

The Role of BI Policy in the Development of Central Bank Digital Currency (CBDC) as a Future Payment Tool

Dessy Putri Safrina¹, Eva Sabrina Zahra²

^{1,2} UIN K.H. Abdurrahman Wahid Pekalongan, Indonesia

Email correspondent: dessy.putri.safrina@mhs.uingusdur.ac.id

ABSTRAK: Penelitian ini bertujuan untuk menganalisis peran kebijakan Bank Indonesia dalam pengembangan Rupiah Digital sebagai Central Bank Digital Currency (CBDC) serta implikasinya terhadap stabilitas moneter dan sistem pembayaran nasional. Metode yang digunakan adalah pendekatan kualitatif deskriptif dengan analisis literatur dan kajian regulasi terkait. Hasil penelitian menunjukkan bahwa Bank Indonesia memegang peran strategis tidak hanya sebagai otoritas moneter, tetapi juga sebagai pengarah transformasi sistem pembayaran nasional melalui Proyek Garuda dan Blueprint Sistem Pembayaran Indonesia 2030. Keberhasilan penyelesaian Proof of Concept (PoC) tahap wholesale pada akhir 2024 membuktikan kesiapan teknologi dan regulasi dalam mendukung implementasi Rupiah Digital, khususnya dalam meningkatkan efisiensi settlement antar-lembaga keuangan melalui pemanfaatan Distributed Ledger Technology (DLT). Secara keseluruhan, Rupiah Digital berpotensi meningkatkan efisiensi sistem pembayaran, memperluas inklusi keuangan, serta memperkuat transmisi kebijakan moneter melalui peningkatan kecepatan peredaran uang dan pemantauan kondisi ekonomi secara real-time. Temuan ini menegaskan bahwa kebijakan Bank Indonesia dalam pengembangan CBDC merupakan langkah strategis untuk menjaga stabilitas dan kedaulatan moneter di era ekonomi digital.

Kata kunci: Bank Indonesia, CBDC, Pembayaran

ABSTRACT: This article aims to analyze the role of Bank Indonesia's policies in the development of the Digital Rupiah as a Central Bank Digital Currency (CBDC) and its implications for monetary stability and the national payment system. The method used is a descriptive qualitative approach with literature analysis and a review of relevant regulations. The results of the study show that Bank Indonesia plays a strategic role not only as a monetary authority, but also as a leader in the transformation of the national payment system through the Garuda Project and the 2030 Indonesian Payment System Blueprint. The successful completion of the wholesale Proof of Concept (PoC) at the end of 2024 proves the readiness of technology and regulations in supporting the implementation of the Digital Rupiah, particularly in improving the efficiency of settlements between financial institutions through the use of Distributed Ledger Technology (DLT). Overall, the Digital Rupiah has the potential to improve payment system efficiency, expand financial inclusion, and strengthen monetary policy transmission through increased money circulation speed and real-time economic condition monitoring. These findings confirm that Bank Indonesia's policy on CBDC development is a strategic step to maintain monetary stability and sovereignty in the digital economy era.

Keywords: Bank Indonesia, CBDC, Payment

1. INTRODUCTION

The rapid development of digital technology has revolutionized the global payment system, prompting central banks in various countries to develop Central Bank Digital Currency (CBDC) as a digital representation of fiat currency issued by official monetary authorities. In Indonesia, Bank Indonesia (BI) is leading this effort through Project Garuda, which aims to realize the Digital Rupiah as a secure, efficient, and inclusive innovative payment tool of the future, in line with the vision of the 2030 Indonesian

Payment System Blueprint (BSPI) (BI, 2025b). This study specifically analyzes the strategic role of BI policy in the development of the Digital Rupiah, focusing on how the policy can maintain national monetary sovereignty amid the rise of crypto assets and private digital payment platforms such as QRIS, which has been adopted by more than 60 million users (BI, 2025a).

CBDC is defined as a central bank digital liability equivalent to physical cash, designed to support faster monetary policy transmission, reduce transaction costs, and increase financial inclusion for the unbanked. Theoretically, the CBDC framework is based on monetary legitimacy theory, in which central banks respond to digital financial decentralization to maintain currency sovereignty from the threats of cryptoization and shadow banking (Firdaus, 2025). International literature, such as the BIS survey, highlights two main models: wholesale CBDC for inter-financial institution settlements and retail CBDC for everyday transactions, with distributed ledger technology (DLT) such as Hyperledger Fabric as the foundation to ensure scalability and security. By the end of 2025, approximately 69 countries were actively developing CBDCs, but only four had reached the full retail launch stage, namely Sand Dollar in the Bahamas (2020), eNaira in Nigeria (2021), JAM -DEX in Jamaica, and ZiG in Zimbabwe, all of which have shown significant improvements in payment efficiency despite facing initial adoption challenges (Juan Gutierrez, 2022).

A case study in Indonesia, the Garuda Project launched by BI in November 2022, has reached an important milestone with the completion of the immediate state Proof of Concept (PoC) in December 2024, in which two DLT platforms were tested for issuance, peer-to-peer transfer, and interbank redemption functions in a wholesale Digital Rupiah (w-Digital Rupiah) scenario. This trial involved collaboration with financial institutions and proved the technology's feasibility in reducing settlement time from days to seconds, while maintaining data privacy and security in accordance with national cybersecurity standards (Pessarlay, 2024). Furthermore, BI plans to develop retail Digital Rupiah (r-Digital Rupiah) integrated with QRIS, leveraging the existing user base to encourage daily digital transactions, with a government bond backing model similar to stablecoins to ensure exchange rate stability. This experience is similar to other wholesale CBDC pilots in Asia, but adapted to the Indonesian context, such as the dual economy and high MSME transactions (Hassan Shittu, 2025).

BI was formalized through Law Number 4 of 2023 concerning Financial Sector Development and Strengthening (P2SK), which explicitly mandates BI to issue Digital Rupiah as a legal payment instrument, complementing Law Number 7 of 2011 concerning Currency. This process was supported by the January 2023 Consultative Paper, which gathered input from thousands of stakeholders on aspects of accessibility, bank run risks, and interoperability, resulting in a two-tier design involving commercial banks as distributors. This policy also responds to the IMF's warning about CBDC risks such as cyber threats, with BI adopting the "do no harm" principle to maintain financial system stability (Jati et al., 2024).

Previous literature shows that blockchain-based Digital Rupiah can increase money velocity and real-time inflation monitoring, as analyzed through a VAR model on Indonesian digital transaction data (Hermawan et al., 2024). A study in Sumatra reveals the potential of CBDC as a catalyst for regional economic growth, with North Sumatra projected to benefit the most thanks to its advanced digital infrastructure. Sentiment analysis of 1,200 Scopus articles (up to 2022) indicates a neutral-positive public attitude (74%), with the main concern being data privacy. Legal research emphasizes the urgency of regulatory reconstruction to prevent cryptoization, where 18.83 million Indonesian crypto investors risk eroding the dominance of the Rupiah (Kharisma & Sulistiyono, 2024).

Academically, this research is needed to fill the literature gap that is still limited to the technical design of the Digital Rupiah, while an in-depth analysis of the role of BI

policy post-PoC 2024 is not yet available. Practically, with the BSPI 2030 target of reaching Rp81 trillion in money market transactions per day, the Digital Rupiah will be the backbone of financial inclusion for 40% of the unbanked population outside Java, while protecting them from crypto volatility, which is expected to reach Rp48.82 trillion in transactions by 2024. This research contributes concrete policy recommendations for BI, ensuring Indonesia's competitiveness in the global CBDC landscape and supporting sustainable digital economic transformation (Widodo et al., 2025).

2. METHOD

This article uses a qualitative approach with library research methods to analyze the role of Bank Indonesia (BI) policies in the development of the Digital Rupiah or Central Bank Digital Currency (CBDC) as a future means of payment. A qualitative approach was chosen because this study aims to gain an in-depth understanding of the concept, policy direction, and implications of the development of the Digital Rupiah as formulated by Bank Indonesia, rather than to test hypotheses statistically.

The data sources used in this study are secondary data, obtained from various official documents and relevant literature. The data includes Bank Indonesia's policies and regulations related to payment systems and the Digital Rupiah, such as the 2025 Indonesian Payment System Blueprint (BSPI), Bank Indonesia's official reports and publications, laws and regulations, as well as scientific articles, national journals, books, and previous research reports discussing CBDC and digital payment systems. The selection of data sources was done purposively by considering the credibility, relevance, and timeliness of the information.

The data collection technique was carried out through document analysis, by identifying, classifying, and examining the contents of documents related to Bank Indonesia's policies in developing the Digital Rupiah. Furthermore, the collected data was analyzed using descriptive-qualitative analysis, namely by interpreting the content of the policy, comparing the concept of the Digital Rupiah with existing payment instruments, and examining Bank Indonesia's role and strategy in promoting the implementation of CBDC as a future payment instrument. The results of the analysis are expected to provide a comprehensive picture of the direction of BI's policy and its contribution to the transformation of the payment system in Indonesia.

3. RESULT AND DISCUSSION

The Role of Bank Indonesia's Policies in the Development of the Digital Rupiah

The literature review shows that Bank Indonesia (BI) policies play a central role in the development of the Digital Rupiah as a Central Bank Digital Currency (CBDC) in Indonesia. BI serves not only as a monetary authority but also as a payment system regulator responsible for maintaining financial system stability and national currency sovereignty. Through the Garuda Project, BI is actively designing the Digital Rupiah architecture in line with the 2030 Indonesian Payment System Blueprint (BSPI), with the goal of creating a secure, efficient, and inclusive payment system.

The successful completion of the Proof of Concept (PoC) for the immediate state phase by the end of 2024 demonstrates that BI's policies have successfully integrated technological and regulatory aspects in a balanced manner. The implementation of the wholesale Digital Rupiah (w-Rupiah Digital) has been proven to accelerate the settlement process between financial institutions from days to seconds, without compromising security and data protection. This finding aligns with research by Pessarlay (2024), which confirms that wholesale CBDCs can improve financial market efficiency and reduce systemic risk (Pessarlay, 2024).

From a policy perspective, BI applies the "do no harm" principle, ensuring that the introduction of the Digital Rupiah does not disrupt banking and financial system stability. This approach demonstrates BI's cautious response to digital innovation, particularly to avoid the risks of bank runs and banking disintermediation, as warned by the IMF and Bank for International Settlements.

Digital Rupiah as an Instrument for Maintaining Monetary Sovereignty

The analysis shows that the development of the Digital Rupiah is also a strategic response by BI to the increasing phenomenon of cryptoization in Indonesia. The growth in the number of crypto investors, which has reached more than 18 million people, has the potential to erode the dominance of the Rupiah as a legal tender. In this context, the Digital Rupiah is positioned as an official digital payment instrument that is fully under the control of the central bank.

Research by Kharisma and Sulistiyono (2024) confirms that without the presence of CBDC, cryptocurrencies and shadow currencies risk reducing the effectiveness of national monetary policy. Therefore, BI's policy in issuing the Digital Rupiah can be understood as an effort to maintain monetary legitimacy and state sovereignty in the digital economy era.

In addition, the results of the study show that Digital Rupiah has the potential to strengthen monetary policy transmission. The study by Hermawan et al. (2024) proves that the use of digital money allows for more real-time monitoring of money circulation and inflation, enabling central banks to respond to economic dynamics more quickly and accurately (Hermawan et al., 2024).

Thus, BI's policy in developing Digital Rupiah is not only oriented towards technological innovation, but also towards strengthening the fundamental functions of the central bank in controlling inflation and economic stability.

Legal Basis and Regulatory Readiness for Digital Rupiah

The results of the study show that Indonesia already has a relatively strong legal basis for the implementation of the Digital Rupiah. Law Number 4 of 2023 concerning the Development and Strengthening of the Financial Sector (P2SK) explicitly mandates Bank Indonesia to issue the Digital Rupiah as a legal tender, complementing Law Number 7 of 2011 concerning Currency.

This finding is in line with the research by Jati et al. (2024), which states that legal reconstruction related to CBDC in Indonesia is a crucial step to ensure legal certainty and protection of the national financial system.

However, the study also shows that regulatory challenges remain, particularly in relation to personal data protection, cybersecurity, and interoperability with existing payment systems such as QRIS. Therefore, BI policies need to be continuously refined through a gradual and collaborative approach with the banking sector and other stakeholders.

Implications of Digital Rupiah on Payment Systems and Financial Inclusion

The following discussion shows that Digital Rupiah has the potential to be a catalyst for the transformation of the national payment system. The integration of Digital Rupiah with QRIS is considered strategic because it utilizes an already extensive user base, especially MSME players. This has the potential to increase the efficiency of retail transactions and expand financial inclusion, especially for the unbanked and underbanked communities.

Widodo et al. (2025) found that the majority of Indonesians show moderate to high readiness to use the Digital Rupiah, although there are still concerns regarding data privacy and digital literacy.

Therefore, BI's policy needs to be accompanied by public education and strengthening of digital financial literacy so that the implementation of Digital Rupiah can be widely and sustainably accepted.

4. CONCLUSION

This study finds that Bank Indonesia's policy plays a pivotal role in developing the Digital Rupiah as a Central Bank Digital Currency (CBDC) to strengthen monetary sovereignty, improve payment system efficiency, and enhance monetary policy transmission. The successful completion of the wholesale Proof of Concept demonstrates Bank Indonesia's ability to integrate technological innovation with regulatory prudence. The Digital Rupiah is not merely a digital payment instrument but a strategic response to cryptoization risks and the rapid transformation of the digital economy.

From a policy review perspective, the regulatory foundation under Law No. 4 of 2023 provides institutional legitimacy, yet challenges remain in cybersecurity, data protection, interoperability, and public trust. Therefore, this study recommends a gradual and carefully monitored implementation, supported by regulatory refinement, strong cybersecurity infrastructure, and public education initiatives to ensure that the Digital Rupiah contributes to sustainable digital economic growth while maintaining financial system stability.

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