International Journal of Web of Multidisciplinary Studies
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
website: *http://ijwos.com*
Vol.02 No.12.
OPEN ACCESS
E-ISSN : 3049-2424
DOI: https://doi.org/10.71366/ijwos

Central Bank Digital Currencies: International Research and Development in 2025

Prof.Bhargavi Suthar[1], Khushbukumari Bhanupratapsinh Rathod[2], Khushbukumari Bhanupratapsinh Rathod[3]
[1,2,3] *D.L.Patel Institute of Management, Himmatnagar, India*

Article Info

Article History:

Published:24 Dec 2025

Publication Issue:
Volume 2, Issue 12
December-2025

Page Number:
507-509

Corresponding Author:
Khushbukumari Bhanupratapsinh Rathod

Abstract:

With more than 100 central banks investigating options in 2025, Central Bank Digital Currencies (CBDCs) signify a revolutionary period in the financial industry. This study examines adoption rates, pilot programs in China, India, the EU, Nigeria, and the Bahamas, as well as block chain's potential to increase productivity and combat private crypto currencies. It addresses obstacles like regulation as well as advantages like clear payments.

Keywords: Block chain, digital rupees, e-CNY, CBDC, financial inclusion, international payments, and monetary sovereignty

1. Introduction

Overview

In order to modernize payments in a digital economy, CBDCs digitize fiat money issued by central banks. In order to compete with stable coins and expedite transactions, 81% of central banks intend to issue by 2025, with 47% aiming for five-year launches. Bypassing legacy systems, major pilots use blockchain for safe settlements.

2. The Worldwide Adoption Scene

CBDC development for resilience and inclusivity is spearheaded by more than 100 central banks. With offline capabilities, China's e-CNY manages billions of retail and wholesale transactions. RBI pilots for programmable payouts via QR codes are expanded by India's e₹.

The Bahamas' Sand Dollar has allowed mobile use throughout the island since 2020, Nigeria's eNaira targets unbanked people, and the EU's digital euro is testing privacy-focused hybrid models for 2026.

Country/Region	CBDC Name	Status (2025)	Key Features
China	e-CNY	Live	Offline, cross-border
India	e₹	Pilot	Programmable
EU	Digital Euro	Pilot	Privacy hybrid
Nigeria	eNaira	Live	Inclusion
Bahamas	Sand Dollar	Live	Mobile access

3. Technological Underpinnings and Advantages

Blockchain technology uses a kind of system called Distributed Ledger Technology or DLT for short. It also uses smart contracts and something called atomic swaps. All of these things work together to make sure that Central Bank Digital Currencies or CBDC are transparent which means you can see what is going on and immutable which means that once something is written it cannot be changed. It also makes sure that money can be sent around the world right away.

On some networks that are only for certain people the ITU architectures help different systems work together. The good things about this are that it gives governments tools to make policies it helps them control cryptocurrencies. It makes it possible to send money much faster in seconds instead of days. For example something called eNaira was able to get millions of users. Blockchain technology and these special systems are very helpful for things, like CBDC and eNaira.

The mBridge initiative makes it easier for things to move across borders. This is really helpful for cross-border flows to happen smoothly. The mBridge initiative is very important for this to work well.

4. Difficulties

The International Monetary Fund guidelines talk about things, like cybersecurity and privacy and stability and interoperability problems.

Now there are no rules that everyone follows around the world, which could cause problems because things might not work well together.

If harmonised, CBDCs will transform 20% of payments by 2030, promoting inclusive digital finance as pilot projects are successful.

References

1. Centre for International Governance Innovation. "How Central Banks Are Shaping the Future of Digital Currencies." 2025. Coin Ledger.
2. "CBDC Developments 2025: Which Countries Are Leading." https://www.cigionline.org/publications/how-central-banks-are-shaping-the-future-of-digital-currencies/ 2025. https://coinledger.io/research/cbdc-developments
   Coin Law.
3. "CBDC Statistics 2025: Insightful Growth & Adoption Trends." 2025. "DIGITAL CURRENCY GLOBAL INITIATIVE: CBDC Reference Architecture Report." https://coinlaw.io/cbdc-statistics/ITU. 2025. https://www.itu.int/en/ITU-T/extcoop/dcgi/Documents/DCGI%20CBDC%20Reference%20Architecture%20Report-20-01-2025.pdf
4. IMF. "Central Bank Digital Currency: Further Navigating Challenges." 2025. https://www.imf.org/-/media/files/publications/pp/2025/english/ppea2025041.pdf
5. IMF. "Central Bank Digital Currency: Further Navigating Challenges." 2025. https://www.imf.org/en/publications/policy-papers/issues/2025/11/20/central-bank-digital-currency-further-navigating-challenges-RBI.
6. "Digital Rupee (e₹) – FAQs." 2025. https://www.rbi.org.in/commonman/English/scripts/FAQs.aspx?Id=3686
   "Central Bank Digital Currency in India: Perspectives." University of Georgia. 2025. https://openjournals.libs.uga.edu/fsr/article/view/4154
   IMF.
7. "Central Bank Digital Currency (CBDC) - Virtual Handbook." 2024. https://www.imf.org/en/topics/digital-payments-and-finance/central-bank-digital-currency/virtual-handbook