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Indian Digital Currency: Present and Future

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What is digital currency?

Digital currency is currency that is available entirely in electronic form. Electronic forms of currencies already dominate the financial systems of a large number of countries. However, digital currency is exchanged exclusively through virtual means and does not leave computer networks. The three major varieties of digital currency are crypto currencies, central bank digital currencies (CBDCs), and stable coins. With the recent popularity of cashless or digital financial structures, world governments and central banks are exploring (some of them have even implemented) digital currencies.

About 114 countries are exploring CBDCs, and about 60 countries are in the advanced stage. Countries that have already launched retail CBDCs (R-CBDCs) are the Bahamas, Cambodia, the Eastern Caribbean, Nigeria, China, and Jamaica. Central banks that are exploring a specialized wholesale CBDC (W-CBDC) include Singapore, Australia, Saudi Arabia, and the European Union. Russia – The digital ruble has completed initial testing—full cycle of transactions announced by the Central Bank of Russia. China – Plans to launch eCNY or digital Yuan by 2022. Digital currency is an electronic form of money that anyone can use in contactless transactions. Union Finance Minister Nirmala Sitharaman announced the launch of a Central Bank Digital Currency (CBDC) in the 2022 Union Budget speech.

She also said that the issuance of this new form of currency will help in promoting the digital economy and will also make the currency management system cheaper and more efficient.

According to RBI, CBDC will be a sovereign currency available in digital form. Like normal currency issued by a central bank, a CBDC will also appear as a liability on the central bank's balance sheet. Simply put, a CBDC is a digital form of the Indian Rupee that you can exchange one-to-one with fiat currency. Thus, they can be easily used for consumer to consumer, consumer to business and business to business transactions.

What are the benefits of digital rupee?

Some of the advantages of digital currency are as follows:

Fast way to pay

Digital currency can clear your payments much faster than existing means such as automated clearinghouses or wire transfers, which take several days for financial institutions to confirm transactions.

cheap global transfers

Sometimes global transactions can be very expensive. Individuals are charged high fees for transferring money from one country to another, especially when it involves currency conversion. Digital assets can disrupt this market by making transactions cost-effective and instant.

24/7 availability

Digital currency transactions work at the same speed i.e. 24 hours a day, seven days a week. On the other hand, existing money transfers often take longer during weekends and outside normal working hours because banks are closed and transactions cannot be confirmed.

No manufacturing required

Physical currencies have several requirements such as the establishment of physical manufacturing facilities. Whereas, digital currencies do not involve any such expenses. Furthermore, digital currencies are immune to dirt or physical defects present in physical currency.

E-Rupee can act as a viable alternative to paper currency, which requires a lengthy process with huge costs to the government to issue and circulate. For example, for each Rs 100 note, the cost estimate is around 15%-17% of the entire expenditure over the four-year lifecycle, including printing, distribution and returns due to soiling. As cash circulation increases, it puts pressure on the environment due to its carbon footprint as well as distribution and storage channels. Large amounts of cash in circulation means pressure on regulators and governance in terms of printing, distribution and storage, leading to numerous risks such as counterfeiting, spoilage and security risks. RBI reports a rise in counterfeit Rs 2,000 and Rs 500 currency notes in FY 2021-22, with counterfeit notes posing a major risk. A major risk in carrying cash is the risk of loss or theft. E-Rupee gives central banks better control over usage and distribution. This is one of the primary motivations for the RBI to launch a CBDC.

Given the increase in adoption of mobile and internet-based payments, apart from improving the cumbersome cross-border transaction process, launching e-Rupee in India will also mean taking a step towards a digital economy. One of the top priorities of the G20 is to enhance cross-border payments and it is implied that a CBDC could be a suitable tool. Cross-border transactions always involve time-consuming processes involving strict compliance checks due to their dependence on correspondent bank availability and time zone. Financial institutions that have reserves with the RBI can transact in CBDCs and make it easier to mitigate counterparty risks. CBDCs are also expected to speed up the process by automating transactions and settlement methods. Some other potential areas where CBDCs can be leveraged to ease the transaction process include government securities and international foreign exchange trading. The design of a CBDC depends on the functions it is expected to perform, as outlined by the RBI in its concept note. Who will determine the implications of a CBDC for payment systems, monetary policy, and the structure and stability of the financial system? design. The primary consideration is that the design features of a CBDC should be the least disruptive.

Streamlined government payments

If the government develops a central bank of digital currency, it could send payments like child benefits and food stamps and tax refunds to people instantly, instead of trying to locate a prepaid debit card or send them a check.

Current status of digital currency:

RBI launched a pilot of retail CBDC in December 2022 and aims to achieve 10 lakh transactions a day in December 2023. In 2017, a high-level Inter-Ministerial Committee (IMC) was constituted under the Department of Economic Affairs in the Ministry of Finance (MOF) on the governance and use of virtual currencies in India and the digital currency exchange of fiat currency using distributed ledger

technology. form was recommended. (DLT). The MoF's Department of Financial Services, Ministry of Electronics and Information Technology (MeitY) and the Reserve Bank of India (RBI) were invited to form a special group that will look into the legal and technical development of the CBDC. Without any official recognition of cryptocurrencies, the RBI started planning on future CBDC development. RBI on 16 December 2020 announced a regulatory sandbox to test next generation technologies on cross border payments to collect field test data and evidence of benefits and risks on the financial ecosystem. On January 29, 2021, the Government of India introduced a bill to ban trading and investment in crypto currencies while giving legal power to the RBI to develop a CBDC using the experience gained from handling the Unified Payment Interface (UPI), instant payments. Proposed what was called a "programmable digital rupee.

According to the 2021 Currency and Finance Report released by the RBI, the sovereign-backed CBDC should promote financial inclusion by de-anonymizing monetary transactions and direct transfers. It must be consistent with national and global anti-money laundering and economic terrorism laws. RBI was planning the initial phase of CBDC trials from December 2021. But it has now been moved to Q1 2022 ahead of a phased nationwide rollout. According to Governor Shaktikanta Das, the RBI is still discussing whether to adopt a centralized system or use distributed ledger technology. While the preliminary study will be conducted soon, the RBI initiated internal assessment on the scope, legal framework, calibration, technology, distribution and verification mechanisms of the CBDC citing the increase in digital transactions during the COVID 2018-19 pandemic. The Government of India is working on amendments to the Coinage Act, 2011, the Foreign Exchange Management Act (FEMA), 1999, the Information Technology Act, 2000 and the Crypto-Currency and Official Digital Currency Bill, 2021 that will regulate CBDCs.

The pilot in the wholesale segment, known as Digital Rupee-Wholesale (e-W), was launched on 1 November 2022, with the use case limited to settlement of secondary market transactions in government securities. The use of (e-W) is expected to make the inter-bank market more efficient. Settlement of central bank funds will reduce transaction costs by pre-empting the need for settlement guarantee infrastructure or collateral to reduce settlement risk. The pilot in the retail segment, known as Digital Rupee-Retail (e-R), was launched on December 1, 2022, within a closed user group (CUG), consisting of participating customers and merchants.

Reliance Retail in partnership with Innovity Technologies, ICICI Bank and Kotak Mahindra Bank becomes the first large organized retail chain in the country to accept e-R. CCAvenue becomes the first payment gateway to process e-R for online retail transactions. A collaboration was launched between Indraprastha Gas and IndusInd Bank, with the aim of enabling the use of digital rupee at specific gas stations within the National Capital Region (NCR) region.

1. Digital Rupee is the electronic version of our currency which can be used for all your digital transactions. You can load a CBDC wallet and redeem the wallet balance to your linked bank account in just seconds. Moving forward, many new functionalities and use cases will continue to be explored. Currently, a pilot project is going on with 13 banks to provide this facility to their customers. With the rollout of interoperability with UPI, CBDC users are now able to transact on any UPI QR (merchant or individual) across the country.

2. To be on-board, one must be a customer of any of the following 13 pilot banks: SBI eRupee by SBI, ICICI Bank Digital Rupee by ICICI Bank, IDFC First Bank IDFC First Bank Digital Rupee, Yes Bank Yes Bank Digital Rupee, , HDFC Bank HDFC Bank Digital Rupee, Union Bank of India Digital Rupee by UBI, Bank of Baroda Bank of Baroda Digital Rupee, Kotak Mahindra Bank Digital Rupee by Kotak Bank, Canara Bank Canara Digital Rupee, Axis Bank Axis Mobile Digital Rupee, IndusInd Bank By IndusInd Bank Digital Rupee, PNB PNB Digital Rupee and Federal Bank Federal Bank Digital Rupee. The pilot will initially cover four cities, Mumbai, New Delhi, Bengaluru and Bhubaneswar and will later expand to Ahmedabad, Gangtok, Guwahati, Hyderabad, Indore, Kochi, Lucknow, Patna and Shimla. The scope of the pilot can be gradually expanded to include more banks, users and locations as required.

Future of Indian Digital Currency:

The RBI is looking at adding offline usage capability to the digital rupee to provide availability and flexibility in the event of network outages or programmability issues. Without the need to check-in with an online ledger, offline digital payment systems can validate transactions and confirm the existence of funds. The offline capability and programmability of the digital rupee has been announced by the RBI on 8 February 2024. e -R will allow offline transactions in locations with irregular or non-existent internet access. To accomplish this goal, multiple proximity and non-proximity-based offline methods will be evaluated in hilly, rural and urban settings. Users such as government agencies will be able to guarantee that defined benefits are paid due to programmability. Similarly, corporates will have the ability to schedule certain expenses such as employees' business trips. It is also possible to program additional features such as validity periods or regions in which the CBDC can be used.

"It is proposed to introduce an offline functionality in the CBDC-R (Retail) to enable transactions in areas with poor or limited internet connectivity," it said while announcing the bi-monthly monetary policy review. The pilot currently enables person-to-person (P2P) and person-to-merchant (P2M) transactions using digital rupee wallets provided by banks. "It is now proposed to enable additional use cases using programmability and offline functionality. Programmability, for example, would allow users such as government agencies to ensure that payments are made for defined benefits. Similarly, corporates will be able to schedule specified expenses such as business travel for their employees.

Additional features such as validity period or geographical area within which the CBDC can be used can also be programmed. Second, it is proposed to introduce an offline functionality in CBDC-R to enable transactions in areas with poor or limited internet connectivity. Multiple offline solutions (proximity and non-proximity based) will be tested for this purpose in hilly areas and rural and urban locations

"It is now proposed to enable additional functionality of programmability and offline capability in CBDC retail payments," the RBI said in its latest monthly Governor statement. "Programmability will facilitate transactions for specific/targeted purposes, while offline functionality will enable these transactions in areas with poor or limited internet connectivity."

India has plenty of them – in remote places and its hilly areas where it is hard to build widespread mobile networks.

New functions are to be introduced gradually through more pilot programs.

Indian media report that Governor Shaktikanta Das has outlined scenarios for a programmable digital rupee, including allowing government agencies to ensure that payments to citizens are made only for defined benefits. They said, Businesses can "schedule specified expenses, such as business travel, for their employees." Das also envisions linking digital cash to geographies.

RBI's e-Rupee plan extends beyond creating a programmable and offline CBDC. It plans to establish a principles-based framework for authentication of digital payment transactions. It has already tested additional factor authentication – including SMS-based OTP – but would like some more options. "At present, India's potential growth is driven by structural factors such as improvement in physical infrastructure, development of world-class digital and payments technology, ease of doing business, increase in labor force participation and improvement in the quality of fiscal spending."

Another way India wants to build its digital economy is to allow itself to tax more.

Bloomberg reported that the country would call for scrapping a 1998 agreement on no taxes on digital goods. If India is successful, tariffs could be allowed on a wide variety of goods – from software downloads to video games.

India has argued that existing international agreements lead to loss of tariff revenue and affect its trade competitiveness.

In short:

By introducing the digital rupee, the RBI hopes to address the problems associated with existing physical currencies and cross-border transactions.

Cross-border money transfers and converting money into foreign currency are difficult and expensive. With the launch of digital rupee, instant cross border money transfer the bank is set to make cash management and operations more seamless.

In India, carrying and keeping track of cash is a challenge. CBDC can address anonymity and solve it in a non-intimidating way and reduce the demand for cash. The government will save costs of operations, printing, distribution and storage – empowering the government's vision towards a cashless economy.

The technology is clearly evolving in parallel to the end user, and use cases are growing with the emergence of new methods of payment. Payments are the core of any financial institution and it is becoming imperative for central banks to provide avenues that provide new world functionality for relevance. Central bank digital currency (CBDC) is a medium that aims to help central banks facilitate a wider range of financial services. RBI sees e-Rupee/Indian CBDC – i.e., the digital form of fiat currency issued and regulated by it – as a next generation payment mode that is seamless, ubiquitous and anonymous, providing value and a satisfying experience to customers.

