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# DIGITAL ASSETS

# Japan's Tokenised Reserves: Linking Central Banking and Blockchain

By

Ridipt Singh

1 April 2026

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*For information about Rosa&Roubini Associates, please send an email to info@rosa-roubini-associates.com or call +44 (0)20 7101 0718.*

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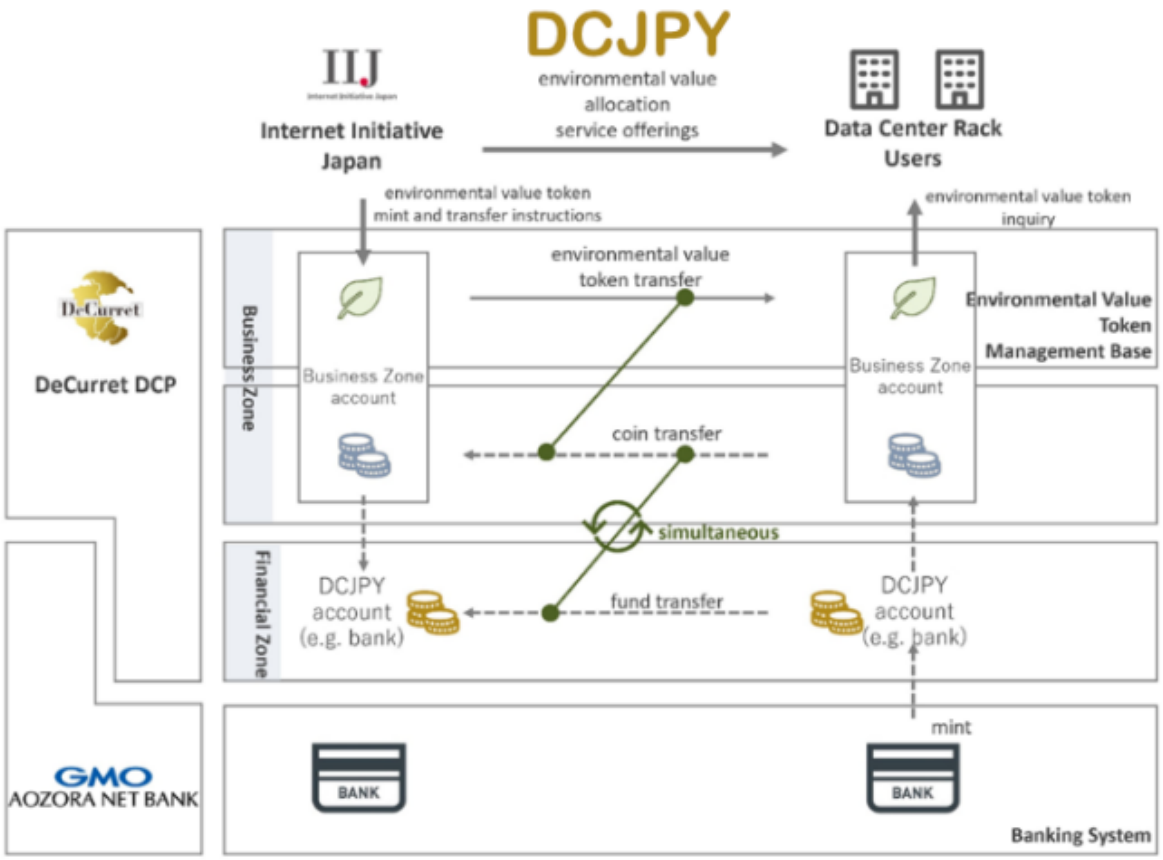
## Executive Summary


- Bank of Japan is piloting a blockchain-based sandbox to test tokenised central bank reserves for wholesale settlement without disrupting live systems.
- BOJ Governor Kazuo Ueda emphasises a blockchain-AI convergence while reaffirming central bank money as the core "anchor of trust" in the financial system.
- The initiative aims to enable 24/7 programmable settlements, integrate with existing infrastructure and explore smart contracts for delivery-versus-payment and liquidity efficiency.
- It positions tokenised reserves as part of a hybrid financial architecture, supporting interoperability between traditional systems and blockchain networks, including potential cross-border coordination.
- The broader objective is to improve market efficiency, reduce settlement risk, enhance collateral and liquidity management, and inform future wholesale CBDC development and global standards for tokenised financial infrastructure.


**Key Picture: DCJPY: Tokenized Deposit Architecture**




*Source:* Ledgerinsights

## Japan's Blockchain Sandbox Pilot

On 3rd March, Governor of Bank of Japan (BOJ) Kazuo Ueda announced that the central bank is considering experimenting blockchain technology to settle central bank deposits as part of a "sandbox project" to examine if central bank reserves can be used to enable a broader array of blockchain-based settlement systems.[1] Governor Ueda also pointed to the convergence of blockchain and artificial intelligence (AI) suggesting that AI-driven data processing alongside distributed ledger technology (DLT) could open avenues to enhance financial services, however no concrete use cases from this combination were specified. He further reiterated the BOJ's position that central bank money – comprising cash and current account deposits – remains the core "anchor of trust" and its most liquid, secure settlement asset regardless of how payment methods continue to evolve.[2]

The BOJ oversees interbank settlement, liquidity management, and monetary policy via reserve accounts held by commercial banks. Incorporating blockchain into these reserve settlement processes could, in theory, allow for 24/7 settlement and help mitigate the risk of gridlock during times of financial strain.[3]

## Initiative Design and Objectives

This BOJ sandbox will use blockchain to represent current account deposits – commercial bank reserves – in tokenised form, enabling experimental settlements without affecting live operations. It focuses on technically validating links with the existing BOJ-NET infrastructure, which includes exploring synchronous delivery-versus-payment (DvP) for securities and interbank funds, while incorporating smart contracts to enable programmability. Furthermore, external experts are involved in assessing cybersecurity risks, legal compliance under Japan's regulatory framework, and interoperability with legacy systems. Unlike earlier retail CBDC pilots, the initiative targets wholesale settlement layers. Its design assumes blockchain and conventional systems will coexist, using central bank money as a universal bridge to prevent fragmentation, with phased experiments beginning domestically before potentially expanding to cross-border initiatives such as Project Agora.[4]

This sandbox initiative aims to enable 24/7 real-time settlements, overcoming BOJ-NET's business-hour limitations and easing liquidity pressures during periods of market stress.[5] Furthermore, it seeks to explore programmability through smart contracts to automate transactions such as collateral swaps and refinancing, while reinforcing the role of central bank money amid the growth of decentralised finance (DeFi).[6]

Acting as a trust anchor, the pilot promotes interoperability between fragmented blockchain networks and traditional systems, helping avoid value inconsistencies seen in earlier banking eras and informing future BOJ-NET upgrades for hybrid environments. Over the long term, it could support the issuance of tokenised deposits on a global scale, enhancing payment stability and innovation without displacing private sector initiatives.

## Wholesale CBDC Development Implications

This initiative accelerates Japan's wholesale CBDC trajectory from conceptual phases (e.g. earlier proof-of-concept work and retail CBDC pilots)[7] toward operational testing, validating tokenised reserves as scalable infrastructure versus retail-focused experiments. This aligns with broader G7 and international efforts, echoing European Central Bank's (ECB) DLT trials[8] and Bank for International Settlements' (BIS) Project Jura[9] and Project Agora[10] - potentially standardising atomic settlements for cross-border wholesale payments involving multiple CBDCs.

Early insights from the pilot initiative can address programmability risks – including smart contract design, operational failures, and legal enforceability – while informing regulatory and governance frameworks through collaboration between central banks. Moreover, they also contribute to the broader concept of "Unified Ledger", where central bank and commercial bank money coexist on a common DLT platform to settle a wide range of tokenised assets.[11]

### Financial Market Efficiency Gains

Tokenisation enables instantaneous, atomic settlements, slashing intraday liquidity demands and settlement risks in Japan's high-volume JGB and FX markets, where even minor delays amplify volatility. By facilitating continuous around-the-clock operations, it helps close funding gaps during off-hours and strengthens resilience against systemic shocks such as the liquidity strains. Simultaneously, it enhances collateral efficiency through programmable repo structure, allowing for more dynamics and precise allocation of assets.

AI integration can further refine risk management and improve AML/CFT compliance, while also reducing reconciliation costs across traditionally fragmented financial systems.[12] Overall, tokenisation supports a more adaptive and elastic market structure, helping preserve the effectiveness of the BOJ monetary policy transmission even as private tokenised forms of money become more prevalent.

### Evolving Role of Tokenised Infrastructure

The initiative contributes to the evolving role of tokenised infrastructure as a potential component of future financial systems, where tokenised central bank money may serve as a trusted settlement asset within interoperable networks. It reflects broader efforts to address fragmentation risks, improve coordination across distributed ledgers, and explore atomic settlement for multi-party transactions. Moreover, this approach points toward hybrid architectures in which tokenised and conventional systems operate alongside and are interconnected, with central bank money continuing to provide a stabilising foundation.

In this context, tokenised infrastructures may help inform future developments in payment and messaging standards, such as ISO 20022, [13] and ongoing conceptual work on integrated financial architectures such as BIS "unified ledger", however, these broader implications remain exploratory and will depend on technological maturity, legal frameworks, and interoperability. Similarly, potential applications involving advanced analytics or automation would depend on how data access, governance, and supporting technologies evolve, rather than being an inherent outcome of tokenisation itself.

Overall, the initiative signals a gradual shift toward more interoperable and programmable financial infrastructures, while leaving open questions about the pace and scope of broader systemic transformation.

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