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Financial stability implications of tokenisation – Executive Summary

Tokenisation refers to the use of new technologies, such as distributed ledger technology (DLT), to issue or represent assets in digital form as tokens. These tokens can represent traditional financial assets, such as securities and bank deposits; physical assets like real estate; or new assets representing claims against the issuer.

Tokenisation is currently small in scale but growing, with potential benefits including improved efficiency, reduced costs, increased transparency and broader investor access through asset fractionalisation. However, many of these benefits are unproven and may involve trade-offs, such as increased operational complexity, liquidity pressures and regulatory uncertainty.

Against this background, in October 2024, the Financial Stability Board (FSB) published the report *The Financial Stability Implications of Tokenisation* to examine current developments in tokenisation, assess associated financial stability vulnerabilities and identify policy issues for consideration.

The report focuses on DLT-based tokenisation, as this is the technology underpinning most private and public sector tokenisation projects to date. In particular, it focuses on DLT-based tokenisation of financial assets, excluding central bank digital currencies (CBDCs) and cryptoassets, which are covered in separate reports by the FSB and other global standard-setting bodies.

DLT-based tokenisation – current landscape and key features relevant for financial stability

Tokenisation of financial assets using DLT is still at an early stage. Projects are often small-scale and experimental. Notable examples include tokenised bonds issued by the European Investment Bank and JPMorgan's JPM Coin for wholesale payments. Broader adoption is constrained by limited investor demand, lack of interoperability between DLT platforms and legacy systems, and regulatory and legal uncertainty.

Key features of tokenisation relevant for financial stability include the following:

- **Governance:** Most projects use permissioned DLT platforms with centralised control, though some use permissionless systems with less transparency. In general, design choices for DLT platforms and the resulting degree of access control may affect issues such as platforms' operational capacity, security and risk management, which have implications for financial stability.
- **Programmability and composability:** Smart contracts enable automated execution of transactions (programmability), as well as the creation of products that combine features and functionalities in new ways (composability). Programmability is relevant for financial stability because it can potentially change how financial markets function. Composability, on the other hand, may create opaque interdependencies that could affect financial stability.
- **Types of issuance:** A token that is linked to a reference asset could result in misalignment of the price of the token and the value of the reference asset. In addition, the type of reference asset could also result in different risks, including in relation to their storage and valuation. Tokens that are not linked to a reference asset are still subject to issuer risks.

- **Choice of settlement assets:** Tokenisation may use stablecoins, tokenised bank deposits or central bank money as settlement assets, each presenting different risk profiles and financial stability implications.
- **Third-party reliance:** Tokenisation often depends on external service providers, eg as "custodians" to safekeep reference assets, as "oracles" to collect and store data on DLT platforms, and developers and maintainers of protocols (or "bridges") that allow the exchange of tokens on one DLT platform with tokens on another. These third-party service providers may affect platform functioning and token valuation, which can introduce new points of financial system vulnerability.

Financial stability vulnerabilities associated with tokenisation

The FSB identifies five key categories of financial stability vulnerabilities associated with DLT-based tokenisation, many of which mirror those in traditional finance but may be amplified by new technology and governance arrangements:

Liquidity and maturity mismatch: Differences between token and reference asset characteristics may lead to run risks and redemption pressures, especially if tokens are perceived as more liquid than the underlying asset.

Leverage: Composability may facilitate rehypothecation of tokens – or using tokens received as collateral for further borrowing – which increases leverage, especially in the absence of regulatory limits.

Asset price and quality risks: Opaqueness in smart contracts and reliance on unregulated oracles could impair price discovery and asset valuation. Discrepancies between token and reference asset prices may emerge due to legal or market frictions.

Interconnectedness: Tokenisation platforms could become critical infrastructure linking multiple institutions and activities, introducing new contagion pathways. Global, 24/7 operability may exacerbate volatility and complicate oversight.

Operational fragilities: Vulnerabilities arise from smart contract errors, private key mismanagement, lack of governance standards and the immutability of DLT transactions. Permissionless networks may further lack accountability and resilience.

Conclusions and policy considerations

Tokenisation currently poses minimal financial stability risks owing to its small scale, focus on permissioned platforms, limited programmability and low interconnectedness. However, risks could materialise under certain conditions:

- **Significant scaling:** Wider adoption, driven by regulatory clarity and interoperability improvements, could amplify vulnerabilities.
- **Increased complexity and opacity:** Programmability and composability may lead to unintended systemic interconnections.
- **Insufficient oversight:** If emerging risks are not addressed through appropriate regulation and supervision, tokenisation could undermine market integrity and resilience.

As an initial response, the FSB suggests that standard-setting bodies and national authorities should:

- address data gaps by improving monitoring and information collection on tokenisation initiatives
- consider ways to increase understanding of how tokenisation fits into legal and regulatory frameworks and supervisory approaches
- enhance cross-border regulatory and supervisory information-sharing, particularly given the global nature of many tokenisation initiatives

This Executive Summary and related tutorials are also available in FSI Connect, the online learning tool of the Bank for International Settlements.