NEXT IAS

DAILY EDITORIAL ANALYSIS

TOPIC

Untapped Potential of Offline Central Bank Digital Currencies (CBDCs)

UNTAPPED POTENTIAL OF OFFLINE CENTRAL BANK DIGITAL CURRENCIES (CBDCS)

Context

- In the evolving digital global economy, **Central Bank Digital Currencies (CBDCs)** have garnered significant attention in terms of payment efficiency, transaction costs, and monetary policy implementation, the potential of **offline CBDCs** (without constant internet connectivity) remains largely unexplored. It's imperative that policy makers turn their attention to its untapped potential.

About the Central Bank Digital Currencies (CBDCs)

- CBDCs are **digital forms of a country's sovereign currency**, issued and regulated by the central bank.
- Unlike cryptocurrencies, which are decentralised and often volatile, CBDCs are designed to be stable and secure, backed by the full faith and credit of the issuing government.
- They function similarly to physical cash but exist in a digital format, making them accessible through digital wallets and other electronic means.
- It aims to combine the benefits of digital transactions with the trust and stability associated with traditional fiat currencies.
- Many **countries around the world** are actively exploring and implementing Central Bank Digital Currencies (CBDCs) like *China (Digital Yuan); Bahamas (Sand Dollar); Nigeria (eNaira); European Union (Digital Euro); Russia (Digital Ruble); and Australia (eAUD).*
- Several other countries, including South Korea, Thailand, Singapore, and South Africa, are also in various stages of CBDC **exploration and pilot testing.**

How do CBDCs impact payment efficiency, transaction costs, and monetary policy implementation?

- **Payment Efficiency:** CBDCs can enhance payment efficiency by providing a faster, more reliable, and secure means of transaction. They can reduce the time required for transactions to settle, especially in cross-border payments, which traditionally take longer and involve multiple intermediaries.
  - It can lead to a more streamlined and efficient payment system.
- **Transaction Costs**: By reducing the need for intermediaries, CBDCs can lower transaction costs. Traditional payment systems often involve fees for processing payments, currency conversion, and other services. CBDCs can minimise these costs by enabling direct transactions between parties.
  - It can be particularly beneficial for small businesses and consumers who often bear the brunt of high transaction fees.
- **Monetary Policy Implementation:** CBDCs offer central banks new tools for implementing monetary policy. They can provide more precise control over the money supply and interest rates. For example, central banks can directly influence the amount of money in circulation by issuing or withdrawing CBDCs.
  - Additionally, CBDCs can improve the transmission of monetary policy by ensuring that changes in policy rates are more quickly and effectively reflected in the economy.

India's Journey Towards CBDCs

- The **Reserve Bank of India (RBI)** has been actively working on the phased introduction of the **digital rupee (e₹)**, which was formally announced in the **Union Budget 2022-23**.

Digital Rupee (e₹)

- It is a tokenized digital version of the Indian Rupee, issued by the RBI.
- The e **uses blockchain and distributed ledger technology** to ensure security and transparency.
- It is issued in the same denominations as physical currency and can be used for both person-to-person (P2P) and person-to-merchant (P2M) transactions

Types of e₹

- **Wholesale Digital Rupee (e₹-W):** It is designed for financial institutions and is used for interbank settlements.
- **Retail Digital Rupee (e₹-R):** It is intended for consumer and business transactions, making it accessible to the general public.

Need for Offline CBDCs

- The primary motivation behind offline CBDCs is to provide a reliable and secure means of digital payment in regions where i**nternet access is sporadic or non-existent**. This is particularly relevant in developing countries and remote areas where digital infrastructure is still catching up.
- Offline CBDCs can bridge the gap, ensuring that everyone has access to digital financial services.

Technological Approaches

- **Stored-Value Cards:** Similar to prepaid cards, these can store digital currency and facilitate transactions without needing an online connection.
- **Near-Field Communication (NFC):** This technology allows devices to communicate and transfer funds through close proximity, even without internet access.
- **QR Codes:** Users can scan QR codes to complete transactions, which can be verified later when the device reconnects to the internet.

Untapped Potential of Offline CBDCs

- **Financial Inclusion:** One of the primary motivations behind CBDCs is to enhance financial inclusion. By providing a digital alternative to cash, CBDCs can reach underserved populations who may not have access to traditional banking services.
  - It holds significant promise for enhancing financial inclusion and resilience, particularly in regions with limited internet access.
- **Bridging the Digital Divide:** In many parts of the world, reliable internet connectivity is still a luxury. Offline CBDCs can empower individuals in these areas by providing them with access to digital financial services without the need for continuous internet access.
  - It can be a game-changer for rural and underserved communities, enabling them to participate in the digital economy and access financial services that were previously out of reach.
- **Enhancing Financial Resilience:** Offline CBDCs also offer a layer of resilience that is crucial in times of crisis. Natural disasters, cyber-attacks, or technical failures can disrupt internet connectivity, rendering online financial systems inoperable.
  - Offline CBDCs can ensure that financial transactions continue seamlessly even in such scenarios, providing a reliable alternative to traditional banking systems.
  - It is not only beneficial for individuals but also for businesses and governments, ensuring continuity of operations during emergencies.
- **Privacy and Security:** Transactions conducted offline can be designed to be more secure and less susceptible to cyber threats.
  - Additionally, offline CBDCs can provide a higher degree of privacy for users, as transactions do not need to be constantly monitored online.
  - It can be particularly appealing in regions where concerns about data privacy and security are paramount.

Challenges and Considerations

- **Implementation Challenges:** Ensuring the security and integrity of offline transactions **requires robust technological solutions**. Central banks need to address issues related to **counterfeiting, double-spending,** and ensuring that offline transactions are accurately recorded once connectivity is restored.
  - Implementing CBDCs requires robust technological infrastructure to ensure security, scalability, and accessibility.

- Moreover, developing the necessary infrastructure **to support offline CBDCs** requires significant investment and collaboration between governments, financial institutions, and technology providers.

- **Privacy Concerns:** Balancing the need for privacy with the requirements for regulatory oversight is a critical challenge. Ensuring that CBDCs offer conditional anonymity similar to physical cash is essential.
  - Privacy concerns need to be addressed, as offline transactions should maintain user confidentiality while preventing illicit activities.
  - Ensuring security and preventing fraud in offline transactions is paramount.
- **Impact on Banking Sector:** The introduction of CBDCs could affect traditional banking operations, particularly in terms of deposit mobilisation and loan creation. Central banks need to carefully manage this transition to avoid destabilising the financial system.
- Additionally, there needs to be a robust mechanism for **synchronising offline transactions** with the central ledger once connectivity is restored.

Conclusion

- The untapped potential of offline CBDCs represents a promising avenue for enhancing financial inclusion and resilience. By providing access to digital financial services in areas with poor internet connectivity and ensuring continuity of transactions during crises, offline CBDCs can play a pivotal role in the future of digital finance.
- Policymakers and financial institutions must recognize this potential and work towards developing and implementing offline CBDC solutions that are secure, reliable, and accessible to all.

Source: BL

Mains Practice Question

[Q] How can offline Central Bank Digital Currencies (CBDCs) be effectively leveraged to promote financial inclusion and enhance the resilience of payment systems, especially in regions with limited internet connectivity and infrastructure?