The Bretton Woods Committee

No. 10 • FEBRUARY 2026

This brief is part of a series produced by the Digital Finance Project Team (DFPT) of the Bretton Woods Committee's Future of Finance Working Group (FFWG)

A Global Framework for Tokenized Assets

By Gregory C. Johnson, Rashad Ahmed, David Cervantes, Michael Hsu, William A. Peracchio, and Shachi Sayata

INTRODUCTION

In the last five years, digital assets have risen to prominence globally. Their transformative potential has been widely acknowledged. Tokenization facilitates financial asset digitalization with significant potential benefits, ranging from faster and lower-cost transactions and reduced settlement risk to greater ease of use, data privacy, and consumer protection from fraud. In the financial realm, tokenization creates a digital representation of a financial asset such as a bank deposit, a stablecoin, an equity or fixed-income asset, or a derivative obligation. Such tokenized assets are represented on a blockchain or distributed ledger. Tokenized assets other than stablecoins will be the focus of this paper.

Tokenization generates both benefits and risks. Through blockchain and distributed ledger technologies (DLTs), tokenization extends financial markets to programmable assets, fractional ownership structures, near-instantaneous settlement, and continuous global market access. However, tokenization also introduces new technical vulnerabilities: the risk of increasingly fast financial spillovers and governance challenges that can result in permanent asset loss.

To facilitate effective tokenization, regulators must establish clear, fit-for-purpose standards and legal frameworks that provide regulatory certainty while fostering innovation. Current initiatives at the national level around the world include developing comprehensive consumer protection mechanisms, systemic risk monitoring, and coordination. Policy makers are also exploring whether and how to safeguard financial stability through appropriate capital requirements amid rising concerns that lack of cross-border policy coordination could create a "race to the bottom." Finding ways to facilitate interoperability will be crucial to preserving the benefits of financial tokenization.

Crucially, this paper adopts an outcomes-based approach, differentiating among the major types of tokenized services—from payments to investment securities—to analyze the benefits, the risks, and the regulatory regime that might best manage the trade-offs between safety and soundness and innovation as well as

between national sovereignty and international harmonization. The paper begins by defining the concept of tokenization. It then explores some of the benefits and associated risks, followed by an overview of the different regulatory approaches that are being implemented around the world. The concluding section outlines how regulators can best unlock the potential of tokenization.

We conclude that the Bank for International Settlements (BIS), International Monetary Fund (IMF), and World Bank (WB) each have an important role to play. The BIS and IMF must continue acting as trusted international convening forums and knowledge clearinghouses. The WB must ensure that developing economies are not left behind and are also able to reap tokenization's potential benefits.

Overall, regulators will need to ensure interoperability as sovereign states make diverging policy choices. It will not be easy. Policy makers seeking to advance interoperability priorities will need to balance global coordination and cooperation against domestic priorities. Information access will be key. It is crucial for policy makers to have access to quality and timely data in order to understand flows and make data-driven policy decisions based on that information. Policy makers requiring access to data from tokenization initiatives include both regulators and central banks, which can create complex but surmountable problems for economies that accept the fundamental role of the central bank. Relatedly, liquidity provisions that form the bedrock of economic functioning will need to evolve operationally in a tokenized world.

1. DEFINING THE CONCEPT

Tokenization is the broad concept of representing an item digitally. This paper specifically addresses on-chain digital assets. In this context, tokenization articulates ownership or rights to an asset represented on a blockchain or other ledger in digital form that can be programmed, transferred, and managed through automated processes. The digital token itself functions as a cryptographic representation linked to a claim of ownership or entitlement. When functioning at maximum efficiency, tokenized assets are subject to the legal and contractual framework governing the underlying asset. Although not all tokenization involves enforceable rights, in principle, a tokenized asset can be verified, transferred, and tracked across distributed networks. Consequently, smart contracts can be used to automate transactions and compliance.

DLT places pressure on some traditional concepts of property and regulatory law, as discussed in box 1.

Broadly, tokenized assets can be systematically categorized into three distinct classes:

- **Real-world asset tokens** represent traditional off-chain assets, including real estate, commodities, bank deposits, and securities. These tokens require legal and custodial frameworks to maintain the connections between the digital representations and the underlying physical or legal assets.
    - Examples: Asset-backed tokens (e.g., tokenized real estate or gold), tokenized twins or synthetic mirrors (i.e., blockchain representations of traditional securities), and stablecoins[1]

1 Stablecoins are sometimes grouped within this category, insofar as they reference off-chain assets, although many regulatory frameworks treat them as monetary instruments rather than asset tokens. Because stablecoins have been the focus of another Bretton Woods Committee paper, they will be outside the purview of this paper.

- **Blockchain-native financial instruments** replicate established financial products, such as bonds, structured products, and debt securities, but they are issued, traded, and settled entirely on-chain. These instruments are natively digital and leverage blockchain-enabled automation capabilities.
    - Examples: Digital native bonds (e.g., UBS CHF 375 million digital bond),[2] on-chain structured products (e.g., Ribbon Finance DeFi Options Vaults),[3] on-chain debt instruments (e.g., Maple Finance loans),[4] and central bank digital currencies
- **Crypto-native digital assets** comprise entirely novel asset classes with no close one-to-one analogues in traditional finance, though some features resemble traditional financial claims. These assets exist exclusively within digital ecosystems and are enabled by the unique properties of decentralized networks.
    - Examples: Distributed finance (DeFi) liquidity provider tokens, governance tokens, yield-bearing non-fungible tokens, and native tokens such as SOL or ETH

The characterization of a tokenized product holds important implications for the rules that will govern its use. Furthermore, the form in which the technology is deployed matters. Whether an asset is tokenized on a permissioned (restricted access) versus permissionless (open access) network, or even using a non-DLT database, changes the nature of governance, legal clarity, and settlement finality.

Currently, a patchwork of individual national regulatory regimes creates different standards for the regulation and governance of tokenization globally. Stated simply: no two national frameworks are the same. Before describing those differences, we will first discuss why governments and regulators seek to capture the benefits and address the risks associated with this asset class.

Box 1. Defining tokenized assets

Definitions can vary depending on the tokenization structure. For example, a tokenized security, a tokenized deposit, and a tokenized derivative constitute economically and legally distinct tokenization assets.[5] It is especially important to be precise in a legal context. The International Swaps and Derivatives Association's legal committee has published a good general definition of tokenization: "'tokenization' broadly refers to a *technological* and *legal process* of attaching *enforceable rights to entries* in a *DLT-based system.* In this context, a 'token' is represented by *data* recorded in such a system"[6] (emphasis added).

Another fundamental legal aspect of tokenization is how any applicable regulatory frameworks will apply to the tokens. The financial marketplace is highly regulated; the characterization of a tokenized product or transaction holds important implications for the rules that parties will need to observe. Finally, legal systems and financial authorities continue to grapple with the challenge of how best to advance the fundamental objectives of market regulation in the context of new financial instruments and market structures represented by tokenized assets. While the objectives of market integrity, investor protection, and systemic safety have been top priorities of many jurisdictions, authorities have sought to achieve these objectives in varied ways.

2 UBS Media, "UBS AG Launches the World's First Digital Bond That Is Publicly Traded and Settled on Both Blockchain-Based and Traditional Exchanges," press release, November 3, 2022, https://www.ubs.com/global/en/media/display-page-ndp/en-20221103-digital-bond.html.
3 "Introduction to Ribbon Finance," Ribbon Finance, September 27, 2023, https://docs.ribbon.finance/.
4 Sidney Powell, "Maple (MPL): Crypto-Capital Network," *Cryptopedia*, October 15, 2023, https://www.gemini.com/cryptopedia/maple-finance-crypto-mpl-token-maple-token-mpl-crypto.
5 Commodity Futures Trading Commission, "CFTC's Global Markets Advisory Committee Advances 3 Recommendations," press release, March 7, 2024, https://www.cftc.gov/PressRoom/PressReleases/8873-24.
6 Ibid.

2. BENEFITS AND RISKS

Tokenization adoption holds distinct implications for different financial system participants:

- **Investors** gain access to fractional ownership opportunities, enhanced liquidity, continuous market access, and reduced counterparty risk from smart contract execution.
- **Issuers** can access expanded capital markets, accelerate settlement time frames, and reduce intermediary dependence.
- **Market infrastructure providers,** including exchanges and platforms, can expand service offerings and develop new revenue streams.
- **Regulatory authorities** may benefit from enhanced transaction transparency and traceability, depending on system design and access rights.

The technology also introduces new risk categories, including the potential for smart contract failures, network congestion, and governance attacks. Most critically, because tokenization transcends traditional jurisdictional boundaries, it creates new opportunities for regulatory arbitrage and makes consistent compliance and enforcement more difficult.

Moreover, the speed of financial flows would certainly accelerate in a world where atomic settlement became the norm for wholesale transactions. Such increased transaction velocity, with assets moving at the speed of light, creates unique and important challenges for central banks seeking to act as credible lenders of last resort.

In addition, although distributed ledgers may provide immutable records of transactions, it remains very much open to debate whether and how much access to transaction-level information might be available to economic policy makers. If they cannot see the information, then their ability to perform their roles will be compromised.

Asset tokenization also will increase cross-border economic engagement, potentially constraining traditional domestic policy tools and heightening the need for timely and coordinated risk management by public authorities. Policy makers will still be viewed as accountable at the national level even when bad actors, technological failures, or flash crashes abroad create local economic losses. Effective crisis prevention and mitigation therefore depend not only on legal mandates but also on relationships and communication frameworks. This requires building new structures now, or at least maximizing the utility of existing cross-border communication structures, before systemic stress points become five-alarm fires. The ability to realize tokenization's promise to reduce costs and increase access requires addressing these regulatory coordination challenges.

3. THE CURRENT REGULATORY STATE OF PLAY

Policy Choices

Overall, three initial frameworks are emerging from policy makers:

- **Fully decentralized private-sector distributed ledgers:** Various U.S. initiatives seek to accelerate the capacity of individuals to allocate capital and transact business on potentially a multitude of distributed ledgers. Pending legislation in Congress focuses on capital market[7] structure, while the GENIUS Act ensures the transfer of value[8] through stablecoins. None of the U.S. legislative or regulatory initiatives would create a national government-sponsored ledger.

  The policy implications of this choice are clear to experts in the field. The European Central Bank (ECB) and the BIS have been ringing alarm bells

7 See the Digital Asset Market Clarity Act of 2025, H.R. 3633, 119th Congress (2025–2026), https://www.congress.gov/bill/119th-congress/house-bill/3633.

8 See the GENIUS Act, S. 1582, 119th Congress (2025–2026), https://www.congress.gov/bill/119th-congress/senate-bill/1582.

regarding the potential adverse impact on monetary policy transmission effectiveness if financing flows were to shift at scale to distributed ledgers. If economic activity shifts to private-sector distributed ledgers at scale—which some proponents anticipate—the centrality of the central bank in the economy will erode.[9]

- **Fully unified ledger:** The BIS,[10] the ECB,[11] and the People's Bank of China (PBOC)[12] have expressed interest in or explored a unified ledger maintained by a central bank and/or the BIS that retains the role of the central bank and commercial banks at the core of financial flows. Support for such structures depends critically on whether participants trust that the central bank will implement standards to protect individual privacy. The most robust debate so far has focused on issues involving digital currencies. However, the trust issues may expand when tokenization includes bank deposits, securities, real estate transactions, and the cross-border trade of goods and services.
- **Hybrid ledger:** The Bank of England currently is pursuing a hybrid approach. It favors a centralized ledger managed and operated by a private-sector third party in order to avoid the difficult issues associated with potential government access to individual transaction data.

Tokenization implementation for official-sector entities involves critical architectural decisions, including the distinction between on-chain and off-chain processes, the choice between permissioned and permissionless networks, and the underlying blockchain infrastructure (e.g., private versus public blockchains). These architectural decisions collectively determine the balance between control, transparency, efficiency, and accessibility that tokenized assets can achieve, making the selection of appropriate blockchain infrastructure crucial for realizing tokenization's full potential in different financial contexts.

At the same time, coordination across jurisdictions could not be more critical. Greater coordination supports shared learning and lays the groundwork for broader regulatory harmonization and interoperability. The success of tokenization in financial services thus requires clarity and alignment so that policy makers and market participants both can assess the benefits and risks of any given asset tokenization initiative and potential systemic implications. However, architectural decisions reflect core beliefs in each jurisdiction regarding the appropriate balance between public and private interests. It may not be possible to reconcile all such issues on a cross-border basis, particularly in the short term. The immediate goal should not be to force a choice among architecture models. Instead, the goal should be to foster a cooperative framework that allows policy makers to deliver interoperability among ledger frameworks in a manner that minimizes domestic risks while respecting the priorities of domestic constituencies.

Country Approaches

Only one common denominator exists for policy choices across jurisdictions: Policy makers globally have generally adopted a function-based approach. Specifically, existing financial regulations have been

9 Although proponents argue that a wholesale move to decentralized ledgers is only a matter of time, several publications have explored the nuances of that assertion. See, for example, Raphael Auer, Cyril Monnet, and Hyun Song Shin, "The Economics of Distributed Ledgers and the Limits of Decentralised Money," Center for Economic Policy Research, April 9, 2025, https://cepr.org/voxeu/columns/economics-distributed-ledgers-and-limits-decentralised-money; Raphael Auer, Cyril Monnet, and Hyun Song Shin, "Distributed Ledgers and the Governance of Money," BIS Working Papers No. 924 (Bank for International Settlements, Basel, Switzerland, January 2021), https://www.bis.org/publ/work924.pdf.

10 "Blueprint for the Future Monetary System: Improving the Old, Enabling the New," in *BIS Annual Economic Report 2023* (Basel, Switzerland: Bank for International Settlements, June 20, 2023), https://www.bis.org/publ/arpdf/ar2023e3.htm.

11 Piero Cipollone, "Towards a Digital Capital Markets Union," keynote speech at Bundesbank Symposium on the Future of Payments, Frankfurt am Main, Germany, October 7, 2024, https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp241007~cc903db51d.en.html.

12 Heng Wang, "China's Approach to Central Bank Digital Currency: Selectively Reshaping International Financial Order?" *Asian Law Review* 18, no. 1 (2022): 77–134, https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?article=1090&context=alr.

applied to tokenized instruments whenever possible. Targeted pilot regimes or bespoke rules have been used to test new market infrastructure. There are, nonetheless, important differences across countries, reflecting existing legal institutions and legal frameworks, and varying risk tolerances.

European Union

In the European Union, tokenized securities are subject to the same rules as traditional financial instruments under the Markets in Financial Instruments Directive (MiFID) II and the Central Securities Depositories Regulation (CSDR). The EU's DLT Pilot Regime, introduced in 2023, offers a temporary framework for market participants to experiment with tokenized securities using DLT, but participants remain subject to the core MiFID II and CSDR requirements.[13]

The newly adopted Markets in Crypto-Assets Regulation (MiCA) introduces a comprehensive oversight regime for crypto assets (including but not limited to those issued on DLT) that fall outside the scope of MiFID II. MiCA creates new legal categories—asset-referenced tokens, e-money tokens, and other crypto assets—each with its own set of rules[14] governing authorization, disclosure, governance, and reserve requirement backing.

Hong Kong and Japan

Hong Kong and Japan have taken similar paths. Hong Kong's regulators—the Securities and Futures Commission and the Hong Kong Monetary Authority—jointly affirmed that tokenized securities remain subject to the same regulatory obligations as their traditional counterparts. A 2023 circular clarified that blockchain-based issuance or settlement does not alter the regulatory status of a financial instrument; these products must still comply with licensing, disclosure, and suitability requirements under the Securities and Futures Ordinance.[15] Under Japan's Financial Instruments and Exchange Act, tokenized securities are classified as "electronically recorded transferable rights" and are fully subject[16] to securities regulation.

Hong Kong's proposed stablecoin regime offers a clear example of a bespoke regulatory regime. Under the recently adopted legislation, only licensed fiat-referenced stablecoin issuers will be permitted to issue fiat-referenced stablecoins, a form of tokenized private money. The regime is explicitly designed[17] to address the risks of tokenized money, rather than fitting stablecoins into existing banking and payments frameworks.

Singapore

Similarly, the Monetary Authority of Singapore (MAS) applies existing financial laws based on the function of the token. If a tokenized product falls within the definition of a capital markets product under the Securities and Futures Act, it is regulated accordingly, regardless of whether it is issued or traded on a blockchain. Notably, MAS has also stated that tokenized commercial bank deposits are regulated as traditional deposits under the Banking Act, regardless of whether they are recorded on a DLT.[18]

---

13 "DLT Pilot Regime," European Securities and Markets Authority, accessed December 14, 2025. https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/dlt-pilot-regime.

14 Regulation (EU) 2023/1114 of the European Parliament and of the Council of 31 May 2023 on Markets in Crypto-Assets, and Amending Regulations (EU) No 1093/2010 and (EU) No 1095/2010 and Directives 2013/36/EU and (EU) 2019/1937 (Text with EEA Relevance), https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32023R1114.

15 "Circular on Intermediaries Engaging in Tokenised Securities-Related Activities," Securities and Futures Commission, November 2, 2023, https://apps.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=23EC52.

16 IMF Monetary and Capital Markets Department, *Japan: Financial Sector Assessment Program. Technical Note on Regulation and Supervision of Fintech*, IMF Country Report No. 24/116 (Washington, DC: International Monetary Fund, May 13, 2024), https://www.elibrary.imf.org/view/journals/002/2024/116/article-A001-en.xml.

17 Hong Kong Monetary Authority, "Government Welcomes Passage of the Stablecoins Bill," press release, May 21, 2025, https://www.hkma.gov.hk/eng/news-and-media/press-releases/2025/05/20250521-3/.

18 Ibid.

Switzerland

Switzerland is a leading example of a jurisdiction adapting current rules to new technology. The 2021 Distributed Ledger Technology Act introduced the concept of ledger-based securities, legally recognizing tokenized assets recorded on a blockchain as enforceable instruments. Swiss law[19] has been modified to allow blockchain-based custody, settlement, and exchange under the oversight of the Swiss Financial Market Supervisory Authority, known as FINMA.

The United Arab Emirates

Meanwhile, the United Arab Emirates (UAE) has developed a robust digital asset regulatory framework. Entities such as the Financial Services Regulatory Authority of Abu Dhabi, the Dubai Financial Services Authority, and the Dubai Virtual Assets Regulatory Authority oversee various aspects of crypto-asset activity, including tokenized securities, payment tokens, and service providers. The UAE has established detailed licensing, custody, and issuance standards designed specifically for digital and tokenized instruments.

The United Kingdom

The United Kingdom similarly seeks to articulate customized regulatory standards for individual types of tokenized assets. The Digital Securities Sandbox, launched in 2024, allows firms to test DLT-based infrastructure for trading, clearing, and settling tokenized securities under tailored exemptions from legacy rules such as those governing the Certificateless Registry for Electronic Share Transfer (CREST) system.[20] The Bank of England has pledged to articulate final regulatory standards regarding stablecoins[21] by year-end 2026 even as it works with the banking industry to identify appropriate regulatory standards to govern tokenized bank deposits.[22]

The United States

The United States' fragmented federal structure regarding financial regulation also applies to digital assets. While some federal regulators have shown increased engagement with DLT-based financial activity—reflected in certain executive orders[23] and regulators' statements[24]—legislative efforts have similarly been piecemeal, with a newly established regulatory framework for payment stablecoins (definitionally tied to DLT) remaining disconnected from broader market structure legislation (see box 2).[25] An intense debate remains underway within the United States among traditional financial institutions and the digital assets / tokenization community regarding the appropriate balance of permitted activities and the preferred federal regulator to exercise oversight regarding digital assets in general. This debate has not yet resulted in a cohesive national strategy.

---

19 Swiss Federal Council, Bundesgesetz zur Anpassung des Bundesrechts an Entwicklungen der Technik verteilter elektronischer Register, AS 2021 33, January 26, 2021, https://www.fedlex.admin.ch/eli/oc/2021/33/de.

20 "Digital Securities Sandbox (DSS)," Bank of England, accessed December 28, 2025. https://www.bankofengland.co.uk/financial-stability/digital-securities-sandbox.

21 Dave Ramsden, "The Evolution of the Bank's Approach to Resolution," speech given at King's College, London, January 14, 2026, https://www.bankofengland.co.uk/speech/2026/january/dave-ramsden-speech-at-kings-college-london-the-evolution-of-resolution.

22 Nathanaël Benjamin, "Removing Frictions," speech given at Womble Bond Dickinson, Newcastle, hosted by the North East Chamber of Commerce, December 3, 2025, https://www.bankofengland.co.uk/speech/2025/december/nathanael-benjamin-speech-at-womble-bond-dickinson.

23 The White House, "Strengthening American Leadership in Digital Financial Technology," Executive Order 14178, January 23, 2025, https://www.whitehouse.gov/presidential-actions/2025/01/strengthening-american-leadership-in-digital-financial-technology/.

24 Hester M. Peirce, "A Creative and Cooperative Balancing Act," speech given at the SEC 31st International Institute for Securities Market Growth and Development, Washington, DC, May 8, 2025, https://www.sec.gov/newsroom/speeches-statements/peirce-iismgd-050825.

25 See the Digital Asset Market Clarity Act of 2025, H.R. 3633, 119th Congress (2025–2026), https://www.congress.gov/bill/119th-congress/house-bill/3633.

Box 2. The GENIUS Act

After years of regulatory uncertainty, the United States passed its first major national crypto legislation on July 18, 2025, the Guiding and Establishing National Innovation for US Stablecoins Act (GENIUS Act), which establishes a regulatory framework for US dollar–backed payment stablecoins. This serves as a crucial first step toward broader digital asset regulatory clarity that could propel the entire digital asset ecosystem forward and create tailwinds for crypto assets, crypto-related companies, and traditional financial companies moving their business on-chain.

The GENIUS Act establishes licensing requirements, consumer protections via Bank Secrecy Act compliance, reserve requirements to safeguard investors, and frameworks for regulating foreign stablecoin issuers entering the US market. However, the legislation covers only US dollar–backed payment stablecoins, fails to address whether stablecoin issuers will have access to Federal Reserve accounts, and remains silent regarding key issues such as crypto market structure and regulatory oversight regarding the crypto markets.[26] Additional issues include whether—or not—crypto market structure legislation must create special new rules regarding conflicts of interest.

Central Bank Approaches

Central banks in some jurisdictions have sought to create new financial market utilities designed to provide a regulatory-compliant venue to facilitate tokenized finance. Singapore's MAS has led a number of coordinated efforts[27] to advance tokenization in financial services, including Project Guardian. The MAS-sponsored Project Guardian convened industry stakeholders to carry out trials of commercial networks and develop industry frameworks for fixed income and funds tokenization. MAS has also launched its Global Layer One (GL1) initiative to develop foundational digital infrastructures to facilitate cross-border exchange of tokenized assets. Additionally, MAS is piloting a wholesale central bank digital currency (CBDC) and test network, which it believes could help facilitate and promote confidence in settlement of tokenized assets. Many other central banks also continue to explore and experiment with CBDCs, with a handful of jurisdictions—namely, the Bahamas, Jamaica, and Nigeria—already having issued one.[28] To date, the experience with these CBDCs has been mixed if not disappointing, particularly in the retail context.[29]

4. THE WAY FORWARD

At the foundational level, the absence of common communication protocols prevents true interoperability among distributed ledger systems. The lack of unified reporting mechanisms creates a fundamental tension between transaction privacy and central bank oversight requirements. These technological challenges are compounded by governance deficits. For example, no coordinated cross-border oversight mechanisms exist that can balance fostering innovation against minimizing financial stability risks. Perhaps most significantly, no consensus exists on the architectural choices that reflect core value judgments about optimal economic structures, creating the risk of irreconcilable divergences between different countries' choices.

26 William C. Dudley, "BWC Backgrounder: Stablecoins Go Mainstream," Bretton Woods Committee, accessed January 7, 2026, https://brettonwoods.org/bwc-backgrounder-stablecoins-go-mainstream/.

27 Monetary Authority of Singapore, "MAS Announces Plans to Support Commercialisation of Asset Tokenisation," press release, November 4, 2024, https://www.mas.gov.sg/news/media-releases/2024/mas-announces-plans-to-support-commercialisation-of-asset-tokenisation.

28 "Central Bank Digital Currency Tracker," Atlantic Council, accessed December 12 2025, https://www.atlanticcouncil.org/cbdctracker/.

29 Kathleen Kao, Ke Chen, Stephanie Forte, Ben Aldersey, and Giulio Soana, "Financial Integrity Implications of Retail Central Bank Digital Currencies (rCBDCs)," IMF Fintech Notes No. 2025/010 (Washington, DC: International Monetary Fund, November 17, 2025), https://www.imf.org/en/publications/fintech-notes/issues/2025/11/14/financial-integrity-implications-of-retail-central-bank-digital-currencies-rcbdcs-571769.

Policy makers may agree on the need to accelerate initiatives and implement asset tokenization, but that does not mean they agree on optimal oversight choices, much less on how to coordinate with each other on a cross-border basis.

Roles of Existing Institutions

Fortunately, existing treaty-based structures provide reliable, time-tested mechanisms for fostering cross-border dialogue and discussion to smooth the sharp edges when different jurisdictions' interests and goals diverge. The BIS, the IMF, and the WB all have important roles to play. The BIS and the IMF remain the best-placed institutions to serve as clearinghouses for knowledge and best practices for central banks and finance ministries, respectively, and to provide the convening function necessary to resolve emerging policy differences. The WB should strive to ensure that developing economies can also explore use cases for tokenization and capture tokenization benefits.

The Bank for International Settlements

The BIS should continue coordinating central bank efforts regarding digital ledgers, as it has done through its projects such as Agora and Nexus (see box 3). These initiatives explore the use of tokenized bank deposits and multi-CBDC platforms to address cross-border payment inefficiencies, aiming to deliver instant settlement and eliminate the need for complex bilateral connections between countries. The BIS's role is critical in ensuring that the technological evolution of the financial system, particularly regarding wholesale transactions, maintains financial stability.

Box 3. Major BIS payments and tokenization projects

Project name	Participants	Timeline	Description
Agora	Institute of International Finance (representing the private sector), Bank of France (representing the Eurosystem), Bank of Japan, Bank of Korea, Bank of Mexico, Swiss National Bank, Bank of England, and Federal Reserve Bank of New York	Est. 2024, ongoing	Agora explores the use of tokenized bank deposits and central bank money on a unified ledger to address cross-border payment inefficiencies such as regulatory differences and time zone barriers through public-private partnerships.
mBridge	Thailand, UAE, China, Hong Kong, and Saudi Arabia	Est. 2021, now led by participants without BIS involvement	Project mBridge explored a multi-CBDC platform shared among participating central banks and commercial banks using DLT to enable instant cross-border payments and settlement.
Rialto	Bank of France, Bank of Italy, Bank Negara Malaysia, and Monetary Authority of Singapore	Est. 2025, ongoing	Rialto seeks to improve instant cross-border payments by combining modular foreign exchange with tokenized central bank money settlement, linking instant payment systems with automated wholesale foreign exchange conversion.

The International Monetary Fund

The IMF can leverage its broad membership and macroeconomic stability mandate to identify the global financial system challenges posed by tokenization, primarily through its work with finance ministries. The Fund's highly respected research and analysis is uniquely placed to provide recommendations on how tokenization can reduce operational friction and achieve welfare-enhancing outcomes for economies based on the IMF's superior knowledge of its members' national-level deployments (see box 4). The Fund's technical assistance and Financial Sector Assessment Program work can and should prioritize providing to emerging market economies the capacity to implement best practices consistent with domestic priorities across the full range of asset tokenization initiatives, from CBDCs and cross-border payments to crypto market oversight and stablecoin regulatory standards. The IMF can assist with work to standardize terminology and enhance international interoperability across digital asset ecosystems. Recognizing the fragmentation risk, the IMF can use its convening power as a forum to provide best practices to securities regulators. Most significantly, the IMF can work on determining how to build a global CBDC platform that facilitates seamless cross-border transactions between national digital currencies. The goal would be to support consistent best practice standards that respect individual jurisdictions' core policy choices while enhancing cross-border interoperability supporting a unified global system.

Box 4. IMF tokenization work

The IMF is leveraging tokenization research and standard setting to address global financial system challenges through a comprehensive approach that combines technical analysis, regulatory guidance, and international coordination. Through research[30] and its CBDC virtual handbook,[31] the IMF is identifying how tokenization can reduce operational friction and improve market functioning. Recognizing that fragmented approaches could undermine benefits, the IMF is using its broad membership and macroeconomic stability mandate to standardize terminology and enhance international interoperability across digital asset ecosystems. In June 2023, IMF managing director Kristalina Georgieva announced that the Fund is working on a global CBDC platform to facilitate seamless cross-border transactions between national digital currencies.

The World Bank

The WB's primary role should be to ensure that developing economies are not excluded from the benefits of advanced financial technology, and the Bank should use its development assistance framework to facilitate the necessary rollout. The Bank can continue to explore tokenization use cases to enhance transparency, efficiency, and operational effectiveness in development finance (see box 5). This role is demonstrated by landmark projects such as the bond-*i*—the first bond issued entirely on a blockchain—and the Bank's collaboration with the Swiss National Bank and BIS on Project Promissa to tokenize promissory notes. Most recently,

30 Itai Agur, Germán Villegas-Bauer, Tommaso Mancini-Griffoli, and Maria Soledad Martinez Peria, "Tokenization and Financial Market Inefficiencies," IMF Fintech Notes No. 2025/001 (Washington, DC: International Monetary Fund, January 29, 2025), https://www.imf.org/en/publications/fintech-notes/issues/2025/01/29/tokenization-and-financial-market-inefficiencies-561256.

31 "Central Bank Digital Currency Virtual Handbook," International Monetary Fund, last updated November 2025, https://www.imf.org/en/topics/digital-payments-and-finance/central-bank-digital-currency/virtual-handbook.

the FundsChain initiative was launched to leverage blockchain technology to provide end-to-end traceability for development project disbursements, directly enhancing accountability and transparency in international aid efforts.

Box 5. World Bank tokenization work

The WB is exploring tokenization use cases across initiatives that enhance transparency, efficiency, and operational effectiveness in development finance. Through Project Promissa, the WB collaborated with the BIS and Swiss National Bank to tokenize promissory notes using DLT, transforming a paper-based process into a streamlined digital system that provides a single source of truth for tracking member nation obligations to multilateral institutions. In a landmark step toward digital innovation, the WB became the first issuer of a blockchain bond in 2018. Known as bond-*i*,[32] the bond was created, allocated, and transferred entirely on a private Ethereum-based blockchain network. Continuing its leadership in blockchain finance, the Bank became the first issuer on Euroclear's DLT-powered Digital Financial Market Infrastructure in October 2023, issuing €100 million in digitally native notes that integrated seamlessly with traditional settlement systems. Most recently, through FundsChain, launched in September 2024, the WB is leveraging blockchain technology to provide end-to-end traceability for development project disbursements, enabling stakeholders track how funds are allocated and used, thereby enhancing accountability and transparency.

Policy Priorities

With these roles in mind, policy makers at the national and multilateral levels should focus on interoperability and information access and liquidity provision.

Interoperability and Information Access

Any technology infrastructure can become interoperable if common communication protocols can be established. This report focuses on a different kind of interoperability. Significant architectural divergences in tokenization structures emerged at the country level in 2025. The technology choices reflect core—and potentially irreconcilable—value choices about the optimal tokenization structures to support economic flows in the 21st century.

Although balancing interests will not be easy, the IMF and the BIS have decades of experience in managing complex policy conversations where national policies conflict. Their research and oversight structures provide a familiar mechanism to foster cross-border conversations that can advance policy interoperability without compromising sovereignty.

Policy conversations should start with a mutual understanding of a core fact: Finance ministries, central banks, and their international organizations cannot make good decisions without access to high-quality data regarding the flow and distribution of economic activity.

In a tokenized economy, transactions will occur at the speed of light. The record of the transaction is immutable

32 World Bank Group, "World Bank Prices First Global Blockchain Bond, Raising A$110 Million," press release, August 23, 2018, https://www.worldbank.org/en/news/press-release/2018/08/23/world-bank-prices-first-global-blockchain-bond-raising-a110-million.

and transparent to all participants in the ledger, even if the personal identities of the transaction parties are shielded. The potential multiplicity of distributed ledgers helps explain why central banks would favor a unified ledger: data leakage. If central banks are to continue to perform their financial stability and monetary policy roles, all smart contracts executed in a tokenized economy would need to include a mechanism for reporting to central banks. A unified ledger would be more efficient, but other mechanisms also exist to ensure that policy makers receive the necessary information.

The tokenization context is not the first situation that has required policy makers to address the balance between private-sector activity and official-sector oversight. Transaction reporting currently exists across all economies, with protections for individual privacy. The current system ensures that policy makers receive the information they require in order to make good decisions for their countries as a whole. Expanding existing standards to distributed ledgers creates a technological challenge that is not insurmountable for economies that accept the role of the central bank.

Similarly, information access serves another role in the law enforcement context. Governments have a legitimate interest in protecting their financial system and transactions from illicit and nefarious activity. This requires transparency with respect to the transacting parties.

Technology is not the impediment. Smart contracts can be configured to trigger alerts or contract nullification when a contracting party or wallet is on a sanctions list. Concerns have already arisen regarding the possibility that certain distributed ledger initiatives can serve as gateways for sanctions avoidance.[33] More challenging issues can arise regarding fully masked transactions, but the more salient point involves extraterritoriality—the extension of one sovereign state's national laws and regulations to a different country.

These issues are unavoidable and must be addressed. Few organizations are better placed to host this conversation than the IMF and the BIS.

Liquidity Provision

Some proponents of distributed ledger–based finance argue that central bank liquidity provision is unnecessary in a smart contract context because transactions only occur on a cash basis. Automated execution prevents a waterfall of insufficient funds from creating a financial-stability stress event. If they are correct, then the central bank's lender-of-last-resort role and the IMF's liquidity facilities would eventually become irrelevant when tokenized transactions dominated the financial system.

The argument becomes more difficult to sustain when tokenized assets extend to fixed-income instruments and mortgage-based real estate transactions. These credit instruments depend on the obligor having the cash available to meet payment obligations on a schedule for an extended period in the future. Failure to perform on these obligations will trigger downstream financial stress for those expecting to receive payments. In addition, financial distress often leads to negotiations between creditors and obligors to modify contract terms to maintain the possibility of contract performance. It is not clear how contract modification would occur in a distributed ledger setting.

Even in a fully tokenized economy, liquidity provision by central banks and international financial institutions will likely remain necessary, though its operational form may need to evolve. Existing tools such as swap lines, standing facilities, and IMF credit arrangements illustrate how liquidity provision has adapted to changing financial structures in the past. Policy makers at the IMF and the BIS should begin assessing now how these mechanisms might need to be further adjusted in a tokenized environment before periods of stress emerge.

33 Agustín Carstens, "The Future of Finance," speech given at Santander International Banking Conference, Madrid, October 31, 2024, https://www.bis.org/speeches/sp241031.htm.

A Dual-Track Approach

The path forward requires a dual-track approach that builds capacity domestically while strengthening international coordination mechanisms. At the country and regional level, policy makers must develop national frameworks that foster innovation while preserving central bank oversight capabilities, establish regulatory sandboxes for testing tokenized asset systems, and create clear legal frameworks for smart contracts and digital asset ownership. These domestic efforts must be complemented by robust international cooperation that leverages existing institutional structures rather than creating new bureaucratic layers. The IMF and BIS are particularly well positioned to facilitate this coordination, given their decades of experience in managing cross-border financial stability challenges and their established mechanisms for balancing competing national interests without compromising sovereignty.

Achieving a global regime that facilitates interoperability and the development of common standards while avoiding a race to the bottom will require pragmatic cooperation rather than perfect harmonization. The BIS should continue its leadership on technical standard setting and cross-border coordination of central bank policies, particularly in developing transaction-reporting requirements that function across distributed ledgers while preserving privacy protections. The IMF must evolve its liquidity provision capabilities to address the unique challenges presented by tokenized assets. The WB's development assistance framework provides the natural mechanism to ensure that developing economies are not excluded from these technological advances.

Jurisdictions will make different core value choices about their economic structures but still must maintain the ability to work together effectively. This approach acknowledges that complete uniformity is neither achievable nor desirable. Instead, policy makers should explore opportunities to articulate minimum standards for official-sector information access, sanctions compliance, and financial stability oversight. The existing treaty-based structures provide reliable mechanisms for fostering the necessary cross-border dialogue, and their research and oversight capabilities offer familiar frameworks for advancing policy interoperability. The BIS and IMF in particular have deep experience in navigating the balance between rapid financial innovation and financial stability issues. Thus, they are well positioned to address the unique cross-border challenges presented by DLT and asset tokenization.

5. CONCLUSION

Policy makers around the world continue to grapple with how best to regulate financial services enabled by DLT, including tokenization. As with all emerging technologies, both the benefits and the risks have yet to be fully realized. Government efforts to protect both citizens and global financial stability require complex trade-offs as well as time for cross-border conversations during implementation. 2026 is the year when such initiatives should expand, given rapid adoption rates for tokenized financial products across asset classes and national trading markets.

This paper has highlighted the emerging regulatory approaches to tokenization around the world, and how they are diverging across jurisdictions. These differences reflect underlying institutional mandates, legal traditions, and preferences regarding the balance between public authority and private innovation. While these differences are unsurprising, the financial system involves significant cross-border activity. In this context, unmanaged fragmentation risks could erode oversight and enforcement and amplify systemic vulnerabilities.

The history of the financial system has been one of change. Tokenization technology promises to be no different. Leveraging existing multilateral structures to handle new challenges affords the best chance for meaningful global cooperation and, thus, the promise of a global system operating at high efficiency for the broadest range of participants. This reality argues for institutions such as the BIS, IMF, and WB to play a strong role in minimizing regulatory fragmentation, while supporting a rising tide of technological capabilities that can lift all boats. Although the specifics of the problems have changed, the solution in the tokenization context remains the same: Economic cooperation and coordination enables superior outcomes for both economies and private-sector participants seeking to add value and growth opportunities on the innovation frontier.

Digital Finance Project Team

CO-LEADS: William C. Dudley and Carolyn A. Wilkins

SPECIAL CONTRIBUTIONS: Jonathan R. Everhart, Brandon Neal, Antonio U. De Lorenzo, Mahesh Kotecha

WORKING GROUP: Mahmoud Abdellatif, Lola Adekanye, Jason Allegrante, David Anderson, Gregory V. Arnold, Beverly Barrett, Jim P. Bergin, Richard Berner, Charleyne Biondi, Barbara Boehler, Sinead Bovell, Josh Burek, Keith B. Carter, Uldis Cerps, Raghav Chopra, Bill Coen, Jonah M.A. Crane, Wagner Dada, Himamauli Das, Michael DiRoma, Marie Diron, Paul Dozier, Elena Duggar, Alex Dunn, Mona Elliot, Anthony Elson, Omer Fein, Sergio Fernandez de Cordova, Gerald Gallagher, Grant Gao, Nitin Gaur, Samim Ghamami, Michael R. Granito, Urvi Guglani, Jodie Gunzberg, Sarah Hammer, Matt Higginson, Caroline Hill, Kristen Hutchens, David Inderias, William Jannace, Charles Jansen, Linda Jeng, Joanna Kalmer, Talha Khan, Ron Korland, Pat LaVecchia, Louis Liu, Barbara Matthews, Charles Mounts, Fabio Natalucci, Andrzej Nowak, Bill Papadakis, William J. Papp, Andrew Park, Maximilien Pucci-Sisti Maisonrouge, Jeanette Quick, Jessica J. Renier, Sunil Sabharwal, Paul R. Samson, Jason Schenker, Lemma W. Senbet, Yawar Shah, Michael F. Silva, Katherine Snow, Keerthika Subramanian, Rajesh Swaminathan, Natalya Thakur, Helen Turner, Anne Van Praagh, Allen Vincent, Harry Zixin Wang, Adam Wang-Levine, Benjamin S. Weiss, Rex Wempen, Sharon Yang, Charles Yockey, Linda Yueh

THE BRETTON WOODS COMMITTEE
1701 K St NW #950, Washington, DC 20006
www.brettonwoods.org