



# **Digital Currency in the Indian Economy: Opportunities and Challenges**

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**Abstract:** In recent years, globalization driven by technological revolutions has digitized nearly every aspect of human life, reduced barriers of time and space and making life easier worldwide. In the economic sphere, digital currency has emerged as a significant outcome of this global process. This paper examines digital currency in the context of the Indian economy and highlights the various opportunities it presents as well as the challenges it poses. The paper concludes on a positive note regarding the potential of digital currency in India.

**Keywords:** Digital Currency, Globalization, Indian Economy

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## **Introduction**

In recent years, digital currency has become deeply integrated into the global financial system, rapidly gaining prominence over traditional physical currency. Digital currency refers to any form of money that can be stored and transacted electronically using devices such as computers and mobile phones, particularly over the internet. The concept of digital money first emerged in the 1980s with the aim of creating anonymous and secure electronic transactions. One of the earliest attempts was David Chaum's DigiCash, established in 1990, which laid the groundwork for future developments in this field. The rise of the internet significantly boosted interest in digital payment systems, culminating in a major breakthrough in 2008 when an anonymous entity known as Satoshi Nakamoto introduced Bitcoin the first decentralized digital currency. This innovation marked the beginning of the cryptocurrency era, powered by blockchain technology, which enables secure transactions without the need for a central authority. Digital currency has transformed the traditional monetary system, influencing how value is transferred and stored. In India, the move towards a cashless society has been accelerated by the widespread adoption of digital currency. Across the nation, the number of digital currency users is increasing rapidly, driven by advancements in technology and a growing preference for secure, fast transactions. Today, the financial system relies on both centralized and decentralized methods of money transfer. Centralized transfers are governed by national authorities, particularly central banks. In recent years, central banks around the world have begun developing their own digital currencies, known as Central Bank Digital Currencies (CBDCs). A CBDC is

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a digital form of a country's official fiat currency and is fully controlled by the central bank. In India, the Reserve Bank of India (RBI) oversees financial operations through its CBDC initiative. The Indian CBDC is categorized into two types: retail CBDC, intended for public use and launched on December 1, 2022; and wholesale CBDC, designed for financial institutions and interbank settlements. Recently, the RBI has also permitted non-bank payment system operators to participate in distributing retail CBDC. The growing interest in CBDCs stems from their potential to enhance payment efficiency, promote financial inclusion, and reduce dependency on physical cash. This paper explores the advantages and disadvantages of digital currency, with a focus on its implementation and impact within the Indian economic context.

### **Digital currency: A critical evaluation**

*Advantages of Digital Currency are as follows:*

#### **1. Enhancing Financial Inclusion:**

Digital currency has emerged as a transformative instrument in promoting financial inclusion, particularly in developing economies such as India. A significant segment of the population approximately 190 million individuals remain outside the formal banking system (World Bank, Global Findex, 2021). Central Bank Digital Currencies (CBDCs) offer an alternative access point for financial services through mobile-based platforms, reducing reliance on traditional banking infrastructure. This is particularly beneficial in rural and underserved areas, where access to bank branches is limited. The use of digital wallets, QR codes, and offline transaction capabilities enables low-cost, real-time transactions. Moreover, digital currency facilitates more efficient Direct Benefit Transfers (DBT), allowing government subsidies, pensions, and welfare payments to be disbursed directly into recipients' digital wallets, thereby enhancing the financial resilience of economically vulnerable groups.

#### **2. Improving Cost Efficiency:**

The traditional cash-based economy entails significant operational costs including currency printing, distribution, ATM maintenance, security services, and counterfeit detection. In contrast, digital currency infrastructure significantly reduces these overheads. While cybersecurity and digital infrastructure investment are necessary, they are generally more cost-effective in the long run. The reduced need for physical cash handling, ATM networks, and associated logistics translates into fiscal savings for both the government and financial institutions. Post-2008, the economic landscape has increasingly shifted toward digital modes of transaction, driven in part by cost-efficiency and technological advances.



### **3. Accelerating Payments and Settlement:**

One of the primary advantages of digital currency is the ability to facilitate instantaneous payments and settlements, operating independently of traditional banking hours and holidays. This 24/7 accessibility enhances liquidity and improves cash flow management for both businesses and individuals. In India, the adoption of the digital rupee has seen significant growth, with its circulation value increasing from ₹234 crore in 2024 to ₹1,016 crore by March 2025. Approximately 4.6 million retail users and 400,000 merchants are currently utilizing CBDCs. The reduction in settlement times lowers counterparty risk and improves efficiency in high-value and time-sensitive transactions.

### **4. Implications for Monetary Policy:**

CBDCs provide central banks with enhanced tools for implementing and monitoring monetary policy. The Reserve Bank of India (RBI) can access real-time data on money flows and consumer behavior, thereby improving the speed and accuracy of policy responses. This greater visibility strengthens the transmission of monetary policy measures such as interest rate changes. Furthermore, CBDCs could facilitate unconventional tools, such as programmable monetary policies or the implementation of negative interest rates. However, these capabilities raise potential concerns regarding financial surveillance and data privacy. It will be critical for policymakers to balance efficiency gains with the protection of individual rights and liberties.

### **5. Promoting Transparency in the Digital Economy:**

Digital currencies, whether on centralized or distributed ledgers, offer higher levels of traceability and transparency. Transactions can be recorded and audited in real-time, enabling authorities to combat illicit financial activities such as money laundering, terrorist financing, and tax evasion. This level of traceability enhances governmental oversight, ensuring better compliance and improving public trust in the financial system. A transparent and accountable digital currency ecosystem can also support more informed monetary policymaking and fiscal governance.

### **6. Strengthening Resilience During Crises:**

The COVID-19 pandemic underscored the resilience and utility of digital currency in crisis management. Digital payment mechanisms played a pivotal role in distributing financial aid to rural and informal sector workers during periods of lockdown and restricted mobility. Consumer behavior also shifted toward contactless transactions, reducing reliance on physical cash. According to a joint report by Visa and



Worldline (Gadget 360), digital payments in India increased sixfold during the pandemic. Platforms such as UPI, mobile wallets, and QR codes became mainstream, expanding the digital ecosystem and bringing new users particularly from the informal economy into the fold.

### **7. Enhancing Monetary Control and Flexibility:**

The integration of CBDCs into the Indian economy has provided the RBI with improved control over monetary supply, especially during times of economic volatility. The programmable nature of digital currency allows central banks to implement policy changes, including interest rate adjustments, more swiftly and effectively. This increased flexibility enhances the central bank's ability to stabilize the economy and respond to financial shocks.

### **8. Improving Economic Data Collection:**

CBDCs generate vast amounts of transactional data that can be utilized for economic monitoring and forecasting. The RBI's access to granular transaction-level information supports better risk assessment and the formulation of timely macroprudential policies. This data-driven insight contributes to identifying trends, detecting anomalies, and mitigating potential risks during financial instability.

*Disadvantages of Digital Currency are as follows:*

#### **1. Risk of Disintermediation of Commercial Banks:**

One of the most frequently cited concerns surrounding the implementation of Central Bank Digital Currencies (CBDCs) is the potential disintermediation of commercial banks. Disintermediation refers to the erosion of traditional banking roles in deposit mobilization and credit creation, which are fundamental to economic development. Since commercial banks rely on public deposits to fund loans and investments, a significant migration of funds from bank deposits to CBDC holdings or digital wallets could limit the banks' lending capacity, thereby affecting credit availability and overall economic growth.

Empirical evidence from early adopters of CBDC underscores this risk. The Central Bank of The Bahamas' introduction of the Sand Dollar the world's first fully deployed retail CBDC demonstrated improved financial inclusion outcomes but also revealed challenges in maintaining the financial intermediation role of banks. Similarly, a survey conducted by the Deutsche Bundesbank on the digital Euro highlighted that up to 10% of money holdings might shift from commercial bank accounts to digital currency under certain



conditions. The extent of disintermediation depends significantly on CBDC design features such as holding limits, interest-bearing structures, and interoperability with existing financial systems (Bundesbank, 2021).

## **2. Cybersecurity Vulnerabilities:**

Digital currencies are inherently reliant on complex and secure digital infrastructures, making them susceptible to a variety of cybersecurity threats. Risks include external cyberattacks such as Distributed Denial of Service (DDoS), which can paralyze transaction networks, and targeted breaches aiming to access or manipulate digital wallets, payment gateways, or central bank servers.

Moreover, digital currencies present new attack surfaces that may be exploited by both external and internal actors. The potential for double-spending, token forgery, and transaction manipulation increases if robust cryptographic safeguards are not in place. Insider threats from personnel with privileged access to sensitive systems also pose non-negligible risks. Furthermore, insufficient protection of transaction metadata may compromise financial privacy, raising the dual threat of cybercrime and state surveillance. As such, maintaining the integrity, confidentiality, and availability of digital currency systems is a continuous and costly endeavour requiring advanced threat mitigation strategies and regulatory oversight.

## **3. Gaps in Regulatory and Legal Infrastructure:**

The successful deployment of CBDCs depends significantly on the existence of a well-defined legal and regulatory framework. In India, while the Reserve Bank of India (RBI) has cautiously advanced CBDC pilot programs, a comprehensive statutory basis for digital currency remains underdeveloped. The absence of clear legislation creates ambiguity around several critical domains:

*Data Privacy and Security:* There is a pressing need to establish frameworks for how user data is collected, stored, shared, and protected.

*Consumer Protection:* Mechanisms for redressal in cases of fraud, technical failures, or erroneous transactions are not yet clearly defined.

*Cybercrime Legislation:* Current legal instruments do not adequately address the specific threats posed by digital currency, including unauthorized access, token duplication, and system tampering. Given the cross-sectoral nature of digital currencies, policy harmonization between the RBI, the Ministry of Finance, and technology regulators is essential. Establishing a dedicated Digital Currency Act that clearly delineates



legal definitions, institutional responsibilities, and compliance standards is imperative for fostering public trust and ensuring legal certainty in digital financial systems.

#### **4. Public Awareness and Adoption Barriers:**

Despite significant progress in digital payment infrastructure in India most notably through platforms such as the Unified Payments Interface (UPI) the mass adoption of digital currency continues to face substantial challenges. Public trust, digital literacy, and infrastructure access remain uneven, particularly in rural and underserved regions.

##### **Key barriers to adoption include:**

Low digital and financial literacy, especially in semi-urban and rural communities. Concerns over data misuse and digital fraud, which deter users unfamiliar with online financial platforms. Linguistic and technological barriers, such as the lack of user interfaces in regional languages or the requirement of smartphones and stable internet connections.

For digital currency to achieve inclusive adoption, it must be accessible, secure, and culturally attuned to the diverse demographics of the Indian population. Government and central bank efforts should include widespread awareness campaigns, financial education initiatives, and incentives for early adoption. Importantly, platforms must be designed with inclusivity in mind—catering not only to tech-savvy urban users but also to the digitally marginalized.

##### **Implications of Digital Currency on the Indian Economy:**

India is currently one of the fastest-growing economies in the world and is actively working towards becoming a digitally advanced nation. A key component of this transformation is the integration of digital currency into its financial system. The adoption of digital currency has multi-dimensional implications spanning economic, financial, business, and societal spheres.

From an economic perspective, digital currency offers significant cost-saving benefits. Unlike fiat or physical currency, which incurs substantial expenses related to printing and material procurement, digital currency reduces or eliminates these costs. Kasana and Singh (2024) argue that the adoption of CBDCs can lower transaction costs and enhance the speed of transactions, contributing to a more efficient financial ecosystem.



Additionally, digital currency can play a critical role in expanding the monetary base, which refers to the increase in the most liquid forms of money in the economy. The Reserve Bank of India (RBI) often seeks to expand the monetary base to stimulate economic growth, combat deflation, and respond to economic crises, such as the COVID-19 pandemic, which is vital for macroeconomic management. The centralized nature of the Digital Rupee allows the RBI to maintain control and oversight, which is crucial for monetary policy implementation (Bhavsar, 2024).

From a financial standpoint, digital currency has shown strong potential in reducing fraud-related risks. Carrying large amounts of physical cash poses security threats, including theft and loss, whereas digital transactions are inherently safer and more traceable. Moreover, digital currencies lower operational expenses associated with cash handling and transaction processing.

According to the study "Evolution of Digital Currency and Its Economic and Financial Implications in China", while digital currencies may intensify competition among commercial banks, they can also impact their profitability and autonomy. In the Indian context, the rise of digital currency is beginning to affect bank deposits, as consumers increasingly transfer funds to digital wallets rather than traditional bank accounts. However, this challenge presents an opportunity for commercial banks to invest in digital infrastructure and adopt innovative financial technologies to remain competitive in the evolving financial landscape.

### **Conclusion:**

Digital currency presents significant opportunities for the Indian economy, including enhanced financial inclusion, cost efficiency, faster payments, improved monetary policy implementation, and greater transparency in financial transactions. The Reserve Bank of India's CBDC initiatives both retail and wholesale are key steps toward modernizing India's financial infrastructure. Despite clear challenges such as cybersecurity threats, regulatory gaps, disintermediation risks, and adoption barriers, the overall outlook is optimistic. The benefits outweigh the drawbacks when appropriate regulatory, technological, and educational frameworks are in place. With continued investment, legal clarity, and public engagement, digital currency can support India's transition to a more efficient, inclusive, and resilient digital economy.

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