader trend towards regulatory harmonisation across developing and emerging-market economies.

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[48] Financial Action Task Force (FATF). (2026).Targeted Report on Stablecoins and Unhosted Wallets: Peer-to-Peer Transactions https://www.fatf-gafi.org/content/dam/fatf-gafi/publications/targeted-report-on-stablecoins-and-unhosted-wallets.pdf.coredownload.inline.pdf

[49] Commonwealth Secretariat. (2024). The Commonwealth Model Law on Virtual Assets. https://comsec-web-static.s3.eu-west-1.amazonaws.com/s3fs-public/2024-07/commonwealth-model-law-on-virtual-assets_d19821.pdf

2. Implementing the OECD's CARF

2.1 Global Implementation of CARF

To combat the pervasive challenges of cross-border tax evasion facilitated by the pseudonymous and decentralized nature of digital assets, the OECD introduced the CARF. It standardizes the automatic exchange of tax-relevant crypto information across jurisdictions globally[50]. Under this framework, participating entities designated as Reporting Crypto-Asset Service Providers are required to systematically capture and transmit detailed user data. This includes account holder identities, tax identification numbers (TINs), transaction types (such as fiat-to-crypto, crypto-to-fiat, and crypto-to-crypto swaps), and the fair market values of the assets at the time of the transaction[51]. By establishing a globally harmonized data standard, CARF aims to eliminate the informational blind spots that have historically allowed offshore crypto activity to evade domestic tax nets.

2.2 India's Alignment and Integration into Financial Reporting

India's adoption of the OECD's CARF represents a significant step in integrating virtual digital assets into the global architecture of financial transparency. Through the CBDT's 2026 amendments, crypto-assets, specified e-money products, and certain central bank digital currencies have been brought within a standardized reporting framework designed to facilitate the automatic exchange of tax-relevant information between jurisdictions[52].

The significance of these reforms extends beyond tax administration. Historically, international information-sharing mechanisms such as the CRS focused primarily on traditional financial accounts held with regulated financial institutions. The emergence of decentralized and blockchain-based assets exposed important gaps within this framework, creating opportunities for offshore holdings and cross-border transactions to remain outside established reporting systems. CARF seeks to address these gaps by extending comparable reporting standards to crypto-asset transactions and service providers.

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[50] Organisation for Economic Co-operation and Development (OECD). (2023). International Standards for Automatic Exchange of Information in Tax Matters: Crypto-Asset Reporting Framework and 2023 update to the Common Reporting Standard https://www.oecd.org/content/dam/oecd/en/publications/reports/2023/06/international-standards-for-automatic-exchange-of-information-in-tax-matters_ab3a23bc/896d79d1-en.pdf

[51] Candour Legal. (2026). Section 509 Crypto Reporting from April 2026 and India's Path to the OECD CARF in 2027.https://candourlegal.com/section-509-crypto-reporting-india-carf-2027/

[52] Ibid

By aligning its domestic reporting framework with evolving OECD standards, India has positioned itself within a broader international effort to ensure that digital assets are subject to transparency obligations comparable to those applicable to conventional financial assets. This reflects a wider policy shift towards treating virtual digital assets as an increasingly integrated component of the global financial reporting ecosystem rather than as a parallel or isolated asset class.

2.3 Domestic Reporting via Section 509

To operationalize this data collection domestically, India enacted Section 509(1) of the re-codified Income-tax Act, 2025 (originating from Section 285BAA of the 1961 Act). Starting April 1, 2026, prescribed reporting entities, which encompass domestic exchanges, wallet providers, and offshore VASPs serving Indian users, are mandated to furnish mechanical, user-level transaction data directly to the Income Tax Department[53].

To ensure strict compliance, Section 446 of the Act introduces a rigorous penalty framework: entities face a penalty of ₹200 per day for failing to furnish the required statements on time, alongside a flat ₹50,000 penalty for submitting inaccurate information that is not promptly rectified[54]. Importantly, this unedited tax reporting mandate runs parallel to, but distinctly separate from, FIU-IND's AML/CFT reporting under the PMLA. While the FIU-IND track focuses on monitoring suspicious patterns, the Section 509 track focuses on comprehensive transaction reporting to verify taxpayer declarations.

2.4 Closing the Offshore Loophole and Unresolved Ambiguities

The most strategically significant outcome of India's CARF alignment is the impending closure of the "offshore gap"[55]. Once this international network goes live, the CBDT will begin receiving automated, annual data feeds from participating foreign jurisdictions detailing the offshore crypto holdings and transactions of Indian residents. This mechanism will forcefully resolve the disclosure asymmetry that has allowed Indian users to migrate trading volumes to offshore platforms to avoid the 1% TDS and domestic taxation[56].

Notwithstanding the substantial progress represented by CARF implementation, several operational uncertainties remain. Questions persist regarding the practical enforceability of

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[53] Candour Legal. (2026). Section 509 Crypto Reporting from April 2026 and India's Path to the OECD CARF in 2027.https://candourlegal.com/section-509-crypto-reporting-india-carf-2027/

[54] Ibid.

[55] Candour Legal. (2026). Section 509 Crypto Reporting from April 2026 and India's Path to the OECD CARF in 2027.https://candourlegal.com/section-509-crypto-reporting-india-carf-2027/

[56] Ibid.

reporting obligations against offshore platforms that serve Indian residents without a domestic presence, the mechanisms available to compel compliance from non-participating jurisdictions, and the extent of the powers available to implementation authorities in cases involving decentralized protocols or intermediaries with limited legal nexus to India. Addressing these ambiguities will be critical if CARF is to fully achieve its objective of eliminating the offshore disclosure gap.

CHAPTER D

Global Milestones in VDA Legislation

1. United States

1.1 The Paradigm Shift: From Enforcement to Statutory Architecture

For much of the past decade, the United States' regulatory approach to VDAs was widely characterized as "regulation by enforcement"[57]. In the absence of a dedicated statutory framework, agencies like the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC) relied on ad hoc enforcement actions and the application of legacy securities and commodities laws to govern emerging technological arrangements. This approach generated significant market fragmentation, jurisdictional overlap, and legal uncertainty for industry participants.

However, the U.S. landscape has undergone a profound doctrinal shift toward ex-ante rulemaking and formalized, statute-led architecture. In late 2025, the SEC and CFTC accelerated this transition by announcing a joint harmonization initiative to reduce regulatory fragmentation[58]. As part of this initiative, the agencies released a shared, official taxonomy classifying digital assets into five distinct functional categories: digital commodities, digital collectibles, digital tools, stablecoins, and digital securities[59]. This administrative alignment has been powerfully reinforced by the most consequential legislative developments in the U.S. digital asset space in a decade: the passage of the GENIUS Act in 2025 and the advancing CLARITY Act.

1.2 The GENIUS Act (2025): A Federal Framework for Stablecoins

The GENIUS Act, signed into law in July 2025, marks a landmark bipartisan shift in U.S. stablecoin policy. The Act fundamentally reframes payment stablecoins as payment liabilities rather than speculative assets, officially placing them under the prudential supervision of

[57] Adrien K. Anderson et al., Clarifying the CLARITY Act: What To Know About the House Crypto Market Structure Bill and Its Path to Law, Arnold & Porter: Perspectives (Aug. 26, 2025), https://www.arnoldporter.com/en/perspectives/advisories/2025/08/clarifying-the-clarity-act

[58] Commodity Futures Trading Commission (CFTC). (2025). CFTC and SEC Issue Joint Statement on Regulatory Harmonization Efforts. https://www.cftc.gov/PressRoom/PressReleases/9115-25

[59] Securities and Exchange Commission (SEC); Commodity Futures Trading Commission (CFTC). Application of the Federal Securities Laws to Certain Types of Crypto Assets and Certain Transactions Involving Crypto Assets.https://www.sec.gov/files/rules/interp/2026/33-11412.pdf

federal banking regulators, including the Federal Reserve, the Office of the Comptroller of the Currency (OCC), and the Federal Deposit Insurance Corporation (FDIC)[60].

To ensure financial integrity and consumer protection, the GENIUS Act mandates that "permitted payment stablecoin issuers" maintain a strict 1:1 reserve backing exclusively in highly liquid, low-risk assets, specifically U.S. Treasury bills, Federal Reserve deposits, and cash equivalents[61]. Issuers are also subject to mandatory, certified monthly audits by registered public accounting firms and must maintain full compliance with the Bank Secrecy Act, including stringent AML/CFT obligations[62].

Critically, the GENIUS Act explicitly resolves a longstanding jurisdictional ambiguity. By amending existing securities and commodities laws to clarify that qualifying payment stablecoins are neither securities nor commodities, the Act effectively ring-fences compliant stablecoin issuers from overlapping SEC and CFTC oversight, providing unprecedented legal certainty to the market.

1.3 The CLARITY Act: Resolving Jurisdictional Boundaries

While the GENIUS Act addressed stablecoins, the CLARITY Act targets the foundational jurisdictional uncertainty that has hampered the broader U.S. digital asset market. The legislation introduces a functional classification system anchored in the degree of decentralization of an asset's underlying network[63]. Under this doctrine, assets operating on fully decentralized networks are statutorily classified as "digital commodities" and placed under the exclusive jurisdiction of the CFTC[64]. Conversely, assets that involve ongoing

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[60] U.S Department of the Treasury. (2025). Guiding and Establishing National Innovation for U.S. Stablecoins Act Implementation https://www.regulations.gov/document/TREAS-DO-2025-0037-0001

[61] Federal Register. (2026). GENIUS Act Requirements and Standards for FDIC-Supervised Permitted Payment Stablecoin Issuers and Insured Depository Institutions https://www.federalregister.gov/documents/2026/04/10/2026-06974/genius-act-requirements-and-standards-for-fdic-supervised-permitted-payment-stablecoin-issuers-and

[62] Ibid.

[63] Summary: H.R.4763 — 118th Congress (2023-2024) https://www.congress.gov/bill/118th-congress/house-bill/4763

[64] Federal Register. (2026). GENIUS Act Requirements and Standards for FDIC-Supervised Permitted Payment Stablecoin Issuers and Insured Depository Institutions https://www.federalregister.gov/documents/2026/04/10/2026-06974/genius-act-requirements-and-standards-for-fdic-supervised-permitted-payment-stablecoin-issuers-and

"essential managerial efforts" by a centralized entity remain classified as "investment contracts" subject to SEC oversight[65].

Furthermore, the CLARITY Act establishes a comprehensive market infrastructure regime, mandating the registration of digital commodity exchanges, brokers, and dealers with the CFTC, thereby applying strict rules on fair access, conflict-of-interest mitigation, and asset segregation to the spot crypto market.

As of mid-2026, the CLARITY Act has made critical legislative strides but remains subject to final floor votes and complex political negotiations. On May 14, 2026, the Senate Banking Committee passed the CLARITY Act in a pivotal 15-9 vote, advancing the bill to the Senate floor[66]. The updated text reflects months of intense negotiations to resolve several major roadblocks:

- Stablecoin Yield: The most protracted contention involved whether stablecoins could offer yield. A compromise was reached that bans passive yield economically equivalent to bank deposit interest (preventing stablecoins from being utilized strictly as unregulated savings products) while specifically carving out and permitting rewards tied to "bona fide activities or bona fide transactions"[67].

- DeFi Protections: The May 2026 markup text successfully incorporated negotiated provisions aimed at establishing regulatory clarity and protections for DeFi participants, ensuring that non-custodial software developers are not unduly penalized as financial intermediaries.

- Ethics Issue: The bill faces a significant political hurdle on the Senate floor regarding conflict-of-interest protections. Several lawmakers have warned they will oppose the legislation unless it includes strict ethics language banning senior government officials, including the President, from holding financial interests in the crypto industry. This provision is aimed at mitigating conflicts arising from President Trump's family involvement in World Liberty Financial and the USD1 stablecoin.

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[65] Krause, David. (2026). The CLARITY Act in Motion: What the Senate Debate Reveals About Digital Asset Regulation. 10.13140/RG.2.2.11039.73129. https://www.researchgate.net/publication/404450943_The_CLARITY_Act_in_Motion_What_the_Senate_Debate_Reveals_About_Digital_Asset_Regulation

[66] H.R.3633 - Digital Asset Market Clarity Act. https://www.congress.gov/bill/119th-congress/house-bill/3633/text

[67] Troutman Pepper Financial Services. (2026, May 15). Senate Banking Committee advances Clarity Act in bipartisan vote. https://www.troutmanfinancialservices.com/2026/05/senate-banking-committee-advances-clarity-act-in-bipartisan-vote/

- Merger with Senate Agriculture Committee's Legislation: Before final enactment, negotiators must seek convergence with the Digital Commodities Intermediaries Act, a parallel market structure bill passed by the Senate Agriculture Committee. Lawmakers are currently working to merge the respective texts into a unified, bipartisan framework for the final Senate floor vote.

Alongside this, the SEC is advancing formal rulemaking for on-chain trading systems and tokenised securities, having issued a token taxonomy in March 2026 jointly with the CFTC[68]. The Federal Reserve has proposed a framework for limited payment accounts that would give non-bank firms, including crypto companies, access to Fed payment rails without full master account status[69].

The overall US approach is still in progress as rulemaking is expected to bring even more clarity and definition to the regulatory landscape of the sector. Notably, while the country pursues its ambition to become the "crypto capital of the world", SSBs and onlookers are raising concerns about its bullish push for US-backed stablecoins[70]. The Bank for International Settlements recently revealed that approximately 98% of the total stablecoins currently in circulation are dollar-denominated[71], posing implications for the monetary sovereignty and financial stability of emerging markets and developing economies (EMDEs) in particular.

2. European Union

The EU has moved firmly from policy design to active implementation and enforcement. After coming into effect in 2023, MiCA replaced fragmented national frameworks with a unified licensing regime for crypto asset service providers and stablecoin issuers across all 27 member states[72]. The Digital Operational Resilience Act (DORA), which came into full application in

[68] Chapman (2026). "No Longer the Securities and Everything Commission": SEC and CFTC Issue Landmark Interpretation on Crypto Assets https://www.chapman.com/about https://www.chapman.com/publication-sec-and-cftc-clarify-crypto-asset-taxonomy-and-the-application-of-federal-securities-laws

[69] Federal Register. (2026). Federal Reserve Board requests public comment on a proposal to establish a "payment account," which legally eligible financial institutions could use for the specific purpose of clearing and settling their payments https://www.federalreserve.gov/newsevents/pressreleases/other20260520a.htm

[70] Bank for International Settlements (BIS). (2026). The impact of stablecoins on the international monetary and financial system. https://www.bis.org/publ/bppdf/bispap170.htm

[71] Hernández de Cos, P. (2026, April 20). Stablecoins: framing the debate [Speech transcript]. Bank for International Settlements. https://www.bis.org/speeches/sp260420.pdf

[72] Regulation (EU) 2023/1114 of the European Parliament and of the Council. (2023). Official Journal of the European Union, L 150, pp. 40–205. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1114

January 2025, added binding cybersecurity and ICT risk management obligations for crypto firms[73]. The EU's updated AML Regulation and the establishment of a centralised AML Authority will extend supervisory reach over cross-border VDASPs from 2027[74].

The MiCA transitional period, which allowed existing providers to continue operating under national registrations, closed on July 1, 2026. This marks the window after which unlicensed firms must exit the EU market. France's Autorité des Marchés Financiers (AMF) was among the first national regulators to set a firm enforcement deadline, with unlicensed firms required to submit orderly wind-down plans[75]. Poland remained the last EU member state without a domestic MiCA enabling act, though its parliament passed a government-backed bill in May 2026 after two presidential vetoes, with a third veto still possible at the time of publishing[76]. The EU is simultaneously reviewing MiCA ahead of its mandatory legislative review in June 2027, with public consultations open until August 2026 exploring gaps in coverage of DeFi, staking, and wrapped token classification[77].

The European Central Bank has taken a notably cautious stance on private stablecoins, with President Christine Lagarde publicly arguing that the case for euro stablecoins is weaker than it appears and pushing back against proposals to ease liquidity requirements or extend ECB backstop access to stablecoin issuers[78]. At the moment, the ECB's preferred architecture keeps deposit-based money inside supervised banks while allowing tokenised representations to circulate on distributed ledger rails, with the digital euro as the central bank's preferred

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[73] Regulation (EU) 2022/2254 of the European Parliament and of the Council. (2023). Official Journal of the European Union, L 333, pp. 1–79. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022R2554

[74] Anti-Money Laundering Authority (AMLA). (2026). Single Programming Document 2026-2028. https://www.amla.europa.eu/document/download/27549516-d110-4e91-b1ed-d3552b8f9661_en?filename=AMLA%20SPD%202026-2028.pdf

[75] Howcroft,E. (2026, May 28). Crypto companies without EU licences face prosecution, French regulator warns. Reuters. https://www.reuters.com/business/finance/crypto-companies-without-eu-licences-face-prosecution-french-regulator-warns-2026-05-28/

[76] Reuters. (2026, May 28). Polish lawmakers adopt crypto regulation amid multi-million dollar fraud probe. Reuters. https://www.reuters.com/business/finance/polish-lawmakers-adopt-crypto-regulation-amid-multi-million-dollar-fraud-probe-2026-05-15/

[77] European Commission.(2026). Targeted consultation on the review of MiCA Regulation.https://finance.ec.europa.eu/document/download/62be7015-f066-4fac-b74e-71bacdbcc9f5_en?filename=2026-mica-review-targeted-consultation-document_en.pdf

[78] European Central Bank.(2026) Speech: Stablecoins and the future of money: separating functions from instruments.https://www.ecb.europa.eu/press/key/date/2026/html/ecb.sp260508~dd909fbed1.en.html

long-term instrument[79]. A 37-bank consortium called Qivalis, operating under MiCA authorisation, is nonetheless moving ahead with a euro-pegged stablecoin launch in the second half of 2026[80].

3. United Kingdom

The UK is transitioning crypto into its mainstream financial regulatory architecture through the Financial Services and Markets Act 2023, operating under a dual-regulator model in which the Financial Conduct Authority (FCA) oversees market conduct and the Bank of England supervises systemically important stablecoins[81]. The FCA published its comprehensive regulatory perimeter guidance in April 2026, proposing to bring most crypto activities under FSMA by October 2027, with a five-month application window for firms opening in September 2026[82].

The UK's approach has been complicated by structural tensions between HM Treasury, the FCA, and the Bank of England, whose overlapping mandates on stablecoins, tokenised deposits, and the digital pound have created operational uncertainty for firms. The BoE has been notably cautious on stablecoins, initially proposing an unhosted wallet ban and strict holding limits before softening its position following industry backlash[83]. The UK also enacted the Property (Digital Assets etc.) Act in late 2025, explicitly recognising digital assets as a distinct category of personal property, a significant step for clarity on ownership and insolvency rights[84].

4. Canada

Canada has maintained a principles-based regulatory approach, governing crypto intermediaries through existing financial sector frameworks rather than standalone legislation.

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[79] European Central Bank.(2026) Speech: Stablecoins and the future of money: separating functions from instruments.https://www.ecb.europa.eu/press/key/date/2026/html/ecb.sp260508~dd909fbed1.en.html

[80] Sandor, K.(2026, May 20). Pan-European stablecoin effort expands to 37 lenders in push back against U.S. dollar dominance.CoinDesk. https://www.coindesk.com/business/2026/05/20/pan-european-stablecoin-effort-expands-to-37-lenders-in-push-back-against-u-s-dollar-dominance

[81] HM Treasury. (2023). Update on Plans for the Regulation of Fiat-backed Stablecoins https://assets.publishing.service.gov.uk/media/653a82b7e6c968000daa9bdd/Update_on_Plans_for_Regulation_of_Fiat-backed_Stablecoins_13.10.23_FINAL.pdf

[82] Financial Conduct Authority (FCA). (2026) CP26/13: Cryptoasset perimeter guidance. https://www.fca.org.uk/publication/consultation/cp26-13.pdf

[83] Seers, P.(2025, November 10).Bank of England softens stablecoin stance with new proposals. Reuters. https://www.reuters.com/sustainability/boards-policy-regulation/bank-england-proposes-new-rules-stablecoins-2025-11-10/

[84] Property (Digital Assets etc) Act 2025, c. 29. (UK). https://www.legislation.gov.uk/ukpga/2025/29

The Retail Payment Activities Act opened registration for virtual currency payment service providers in 2024, subjecting them to risk management standards[85]. CARF implementation took effect in January 2026, introducing mandatory reporting of crypto asset transactions for tax transparency.

The Canadian Investment Regulatory Organization (CIRO), the pan-Canadian self-regulatory organization that oversees all investment dealers, mutual fund dealers and trading activity on Canada's debt and equity marketplaces, has also issued guidance on digital asset custody for crypto asset trading platforms[86]. The framework strengthens requirements for how client assets are held, including by third-party custodians, and builds on existing custody requirements. These will be implemented through the terms and conditions of membership. On the enforcement side, Bill C-25 was introduced in 2026 to ban political contributions in crypto assets, and a nationwide ban on crypto ATMs was announced to combat cyber fraud, reflecting a regulatory posture that is cautious by design and attentive to illicit finance risks[87].

5. Australia

Australia passed the Corporations Amendment (Digital Assets Framework) Act in April 2026, formally requiring digital asset platforms and tokenised custody platforms to hold an Australian Financial Services Licence (AFSL)[88]. The law subjects platforms to the same conduct, disclosure, and asset segregation rules as traditional financial brokers, with Australian Securities and Investments Commission (ASIC) publishing an implementation roadmap and full enforcement commencing in April 2027. The Reserve Bank of Australia has separately advanced Project Acacia to pilot wholesale CBDC and tokenised deposit infrastructure for institutional settlement[89].

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[85] Department of Justice (2021)Retail Payment Activities Act S.C. 2021, c. 23, s. 177. https://laws-lois.justice.gc.ca/eng/acts/R-7.36/page-1.html

[86] Canadian Investment Regulatory Organization. (2026, February 3). CIRO issues guidance on digital asset custody for crypto-asset trading platforms. https://www.ciro.ca/newsroom/publications/ciro-issues-guidance-digital-asset-custody-crypto-asset-trading-platforms

[87] Bill C-25, An Act to amend the Canada Elections Act and to enact An Act to change the names of certain electoral districts, 1st Sess, 45th Parl, Canada (2026). https://www.parl.ca/legisinfo/en/bill/45-1/c-25,

[88] Corporations Amendment (Digital Assets Framework) Act 2026, No. 38 (Cth). https://www.ato.gov.au/law/view/pdf/acts/20260038.pdf

[89] Reserve Bank of Australia.(2026). Project Acacia – Exploring the role of digital money in wholesale Tokenised asset markets (Final Report) https://www.rba.gov.au/payments-and-infrastructure/central-bank-digital-currency/pdf/project-acacia-final-report.pdf

6. Russia

Russia has executed a significant policy reversal driven by geopolitical isolation and international financial sanctions. Legislation enacted in 2024 and 2025 legalised crypto mining and permitted cryptoassets use in cross-border foreign trade settlements as a mechanism for bypassing sanctioned traditional financial channels[90]. In 2026, Russia's State Duma passed a comprehensive crypto framework in its first reading that will formally license exchanges, brokers, and custodians under Bank of Russia oversight, ban domestic crypto payments while permitting foreign trade use, restrict retail investors to approved high-liquidity assets, and impose tiered access requirements[91]. Unlicensed platforms will be prohibited from July 2027. The Central Bank is simultaneously implementing mandatory KYC for all domestic crypto platforms, effective July 2026[92]. The Moscow Exchange has begun publishing crypto indices with plans to launch futures products for qualified investors later in 2026, signalling the progressive integration of crypto into Russia's formal financial infrastructure[93].

Notably, The European Union and the United Kingdom have imposed sweeping coordinated sanctions targeting Russia's financial, energy, and military sectors to restrict its war economy in Ukraine. The UK government announced one of its most expansive crypto-focused sanctions packages to date, targeting 18 cryptoassets exchanges, payment providers, and individuals linked to Russia's sanctions-evasion infrastructure[94]. The package applies Regulation 17A to crypto asset exchanges for the first time, dramatically expanding obligations for UK VASPs by cutting off correspondent banking relationships and restricting transfers involving designated entities. The A7 network specifically was identified as a Kremlin-backed channel used to finance military procurement and process oil-sale proceeds through Kyrgyzstan-linked financial infrastructure.

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[90] Kennedy J., Bryan E., Ploom I., Veebel V.(2025, August 7) Russia's Use of Crypto Schemes. RAND. https://www.rand.org/pubs/commentary/2025/08/russias-use-of-crypto-schemes.html

[91] Draft Law No. 1194918-8, On Digital Currency and Digital Rights. (2026). State Duma of the Federal Assembly of the Russian Federation.https://sozd.duma.gov.ru/bill/1194918-8

[92] Bank of Russia. (2025).Cryptocurrency market prospects: Bank of Russia's proposals https://cbr.ru/eng/press/event/?id=28215

[93] Rodrigues F.,(2026, Feb 3). Moscow Exchange to add SOL, XRP, and TRX futures contracts to crypto derivatives lineup.CoinDesk.https://www.coindesk.com/markets/2026/02/03/moscow-exchange-to-add-sol-xrp-and-trx-futures-contracts-to-crypto-derivatives-lineup

[94] Chainalysis. (2026,May 26).U.K. Sanctions 18 Entities and Persons for Evading Russian Trade Blockades.https://www.chainalysis.com/blog/uk-sanctions-crypto-entities-russian-trade-blockade-evasion-may-2026/

The European Union's package introduces measures against 20 Russian banks and four third-country financial institutions and entities connecting to the Russian System for Transfer of Financial Messages (SPFS), the Russian banking messaging network[95]. The measures also block Russia's central bank digital currency (the digital ruble) and support for the ruble-pegged RUBx stablecoin. In addition, the EU has targeted the Russia-linked A7A5 stablecoin ecosystem, including its developer, issuer, and associated trading platforms, citing concerns that the token has been used to facilitate cross-border transactions and circumvent international sanctions[96]. Consequently, EU residents are now strictly prohibited from transacting with Russian and Belarusian crypto platforms or providing MiCA-regulated services to individuals in those jurisdictions.

7. Asia-Pacific

The Asia-Pacific region represents the world's most diverse and rapidly developing regulatory landscape for digital assets, with leading jurisdictions having moved well beyond framework design into active licensing and enforcement.

7.1 Hong Kong

Hong Kong has significantly advanced its digital asset framework, notably implementing the Stablecoins Ordinance in August 2025[97]. Under this stringent regime, the Hong Kong Monetary Authority (HKMA) issued its first stablecoin licences in April 2026 to HSBC and Anchorpoint Financial, a joint venture led by Standard Chartered alongside Animoca Brands and Hong Kong Telecommunications[98]. The framework mandates comprehensive requirements for licensees, including full reserve backing, the strict segregation of client assets, robust Know Your

[95] Acuna, O.(2026, April 27) EU's largest measures against Russia yet include escalation of crypto sanctions evasion.CoinDesk. https://www.coindesk.com/policy/2026/04/27/eu-s-largest-measures-against-russia-yet-include-escalation-of-crypto-sanctions-evasion

[96] Chainalysis Team. (2026, April 24). EU's 20th Russia sanctions package signals a new era of crypto-specific enforcement. Chainalysis. https://www.chainalysis.com/blog/eu-russia-sactions-package-april-2026/

[97] Hong Kong Monetary Authority (HKMA). (2025, July 29). Press Release: Implementation of regulatory regime for stablecoin issuers. https://www.hkma.gov.hk/eng/news-and-media/press-releases/2026/04/20260410-4/

[98] Zhen, S., & Li, S. (2026, April 10). Hong Kong grants first stablecoin licences to StanChart joint venture and HSBC. Reuters. https://www.reuters.com/business/finance/hong-kong-grants-first-stablecoin-licences-stanchart-joint-venture-hsbc-2026-04-10/

Customer (KYC) controls, and guaranteed redemption at par value[99]. Furthermore, Hong Kong is actively expanding its regulatory perimeter to encompass virtual asset advisory and management services. Following public consultations, legislation for these standalone licensing regimes is expected to be introduced to the Legislative Council in 2026, which will effectively complete the territory's comprehensive digital asset architecture[100].

7.2 Singapore

Singapore continues to cement its position as a regulated hub for tokenized finance by finalising its regulatory framework for single-currency stablecoins. This framework requires issuers of stablecoins pegged to the Singapore Dollar or G10 currencies to maintain low-risk reserve assets in segregated accounts, guarantee redemption, and meet strict prudential base capital requirements[101]. Concurrently, the Monetary Authority of Singapore (MAS) has proposed a differentiated, Basel-aligned prudential treatment for banks' crypto-asset exposures[102]. This tailored approach offers lighter capital treatment for lower-risk tokenized traditional assets and stablecoins, while subjecting unbacked crypto-assets to more conservative capital limits. Singapore is also driving broader tokenized finance initiatives through industry collaborations like Project Guardian and the BLOOM initiative, focusing on interoperable market infrastructure and wholesale settlement[103].

7.3 Japan

Japan is executing a major structural pivot in its regulatory approach by approving a cabinet draft amendment to reclassify crypto-assets as financial products under the Financial Instruments and Exchange Act, shifting away from their prior treatment merely as payment

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[99] Hong Kong Monetary Authority (HKMA). (2026, April 10). Press Release: Granting of stablecoin issuer licences. https://www.hkma.gov.hk/eng/news-and-media/press-releases/2026/04/20260410-4/

[100] Charleston Law. (2026, June 3). Hong Kong to License Virtual Asset Advisory & Asset Management Services. https://www.charltonslaw.com/hong-kong-to-license-virtual-asset-advisory-asset-management-services/

[101] Monetary Authority of Singapore. (2023, August 15) Press Release: MAS Finalises Stablecoin Regulatory Frameworkhttps://www.mas.gov.sg/news/media-releases/2023/mas-finalises-stablecoin-regulatory-framework

[102] Monetary Authority of Singapore. (2025, October 9). Prudential treatment of cryptoasset exposures and response to consultation paper on crypto AT1 and tier2. https://www.mas.gov.sg/-/media/mas-media-library/publications/consultations/ppd/2025/response-to-consultation-paper-on-crypto-at1-and-tier2.pdf

[103] Monetary Authority of Singapore. (2025, October 16). MAS launches BLOOM initiative to extend settlement capabilities [Media release]. https://www.mas.gov.sg/news/media-releases/2025/mas-launches-bloom-initiative-to-extend-settlement-capabilities

tools[104]. Expected to take effect as early as fiscal 2027, this transition introduces stringent market fairness rules, including explicit prohibitions on insider trading, enhanced mandatory annual disclosure obligations for issuers, and significantly steeper penalties for unauthorised operations[105]. Concurrently, Japan is advancing broader on-chain finance initiatives, supported by the ruling Liberal Democratic Party's strategy to utilise blockchain for automated settlement, integrate yen-pegged stablecoins, and position the country for regional financial leadership[106].

Japan has also continued to strengthen its co-regulatory model through the Japan Virtual and Crypto Assets Exchange Association (JVCEA). In recent years, the JVCEA has updated its self-regulatory framework to facilitate institutional participation, including the introduction of rules for the sale of crypto-assets to qualified institutional investors and ongoing reforms to streamline token listing and Initial Exchange Offering (IEO) processes, while maintaining standards for custody, investor protection, and market integrity[107].

7.4 South Korea

South Korea has made substantial strides in consumer safety, having implemented its first major investor-protection legislation, the Virtual Asset User Protection Act[108]. Building on this foundation, policymakers are currently developing a comprehensive second-phase framework known as the Digital Asset Basic Act[109]. This proposed legislation aims to cover crucial regulatory gaps by establishing a formal licensing regime, mandating reserve requirements for won-pegged stablecoins, and barring stablecoin issuers from paying interest to holders. Additionally, the Financial Services Commission (FSC) is expected to release detailed guidance on tokenized securities in July 2026, which will pave the way for the country's first regulated

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[104] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

[105] Rodrigues, F. (2026, April 10). Japan moves to classify cryptocurrencies as financial products. CoinDesk. https://www.coindesk.com/policy/2026/04/10/japan-moves-to-classify-cryptocurrencies-as-financial-products

[106] Ibid.

[107] Japan Virtual and Crypto assets Exchange Association. (2026, June 30). Shinchaku jōhō [New information]. https://jvcea.or.jp/information/

[108] Act on the Protection of Virtual Asset Users, Act No. 19563 (2023) (H.K.). Korea Legislation Research Institute, Korea Law Viewer. https://elaw.klri.re.kr/eng_mobile/viewer.do?hseq=63752&key=23&type=part

[109] Acuna, O. (2026, April 8). South Korea proposes cryptocurrency law with bank-style rules for stablecoins. CoinDesk. https://www.coindesk.com/policy/2026/04/08/south-korea-proposes-cryptocurrency-law-with-bank-style-rules-for-stablecoins

framework for issuing and distributing blockchain-based securities under the amended Capital Markets Act[110].

Alongside legislative reforms, South Korea has expanded industry-led self-regulation through the Digital Asset eXchange Alliance (DAXA). Since the enactment of the Virtual Asset User Protection Act, DAXA has progressively issued and updated best-practice standards covering token listings, market surveillance, internal controls, suspicious transaction monitoring, advertising practices, customer due diligence, and user protection, reinforcing a co-regulatory framework alongside oversight by the Financial Services Commission and the Financial Supervisory Service[111].

8. Middle East and North Africa

The MENA region has become one of the most institutionally advanced for digital assets, led by the UAE's federated regulatory architecture. The Central Bank of the UAE governs fiat-backed stablecoins through its Payment Token Services Regulation, while VARA in Dubai has introduced comprehensive frameworks for exchanges, custodians, and crypto derivatives[112]. The UAE is building regulated infrastructure for near-instant conversion between dirham and dollar stablecoins, targeting institutional treasury and cross-border payment use cases.

Saudi Arabia has accelerated tokenisation pilots under its Capital Markets Authority, and Qatar's Financial Centre has established rules for tokenisation and smart contracts alongside a wholesale CBDC infrastructure programme. Turkey has enacted mandatory licensing and capital requirements for crypto asset service providers in 2024 under its Capital Markets Board, aligning with FATF standards. Morocco is advancing a draft crypto regulatory law through public consultation, modelled closely on MiCA, in response to FATF recommendations[113].

9. Latin America

Regulatory development across Latin America has been shaped heavily by macroeconomic realities, particularly currency volatility and high inflation, that have made stablecoins a

[110] Vardai, Z. (2026, May 15). South Korea plans July rules for tokenized securities. Cointelegraph. https://cointelegraph.com/news/south-korea-announce-tokenized-securities-laws-july
[111] Digital Asset eXchange Alliance. (2025, December 3). DAXA self-regulatory proposals. https://www.kdaxa.org/en/support/regulation.php
[112] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf
[113]Levush, R. (2026, March 12). Recent legal developments in cryptocurrency and virtual asset regulation in UAE, Jordan, and Morocco. In Custodia Legis. https://blogs.loc.gov/law/2026/03/recent-legal-developments-in-cryptocurrency-and-virtual-asset-regulation-in-uae-jordan-and-morocco/

practical financial tool for large segments of the population. Brazil's legal framework for virtual assets, in force since 2023 and supplemented by VASP authorisation requirements effective February 2026, is the region's most comprehensive, covering asset segregation, proof of reserves, and consumer protection. Brazil's central bank has also explicitly prohibited the use of crypto in regulated cross-border payment channels, reflecting a dual approach of normalising the industry while preserving monetary policy control.

Argentina's National Securities Commission has created a VASP registry and enabled tokenised real-world asset issuance through successive regulatory resolutions, and has proposed restrictions on crypto payment rails for unauthorised gambling platforms. The Argentine Securities and Exchange Commission (CNV) now recognizes crypto asstes as assets that can be considered part of an individual's net worth to qualify as an investor[114]. El Salvador continues to operate under its foundational Bitcoin Law, with the National Commission of Digital Assets overseeing public digital asset offerings and service provider licensing.

10. Africa

Africa's regulatory trajectory is being shaped by the imperative to align rapidly growing grassroots adoption with FATF AML/CFT standards. Nigeria's SEC has enforced its digital asset rules, and improved inter-agency coordination contributed to Nigeria's removal from the FATF grey list in 2025[115]. Kenya enacted its Virtual Asset Service Providers Act in October 2025, mandating licensing for exchanges, wallet providers, and brokers under National Treasury oversight[116]. South Africa implemented the FATF Travel Rule for crypto asset transfers from April 2025[117]. Rwanda passed its first digital asset legal framework, with the Capital Markets Authority now drafting secondary regulations to operationalise a licensing regime covering exchanges, custodians, and conversion platforms, with each asset subject to independent review before approval. Morocco is at the consultation stage for a MiCA-inspired framework coordinated between the Ministry of Finance, Bank Al-Maghrib, and the capital markets authority.

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[114] Comisión Nacional de Valores. (2026, 7 de abril). Resolución General 1125/2026 [RESGC-2026-1125-APN-DIR#CNV]. Boletín Oficial de la República Argentina. https://www.boletinoficial.gob.ar/detalleAviso/primera/340413/20260407

[115]Timi-Koleolu, S., Sogbesan, E., Malumbe, O., & Ngarama, F. (2026, April 17). Virtual Asset Service Provider (VASP) licences in Kenya & Nigeria - what you need to know. Mondaq. https://www.mondaq.com/nigeria/fintech/1777420/virtual-asset-service-provider-vasp-licences-in-kenya-nigeria-what-you-need-to-know

[116] Ibid.

[117] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

CHAPTER E

Evolving Tokenomics: Real-World Assets (RWAs) and Stablecoins

1. Mitigating Dollarization: The Role of Fiat-Backed Stablecoins

1.1 The Scale of Dollar-Pegged Stablecoin Dominance

The global stablecoin market has fundamentally expanded beyond its origins as a niche trading utility, evolving into a foundational pillar of the global digital payments landscape and effectively functioning as a parallel digital dollar system. By the end of 2025, the total stablecoin market capitalization decisively surpassed the $300 billion milestone, led primarily by Tether (USDT) and Circle's USD Coin (USDC)[118].

The sheer scale of their utilization is staggering. Between January and June 2025 alone, stablecoins processed an adjusted transaction value of nearly $12.7 trillion, routinely exceeding $2 trillion in monthly transfer volumes[119]. Crucially, over 98% of this circulating supply is pegged to the U.S. dollar, effectively transforming the dollar from a traditional reserve asset into a borderless digital reserve network[120]. This positions USD-pegged stablecoins not merely as speculative crypto instruments, but as structural infrastructure for cross-border settlement, DeFi protocols, and on-chain commerce.

1.2 Cryptoization and Macroeconomic Risks for Emerging Market and Developing Economies

For EMDEs, this unprecedented proliferation of foreign currency-pegged stablecoins poses severe macroeconomic vulnerabilities, a phenomenon the IMF and the FSB identify as "cryptoization" or currency substitution[121].

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[118]Werbach, K. (2026, February 27). Stablecoins are gaining momentum, but key questions are still unanswered. World Economic Forum. https://www.weforum.org/stories/2026/02/new-research-answers-fundamental-questions-about-stablecoins/

[119]Chainalysis Team. (2025, September 17). From ETFs to Treasuries: How The U.S. Is Shaping Digital Finance. Chainalysis Blog. https://www.chainalysis.com/blog/north-america-crypto-adoption-2025/

[120] Bank for International Settlements (BIS). (2026). The impact of stablecoins on the international monetary and financial system. https://www.bis.org/publ/bppdf/bispap170.htm

[121] Bank for International Settlements (BIS). (2026). Financial stability risks from cryptoassets in emerging market economies.https://www.bis.org/publ/bppdf/bispap138.pdf

In economies grappling with high inflation or weak monetary institutions, stablecoins offer a highly liquid, borderless alternative, leading citizens and businesses to rapidly displace the local fiat currency as a preferred store of value and medium of exchange. This widespread substitution severely impairs a central bank's capacity to implement effective monetary policy, manage domestic liquidity, and control inflation[122]. Furthermore, because stablecoins operate on decentralized peer-to-peer networks, they strain existing capital flow management measures (CFMs), enabling the circumvention of foreign exchange rules and amplifying the risk of rapid capital flight during periods of economic stress.

1.3 India's Wait-and-Watch Approach and the Push for CBDCs

India has not yet introduced a dedicated licensing framework for private stablecoins. Policymakers have instead prioritised the development of the e-Rupee pilot while continuing to study the implications of privately issued stablecoins through ongoing inter-regulatory consultations.

Recently, the Finance Ministry placed an indefinite hold on a highly-awaited Department of Economic Affairs (DEA) discussion paper regarding stablecoin regulation[123]. The timing and contours of any future stablecoin framework remain uncertain. While the RBI has consistently highlighted concerns relating to monetary sovereignty, financial stability, and capital flow management, recent public statements from RBI leadership indicate that policy work on digital asset regulation remains ongoing.

2. Evolving Approaches to Stablecoin Regulation

Despite differences in legislative design, some broad international consensus is emerging around the treatment of fiat-referenced stablecoins. This convergence is largely driven by the recommendations of the FSB, IOSCO, the Bank for International Settlements (BIS), and the FATF, all of which advocate a risk-based approach grounded in the principle of "same activity, same risk, same regulation"[124]. As a result, most major regulatory frameworks now seek to address a common set of concerns relating to reserve adequacy, redemption rights, operational resilience, governance, and financial crime compliance.

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[122] Ibid.

[123] Chatterjee, A., & Verma, P. (2026, April 1). India's cryptocurrency policy paper likely shelved for now amid RBI resistance. Moneycontrol. https://www.moneycontrol.com/news/business/india-s-cryptocurrency-policy-paper-likely-shelved-for-now-amid-rbi-resistance-13876766.html

[124] Yanney, A. A. S. (2025). Cross-border financial regulation and its influence on multinational business operations, tax structures and investment flows. World Journal of Advanced Research and Reviews, 26(3), 597-620.https://wjarr.com/sites/default/files/fulltext_pdf/WJARR-2025-2225.pdf

A central area of convergence concerns reserve management. Jurisdictions increasingly require stablecoin issuers to maintain reserves consisting of high-quality, liquid assets capable of supporting redemption requests during periods of market stress[125]. Regulatory frameworks in the European Union, Hong Kong, Singapore, the United States, and the United Arab Emirates all emphasize reserve quality, liquidity, segregation, and regular disclosure, although the specific asset eligibility criteria and prudential safeguards vary across jurisdictions[126].

A second area of growing consensus relates to redemption rights[127]. Policymakers have increasingly recognized that confidence in stablecoins depends on users' ability to redeem tokens at par value within a predictable timeframe[128]. Consequently, modern stablecoin frameworks generally impose obligations on issuers to establish clear redemption mechanisms, maintain adequate liquidity buffers, and provide transparent disclosures regarding redemption procedures and associated risks[129].

Asset segregation and insolvency protection have similarly become key regulatory priorities.[130] Recent legislative initiatives increasingly require reserve assets to be held separately from the issuer's proprietary assets, reducing the risk that customer funds may become entangled in insolvency proceedings[131]. These requirements seek to strengthen consumer protection while preserving confidence in stablecoin arrangements during periods of financial distress.

At the same time, important regulatory differences remain[132]. Jurisdictions continue to adopt varying approaches regarding issuer eligibility, permissible reserve composition, prudential

[125] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

[126] Gujarat National Law University. (2026, March). Crypto assets in India: Assessing the case for regulation (Abridged version). GNLU. https://gnlu.ac.in//Content/gnlu/pdf/odrd/Abridged%20Version_Report_Crypto%20Assets%20Project.pdf

[127] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

[128] Ibid.

[129] Guiding and Establishing National Innovation U.S. Stablecoins Act or GENIUS Act, No. Public Law No: 119-27, July 18, 2025 (U.S.), https://www.congress.gov/bill/119th-congress/senate-bill/1582/text.

[130] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

[131] Seerwani, P. Mohan, M.P. (2025) Working Paper: Virtual Digital Assets Service Providers under Indian Insolvency Framework. https://www.iima.ac.in/hindi/sites/default/files/2025-10/WP%20No.2025-10-01.pdf

[132] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

capital requirements, supervisory oversight, and the treatment of algorithmic stablecoins[133]. Some frameworks permit a broader range of regulated entities to issue stablecoins, while others restrict issuance to licensed financial institutions or specially authorized entities. Divergence also persists regarding the treatment of stablecoins used primarily for payments compared to those functioning principally as investment or trading instruments.

Beyond national regulatory initiatives, intergovernmental organisations have also begun developing legislative templates to support the regulation of stablecoins. In 2026, the Commonwealth Secretariat published a non-binding Model Law on Stablecoins[134] to assist member states in regulating the issuance, custody, reserve management, and oversight of fiat-referenced stablecoins. Developed through consultations with legal, financial, and technology experts from across the Commonwealth, the framework seeks to align stablecoin regulation with emerging international standards while providing sufficient flexibility for adaptation to local legal and financial systems[135].

Taken together, these developments suggest that stablecoin regulation is gradually transitioning from a fragmented collection of national initiatives towards a more coherent set of internationally recognized prudential principles. While substantial differences in implementation remain, global regulatory debates are increasingly centered not on whether stablecoins should be regulated, but on how prudential safeguards can be calibrated to support innovation while preserving financial stability, market integrity, and consumer protection.

[133] Ibid.

[134] Commonwealth Secretariat. (2026). The Commonwealth Model Law on Stablecoins. https://comsec-web-static.s3.eu-west-1.amazonaws.com/s3fs-public/2026-05/Model%20Law%20on%20Stablecoins.pdf?VersionId=LxEqBMXeP95E3WdC1KwDzIpJMlvtZYbX

[135] Commonwealth Secretariat. (2026). New Commonwealth model law to help countries regulate stablecoins https://thecommonwealth.org/news/new-commonwealth-model-law-help-countries-regulate-stablecoins

CHAPTER F

Progress of the e-Rupee (CBDC) Pilot

1. The e-Rupee in India: Pilot Progress and Regulatory Integration

1.1 The e-Rupee: India's Sovereign Digital Money and Pilot Progress

In contrast to its conservative posture toward private VDAs, the RBI is actively advancing the Digital Rupee (e-Rupee) as a sovereign form of digital money[136]. As a direct liability of the central bank, the e-Rupee carries the full faith and credit of the state, fundamentally distinguishing it from decentralized crypto-assets. To rigorously test this infrastructure, the RBI has scaled extensive wholesale and retail pilot programs[137].

The wholesale CBDC pilot targets interbank and securities settlement, primarily focusing on achieving settlement finality and mitigating settlement risks without the need for a central counterparty. To further this, the RBI is advancing the UMI, a next-generation financial market infrastructure capable of tokenizing financial assets and settling transactions using the wholesale CBDC[138]. As per latest available records, the e-Rupee boasts 1 crore users as of June 2026, with nearly 15 crore total transactions of about ₹34,000 crore[139].

Simultaneously, the retail pilot, launched in December 2022, has expanded to encompass 19 banks and 7 million users[140]. The retail pilot actively explores features designed to advance financial inclusion, such as offline functionality to allow e-Rupee transactions in remote areas

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[136] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition'
https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

[137] Reserve Bank of India (RBI). (2026). Edited Transcript of the Reserve Bank of India's Post-Monetary Policy Press Conference: April 8, 2026 (Wednesday).
https://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=1551

[138] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition'
https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

[139] Reserve Bank of India (RBI). (2026). Edited Transcript of the Reserve Bank of India's Post-Monetary Policy Press Conference: April 8, 2026 (Wednesday).
https://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=1551

[140] Reserve Bank of India (RBI). (2025). Driving Inclusive and Sustainable Growth Through Digital Public Infrastructure and FinTech (Keynote Address by Shri Sanjay Malhotra, Governor, Reserve Bank of India - October 8, 2025 - at the Global Fintech Fest 2025, Mumbai)
https://rbi.org.in/scripts/BS_SpeechesView.aspx?Id=1525

with limited internet connectivity[141]. A major focus is "programmability", which enables condition-based or purpose-restricted disbursements. The RBI is already testing this to deliver targeted welfare: Gujarat is utilizing programmable e-Rupees for livelihood assistance restricted to agricultural inputs[142]; Puducherry will credit food subsidy to identified beneficiaries in the form of CBDC tokens[143]; and Odisha's Subhadra Yojana has successfully routed payments to around 88,000 beneficiaries via the e-Rupee[144]. To accelerate development, the RBI also launched a retail CBDC sandbox in October 2025, opening the infrastructure to fintech firms.

1.2 Reporting Framework Integration (FATCA and CRS)

As CBDCs transition from pilots to integrated financial tools, India has proactively updated its compliance architecture to encompass sovereign digital currencies. As discussed in earlier sections, the rules revised by CBDT in 2026 formally expanded the statutory definition of "financial assets" to explicitly include CBDCs alongside private crypto-assets and electronic money products. By incorporating CBDCs into this global reporting ecosystem, India ensures that cross-border tax transparency keeps pace with the digitisation of sovereign money.

1.3 Deliberate Legislative Separation from Private VDAs

Despite their shared underlying technological concepts, Indian tax and regulatory frameworks make a deliberate legislative distinction between the e-Rupee and private VDAs. Under Section 2(47A) of the Income-tax Act, which defines a "Virtual Digital Asset", Indian and foreign fiat currencies are explicitly excluded[145].

This is a deliberate policy choice reflecting the e-Rupee's fundamentally different legal and monetary character as a sovereign fiat representation, rather than an independent, private asset. Crucially, this separation ensures that the punitive tax architecture, specifically the 30% flat tax on capital gains and the 1% TDS designed to monitor and deter speculative trading in private VDAs, is not inadvertently applied to the state's own monetary instrument while preserving the

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[141] Reserve Bank of India (RBI). Digital Rupee (e₹) – FAQs
https://www.rbi.org.in/commonman/english/scripts/FAQs.aspx?Id=3686

[142] Press Information Bureau (PIB). (2026, February 15). Government of India launches CBDC-based Digital Food Coupon Pilot in Gujarat
https://www.pib.gov.in/PressReleasePage.aspx?PRID=2228470&reg=3&lang=1

[143] Press Information Bureau (PIB). (2026, February 25).CBDC-Based Food Subsidy Distribution Pilot under PMGKAY to be Launched in Puducherry
https://www.pib.gov.in/PressReleasePage.aspx?PRID=2232780&reg=6&lang=1

[144] Sidhartha. (2024) Subhadra first govt scheme to offer digital rupee payment
https://timesofindia.indiatimes.com/business/india-business/subhadra-first-govt-scheme-to-offer-digital-rupee-payment/articleshow/113437252.cms. The Times of India

[145] Income-tax Act, 1961, § 2(47A) (India).

e-Rupee's utility as a frictionless, low-cost mainstream payment tool meant to complement the UPI.

2. Global CBDC Developments: A Comparative Overview

2.1 Global Momentum and Multilateral Coordination

The development of India's e-Rupee is occurring amidst a massive global transformation in sovereign money. Recognizing that digital monetary infrastructures will fundamentally reshape cross-border finance, the IMF and the FSB are actively monitoring the systemic implications of digital assets and CBDCs on the international monetary system[146]. These standard-setting bodies are strongly advocating for global cooperation to ensure that emerging CBDC networks are designed from the ground up with interoperability, macroeconomic stability, and stringent AML/CFT compliance as foundational requirements.

Crucially, the BIS Innovation Hub has assumed a central coordinating role in bridging isolated national projects. The BIS is facilitating extensive multi-CBDC experiments across jurisdictions to rigorously test cross-border interoperability, atomic settlement efficiency, and resilience under stress conditions. Landmark initiatives like Project Agorá (testing unified tokenized platforms for cross-border payments across seven central banks) and Project mBridge (which saw transaction volumes surge to $55.49 billion) represent critical steps toward establishing programmable, always-on cross-border settlement rails.

2.2 Regional and National Implementations

Currently, there are 41 CBDC pilot projects active around the world, with every G20 country, except the United States, exploring a CBDC. While early enthusiasm centered on retail (public-facing) applications, advanced economies are increasingly retreating from retail CBDCs to double down on wholesale (interbank) infrastructure[147].

Several jurisdictions highlight this strategic pivot and the diverse approaches to implementation[148]:

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[146] International Monetary Fund (IMF).(2025) Central Bank Digital Currency (CBDC) Virtual Handbook https://www.imf.org/en/topics/digital-payments-and-finance/central-bank-digital-currency/virtual-handbook

[147] Atlantic Council. (2026). Central Bank Digital Currency Tracker. https://www.atlanticcouncil.org/cbdctracker/

[148] PwC. (January 2026). 'PwC Global Crypto Regulation Report 2026: Navigating the Global Landscape, the 4th edition' https://www.pwc.de/de/unterlagen/pwc-global-crypto-regulation-report-2026.pdf

- Israel: The Bank of Israel has advanced its Digital Shekel project through extensive design considerations, emphasizing privacy, resilience, and competition. It actively collaborated with the BIS Innovation Hub on Project Sela to test a retail CBDC architecture that limits intermediaries' exposure to end-user funds while maintaining strict AML/CFT controls.

- Canada: Following extensive research, the Bank of Canada has scaled down its work on a retail CBDC, pivoting instead toward privacy-preserving designs and broader payments system interoperability, while remaining prepared to deploy a digital dollar only if required by future market conditions.

- Hong Kong: Hong Kong has aggressively pursued wholesale applications through Project Ensemble, which tests a wholesale CBDC (wCBDC) as the risk-free settlement layer for tokenized assets to achieve true Delivery versus Payment (DvP). Concurrently, the jurisdiction implicitly deprioritized its retail e-HKD initiative after an 11-group pilot found the retail use case to be weak[149].

- United Arab Emirates: The UAE's Central Bank (CBUAE) is advancing the Digital Dirham under its Financial Infrastructure Transformation (FIT) Programme. The current pilots are heavily focused on wholesale and government payments, notably integrating with the BIS-led Project mBridge for cross-border settlement, while treating retail use cases as a longer-term objective.

2.3 The US Counter-Approach: Prohibition and Private Stablecoins

In stark contrast to the overwhelming global momentum toward sovereign digital currencies, the United States has adopted a policy of active prohibition. The U.S. remains a notable outlier among its G20 peers. In January 2025, the U.S. administration issued Executive Order 14178, which explicitly prohibits federal agencies from establishing, issuing, or promoting a CBDC within the United States.

Rather than developing a state-controlled CBDC, the U.S. strategy heavily relies on the private sector. By legitimizing these private, USD-backed tokens issued by supervised entities, the United States is strategically leveraging private stablecoins as the primary vehicle to maintain and extend dollar dominance in global digital payments. This approach allows the U.S. to modernize its currency's reach via decentralized infrastructure without assuming the perceived

[149]Hong Kong Monetary Authority. (2025, October 28). HKMA completes e-HKD Pilot Programme and outlines future direction of e-HKD [Press release]. https://www.hkma.gov.hk/eng/news-and-media/press-releases/2025/10/20251028-4/

national security and privacy risks of direct government control over individual transaction data.

CHAPTER G

Emerging Web3 Concerns

1. Assessing the Threat of Quantum Computing to Web3 Cryptography

1.1 The Paradigm Shift of Quantum Computing

As the global VDA and Web3 ecosystem matures, it faces a novel and potentially existential cybersecurity threat: the rapid advancement of quantum computing.

A paper recently published by Google Quantum AI demonstrates that a Cryptographically Relevant Quantum Computer (CRQC) could break Bitcoin's elliptic curve cryptography with far fewer resources than previously estimated[150]. Unlike traditional computers that process information sequentially using bits (0s and 1s), QRQCs leverage the principles of quantum mechanics, specifically superposition and entanglement, to process vast arrays of possibilities simultaneously[151]. While this exponential processing power promises transcendent leaps in portfolio optimization, fraud detection, and complex financial calculations, it also poses an unprecedented risk to the classical cryptographic protocols that secure modern digital infrastructure.

Governments and major technology firms are accelerating quantum development backed by multi-billion-dollar national programs. A watershed moment occurred when Google unveiled its 105-qubit "Willow" quantum processor, which reportedly completed benchmark computations in minutes that would take classical supercomputers significantly longer[152]. Accompanied by other major strides, such as IBM's roadmap for large-scale fault-tolerant systems and Microsoft's topological "Majorana 1" chip, the realization of a cryptographically

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[150] Babbush, R., Zalcman, A., Gidney, C., Broughton, M., Khattar, T., Neven, H., Bergamaschi, T., Drake, J., & Boneh, D. (2026, March 30). Securing Elliptic Curve Cryptocurrencies against Quantum Vulnerabilities: Resource Estimates and Mitigations [White paper]. Google Quantum AI. https://quantumai.google/static/site-assets/downloads/cryptocurrency-whitepaper.pdf

[151] CoinDesk. (2026, April 18). How a quantum computer can be used to actually steal your bitcoin in 9 minutes. https://www.coindesk.com/tech/2026/04/18/how-a-quantum-computer-can-be-used-to-actually-steal-your-bitcoin-in-9-minutes

[152] MediaNama. (2026, May). RBI forms Q-SAFE quantum technology committee. https://www.medianama.com/2026/05/223-rbi-forms-q-safe-quantum-technology-committee/

capable quantum computer is no longer a theoretical distant future, but a rapidly approaching reality[153].

1.2 The Cryptographic Risk to Distributed Ledger Technology

Distributed ledger technology (DLT) and the broader digital asset system rely fundamentally on classical cryptographic protocols. Specifically, they depend on elliptic curve cryptography (ECC) to generate digital signatures and secure user wallets, alongside highly complex hash-based functions that maintain block chaining and consensus integrity[154].

The primary vulnerability lies in the fact that fault-tolerant quantum computers of sufficient scale will be capable of breaking elliptic curve discrete logarithm problems[155]. By deploying advanced quantum algorithms (such as Shor's algorithm[156]), an adversary could successfully derive a user's private key directly from their exposed public key, in as little as nine minutes[157]. This would enable malicious actors to forge digital signatures, effectively impersonate wallet owners, drain funds, and fundamentally compromise the immutability and integrity of the blockchain.

This threat is further exacerbated by the "steal now, decrypt later" (SNDL) strategy[158]. As warned by the World Federation of Exchanges, attackers are already harvesting and hoarding encrypted financial data and transaction records with the intention of decrypting them once

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[153] Ibid.

[154] Babbush, R., Zalcman, A., Gidney, C., Broughton, M., Khattar, T., Neven, H., Bergamaschi, T., Drake, J., & Boneh, D. (2026, March 30). Securing Elliptic Curve Cryptocurrencies against Quantum Vulnerabilities: Resource Estimates and Mitigations [White paper]. Google Quantum AI. https://quantumai.google/static/site-assets/downloads/cryptocurrency-whitepaper.pdf

[155] CoinDesk. (2026, April 18). How a quantum computer can be used to actually steal your bitcoin in 9 minutes. https://www.coindesk.com/tech/2026/04/18/how-a-quantum-computer-can-be-used-to-actually-steal-your-bitcoin-in-9-minutes

[156] Shor's algorithm is a quantum computing method that efficiently calculates the prime factors of large numbers to solve discrete logarithms. It poses an existential threat to modern cryptography, including the Elliptic Curve (ECC) and RSA encryption that secure Bitcoin and other blockchain wallets. A theoretical quantum computer running Shor's algorithm could reverse the trapdoor math underlying current digital signatures. This would allow bad actors to derive a user's private key directly from their exposed public key, enabling them to steal funds outright.

[157] Ibid.

[158] Babbush, R., Zalcman, A., Gidney, C., Broughton, M., Khattar, T., Neven, H., Bergamaschi, T., Drake, J., & Boneh, D. (2026, March 30). Securing Elliptic Curve Cryptocurrencies against Quantum Vulnerabilities: Resource Estimates and Mitigations [White paper]. Google Quantum AI. https://quantumai.google/static/site-assets/downloads/cryptocurrency-whitepaper.pdf

sufficiently powerful quantum technology becomes available[159]. This reality, highlighted by recent milestones like Google's Quantum AI study, has spurred an industry-wide discussion acknowledging the absolute urgency of migrating toward a post-quantum security architecture before existing cryptographic standards are rendered obsolete[160].

1.3 India's Proactive Institutional Response: The Q-SAFE Committee

Recognizing the systemic urgency of this threat to both traditional banking and emerging blockchain infrastructure, the RBI has demonstrated a proactive institutional response. On May 25, 2026, the RBI formally constituted the Quantum Secure and Adaptive Financial Ecosystem (Q-SAFE) expert committee[161].

The Q-SAFE committee will bring together a high-level coalition of experts from the Department of Science & Technology (DST), the National Payments Corporation of India (NPCI), the Ministry of Electronics and Information Technology (MeitY), the Data Security Council of India (DSCI), and academia[162]. Its core mandate is to thoroughly examine the opportunities and risks posed by quantum technology within the financial sector, evaluating the industry's preparedness for adopting quantum-safe cryptography[163].

Crucially, the committee is tasked with evaluating the financial sector's cryptographic inventory through a Cryptography Bill of Materials (CBOM)[164]. By assessing "crypto agility," the RBI aims to pinpoint which critical systems and processes are most vulnerable to quantum decryption threats. The committee's final objective is to recommend a comprehensive roadmap and framework to quantum-secure the Indian financial system. For the VDA industry, the outcomes of the Q-SAFE committee will likely inform future supervisory guidance and minimum cybersecurity thresholds for VDA entities operating in India.

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[159] World Federation of Exchanges. (2026, January 14). The WFE calls on regulators to balance quantum computing risks against more immediate operational challenges [Press release]. https://www.world-exchanges.org/news/articles/wfe-calls-regulators-balance-quantum-computing-risks-against-more-immediate-operational-challenges

[160] BTQ Technologies Corp. (2026, April 2). Google urges migration to post-quantum cryptography without delay. BTQ Blog. https://www.btq.com/blog/google-urges-migration-to-post-quantum-cryptography-without-delay

[161] MediaNama. (2026, May). RBI forms Q-SAFE quantum technology committee. https://www.medianama.com/2026/05/223-rbi-forms-q-safe-quantum-technology-committee/

[162] Reserve Bank of India. (2026, May 25). Quantum Secure and Adaptive Financial Ecosystem (Q-SAFE) – Setting up of an Expert Committee (Press Release No. 2026-2027/325). https://www.medianama.com/wp-content/uploads/2026/05/PR325298C71A0A576448B994AF2D9F3F97A59.pdf

[163] Ibid.

[164] Ibid.