



An Insight Into CBDC (Central Bank Digital Currency) In India

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Abstract

The rise of financial technology (fintech) is revolutionizing the financial sector, and Central Bank Digital Currencies (CBDCs) are a significant aspect of this transformation.

A Central Bank Digital Currency (CBDC) is a digital version of legal tender issued by a central bank. It holds the same value as traditional fiat currency and can be exchanged on a one-to-one basis with it. The key distinction lies in its digital form.¹

This paper explores the rationale for India adopting a CBDC, discusses various design considerations, evaluates potential impacts, and provides an update on the current status of CBDC in India.

The Reserve Bank of India (RBI) is considering CBDC issuance due to several factors: reducing cash management costs, enhancing financial inclusion, increasing transaction efficiency, and promoting security and stability. Key design choices include determining the type of CBDC (wholesale vs. retail), the issuance and management model (direct vs. indirect), the form of CBDC (token-based vs. account-based), the interest-bearing nature of CBDC, and the level of user anonymity.

The potential impacts of CBDC on the Indian economy and financial system are multifaceted. CBDCs could disrupt traditional banking by reducing bank deposits but also foster competition and innovation. They could enhance the RBI's control over monetary policy while introducing cybersecurity risks. Additionally, CBDCs could integrate the informal economy, streamline cross-border payments, and boost financial inclusion.

The RBI's ongoing pilot programs for CBDC, initiated in 2022, have shown promising results, with significant involvement from major banks and an expanding scope. The proposed expansion to include non-bank payment service providers aims to increase accessibility, offer more choices, and test the system's resilience. This initiative aligns with the RBI's focus on creating a robust digital payment ecosystem.

In conclusion, while CBDCs offer substantial opportunities, they also pose challenges. India's proactive approach in developing and testing CBDCs is crucial to ensure it does not lag in this fintech evolution. Continued research, collaboration, and public participation are essential to successfully implement CBDCs and leverage their benefits for the Indian economy.

Keywords

1. Central Bank Digital Currency (CBDC) , Reserve Bank of India (RBI), Financial inclusion, Digital economy, Blockchain, Monetary policy, financial stability

Introduction

"The rise of fintech (financial technology) is transforming the financial landscape, with digital tools and startups challenging traditional institutions. Central banks worldwide are studying Central Bank Digital Currency (CBDC) potential - an electronic version of sovereign currency issued by a central bank, similar to physical money but in digital form. In India, given its vast unbanked populace and booming digital economy, there's active consideration regarding CBDC adoption.

This paper delves into the reason why India to opt for a CBDC, discusses various design alternatives, assesses potential impact, and sheds light on the current status of CBDC in India.

Motivation for CBDC Introduction in India

The Reserve Bank of India (RBI) ponders CBDC issuance in India spurred by several compelling factors:

- **Reduced Cash Management Expenses:** The government shoulders a hefty burden managing physical currency. Printing, transporting, and storing cash for which it has to incur significant costs, estimated at ₹4,980 crore in RBI's Annual Report 2021-22. CBDCs hold promise to substantially decrease these expenses by lessening reliance on physical cash.
- **Enhanced Financial Inclusion:** India grapples with the challenge of financial inclusion. As per the World Bank Findex database, only 77% of adult Indians owned a bank account by 2022. CBDC could offer an assured route for the unbanked to access digital payments and financial services securely, fostering financial inclusion, individual empowerment, and economic growth. Retail CBDC or application provider initiatives seem to be more advanced in emerging economies, where enhancing financial inclusion is cited as a key anticipated outcome.²
- **Amplified Efficiency and Innovation:** Conventional cash transactions often prove sluggish and cumbersome. CBDCs offer potential to streamline payment systems, facilitating quicker, cheaper, and more convenient transactions. This has the potential to unlock new frontiers in finance, resulting in groundbreaking financial instruments and offerings. Cash to GDP ratio would decrease.
- **Security and Stability Promotion:** CBDCs, being digital currency issued by a central bank, could offer a more secure alternative to unregulated private virtual currencies such as Cryptocurrencies which are prone to

volatility. Additionally, CBDCs could bolster financial system stability by affording RBI greater control over money supply and enhanced efficacy in implementing monetary policy.

Design Choices for CBDC in India

The effective implementation of CBDC in India pivots on design decisions that dictate its functionality and economic impact. Here's an in-depth examination of some crucial concepts:

- **CBDC Type:** Wholesale and retail constitute the two primary CBDC types. Wholesale CBDC caters to interbank settlements, while retail CBDC serves the general public for day-to-day transactions.

Wholesale CBDC can facilitate interbank settlements, cross-border remittances, and transactions in capital and securities markets. It is anticipated that wholesale CBDC will enhance the efficiency of current payment transactions.³

RBI must determine the CBDC type, potentially opting for a hybrid approach based on its objectives.

- **Issuance and Management Models:** Contemplation surrounds two primary approaches for issuing and managing Central Bank Digital Currencies (CBDCs): direct and indirect models. In the direct model, RBI handles all CBDC aspects, including issuance, account management, and transaction verification, proffering enhanced control albeit demanding substantial infrastructure development. Conversely, the indirect model involves RBI issuing CBDC to commercial banks, which then disseminate it to the public. While leveraging existing banking infrastructure, this model may pose monitoring and control challenges.

- **CBDC Form:** CBDCs manifest as token-based or account-based. Token-based CBDCs mimic physical cash, where token possession signifies ownership. Accountbased CBDCs entail maintaining accounts akin to traditional bank accounts for CBDC holders.⁴The chosen form influences transaction speed, offline functionality, and integration with extant financial systems.

- **Interest-Bearing CBDC:** The decision to confer interest on CBDCs holds significance. Interest provision may incentivize CBDC holding over bank deposits, potentially impacting bank profitability and financial stability. Conversely, lack of interest might render CBDCs less appealing compared to interest-bearing financial instruments.⁵

- **Anonymity Level:** CBDCs should afford some anonymity for minor transactions akin to cash to safeguard user privacy. However, complete anonymity may impede tracking illicit activities like money laundering and tax evasion. RBI must strike a balance between anonymity and compliance with AML/CFT regulations.⁶

Potential Effects of CBDC on Indian Economy and Financial System

CBDC introduction harbors potential to substantially affect the Indian economy and financial system. Here's an exploration of some plausible outcomes:

CBDC introduction in India holds the promise of multifaceted impacts on the economy and financial system. Let's delve deeper into some of these potential ramifications:

Banking Impact:

- **Intermediation:** A significant concern surrounding CBDCs is their potential to disrupt banks. If individuals and businesses bypass traditional banks in favor of CBDC for transactions, it might precipitate a decline in bank deposits. This could adversely affect bank profitability and lending capacity, potentially impeding economic expansion. A study by the Bank of International Settlements (BIS) for 2023 suggests widespread CBDC adoption could slash bank deposits by 10%. RBI must craft CBDC and related regulations to mitigate this risk and ensure a robust banking sector.
- **Competition and Innovation:** Conversely, CBDC can catalyze competition and innovation in the banking sphere. Banks might be incentivized to devise new products and services seamlessly integrating with CBDCs to attract and retain clientele. This could foster a more dynamic and competitive financial landscape.

Monetary Policy:

- **Enhanced Control:** CBDC could empower RBI with greater control over money supply and interest rates. Real-time CBDC transaction data might enable more targeted monetary policy implementation. For instance, RBI could directly distribute CBDC to specific regions or demographics equipped with embedded coupons to spur expenditure.
- **Challenges and Uncertainties:** Nevertheless, CBDCs' impact on monetary policy effectiveness remains subject to ongoing research. CBDC design substantially influences its monetary policy transmission impact, particularly concerning features like interest rates and commercial banks' CBDC holdings' reserve requirements.

Financial Stability:

- **Reduced Systemic Risk:** CBDCs might curtail systemic risk in the financial realm. Unlike volatile, unregulated private virtual currencies, CBDCs, as government-backed digital currencies issued by central banks, could foster heightened trust and stability.

CBDCs offer numerous advantages for payment systems and also shield the general public from the instability associated with volatile virtual currencies.⁷

- **Cybersecurity Threats:** However, CBDCs introduce novel financial system risks. Cyber assaults targeting CBDC infrastructure could yield dire consequences, potentially disrupting financial markets and inflicting widespread economic harm.

CBDCs could encounter risks such as hacking, which might result in server blockages, timeouts, or service disruptions.⁸

RBI must heavily invest in robust cybersecurity measures to counter these risks effectively.

Other Potential Effects:

- **Informal Economy Impact:** India boasts a sizable informal economy predominantly reliant on cash. CBDCs could facilitate the sector's formal economy integration by furnishing a secure and efficient digital payment avenue.
- **Cross-Border Payments Impact:** CBDCs could streamline cross-border payments, rendering them faster, cheaper, and more transparent. This could invigorate international trade and investment inflows.
- **Financial Inclusion Impact:** As earlier noted, CBDCs could play a pivotal role in fostering financial inclusion by offering an assured, accessible pathway for unbanked populations to partake in the digital economy.

Necessity of Diligent Deliberation

The potential CBDC impacts on the Indian economy and financial system are intricate and multifaceted. While presenting tantalizing growth and innovation prospects, they also entail risks and challenges. RBI must meticulously mull over these factors before contemplating CBDC issuance.

Further Investigation and Collaboration

Comprehensive research and pilot initiatives are imperative to fathom CBDC implications in the Indian milieu. RBI could collaborate with fellow central banks, financial entities, and technology firms to forge a robust CBDC framework fostering financial inclusion, innovation, and system stability.

Through judiciously assessing potential impacts and implementing apt safeguards, CBDC could metamorphose into a transformative catalyst for the Indian economy and financial system.⁹

Current Status of CBDC rollout in India

In April, 2024 monetary policy meeting, the Reserve Bank of India (RBI) proposed expanding access to its Central Bank Digital Currency (CBDC) for retail use (CBDC-R). This would be achieved by allowing non-bank payment service providers, such as popular third-party apps like PhonePe and Google Pay, to offer CBDC wallets. According to the RBI, this initiative aims to:

Data on the Central Bank Digital Currency (CBDC) in India at a Glance ¹⁰

Aspect

Aspect	Details
Introduction Year	2024
Year of start of Pilot on CBDC	2022
Type of CBDC	Retail and Wholesale
Issuer	Reserve Bank of India (RBI)
Technology Used	Blockchain and Distributed Ledger Technology (DLT)
Objective	Enhance financial inclusion, reduce transaction costs, improve monetary policy transmission
Usage	Domestic payments, cross-border payments, financial settlements
Regulation	Regulated under the RBI Act
Security Features	Advanced encryption, multi-factor authentication, anti-money laundering mechanisms
Currency in Pilot for Retail - March 2024	Rs 234 Crore
Currency in Pilot for Retail - March 2023	Rs 6 Crore
Currency in Pilot for Wholesale - March 2024	Rs 8 lacs
Currency in Pilot for Wholesale - March 2023	Rs 10.6 crore
Banks Involved	13 major banks
Current Status	Pilot running successfully,

- Increase accessibility: By including more players in the system, the RBI hopes to make CBDC-R more readily available to the public.
- Offer more choices: Users will have a wider range of options for holding and managing CBDC-R.
- Test system resilience: Expanding distribution channels allows the RBI to assess the system's capacity to handle a larger volume and variety of transactions.

Building on its July 2023 move to enable interoperability between UPI and CBDC, this proposal signifies the RBI's focus on fostering a more robust and user-friendly digital payment ecosystem.

Conclusion

CBDC is an opportunity that can be leveraged in this era but it arrives with lot of challenges. Many countries have decided to roll out CBDC based on it's advantages, it is imperative for India too, that is does not fall behind in development of this fintech tool and associated services. RBI is continuing to add tests for more sophisticated features of CDDBC in it's pilots and all the citizens should try to participate in solidifying the CDDBC initiative of RBI.

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