THE FINANCIAL CREST'S GAZETTE

The Financial Crest's Official Blog

DIGITAL CURRENCY

Report by Arvind Krishnamurthy

Digital currencies are the currencies which are available in Electronic Form. It can be accessible only through electronic devices like smartphone and computers because they exist only in electronic form.

Digital currency transactions are done through the e-wallet which are connected through designed networks. It also helps to transact instantly across the countries in world.

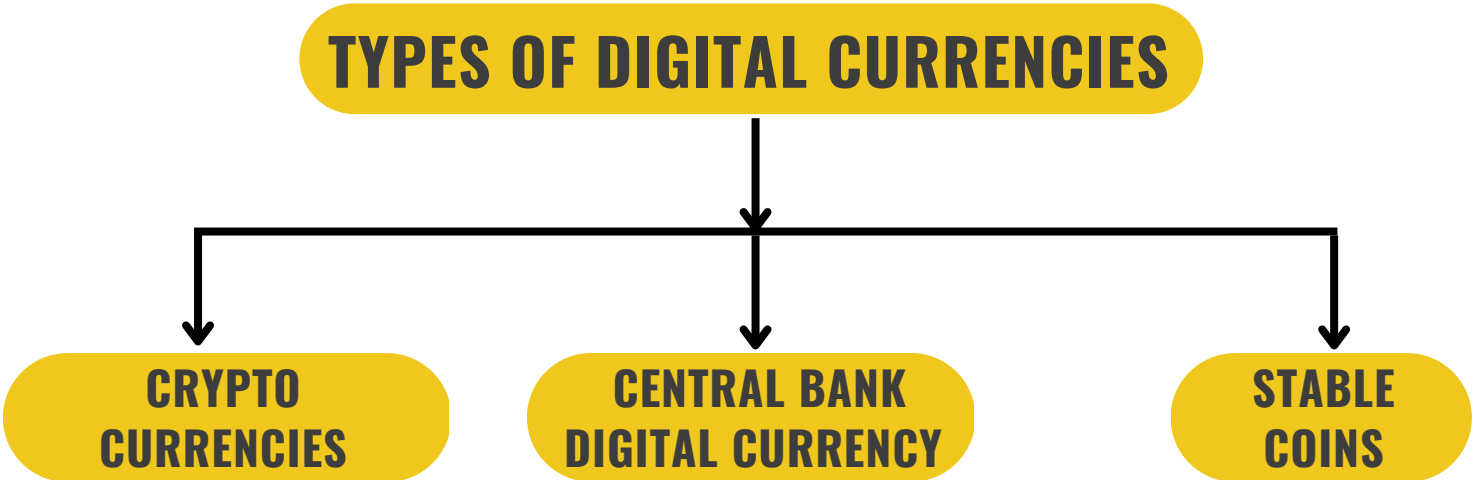
By using the digital currency, the physical usage of the notes and coins will get eradicated.

THE DIGITAL RUPEE (E₹)

The Digital Rupee (e₹) or eINR or E-Rupee is a tokenised digital version of the Indian Rupee, to be issued by the Reserve Bank of India (RBI) as a central bank digital currency (CBDC)

Digital Rupee uses the blockchain distributed ledger technology.

Like bank notes it will be uniquely identifiable and regulated by RBI



Crypto Currencies

It is the form of currency that exists digitally or virtually and uses some cryptography to secure the transaction.

Crypto Currency is a digital payment system that doesn't rely on banks to verify the transactions. It is an intangible form of money which cannot be touched or felt.

Block chain technology helps to setup the foundation of the cryptocurrency.

Some of the types of Crypto Currencies are Bitcoin, Ethereum, Litecoin, Ripple, etc

Stable Coins

They are crypto asset pegged to another asset like fiat currencies or precious metals. It is designed to maintain the stable price in the market so that users can avoid the volatility risks.

Central Bank Digital Currency (CBDC)

Central Bank Digital Currency (CBDC) is a digital form of country's fiat currency. It is issued by the Central Bank or the Nation's Monetary Authority of the country.

In recent years, digital currencies have been legally accepted in the world in the form CBDC.

The Central Bank can control CBDC which is more stable and secure in form of digital payment. CBDC are started to implement in some countries and some countries have started to use it. It is in the experimental phase in many countries.

CBDC IMPLEMENTATION

Some countries around the world have already started implementing CBDC. The first country to implement CBDC was The Bahamas which is called **“Sand Dollar”**.

8 Countries of Eastern Caribbean use **“DCash”**. Jamaica is using **“JAM-DEX”**. Recently Nigeria has become the part of the implementation and currency named as **“eNaira”**.

There are 17 countries are in the pilot status and other countries have are under research and development status.

In that 2 countries have cancelled the CBDC from their countries

The Reserve Bank of India (RBI) has issued a concept note on Central Bank Digital Currency (CBDC) on October 7, 2022.

How does Central Bank Digital Currency (CBDC) works?

CBDC are digital currencies issued to the public by the central bank and backed by the government.

They can be used for various transactions like paying to employees and paying for the goods and services rendered.

It is similar to existing digital payment methods but without the need or help of banks.

It is instantly captured on a single digital ledger of CBDC transaction.

CBDC IN INDIA

RBI has launched pilots of CBDC in both Wholesale and Retail segments. The pilot in wholesale segment, known as the Digital **Rupee -Wholesale (e₹-W)**, was launched on November 1, 2022, with use case being limited to the settlement of secondary market transactions in government securities. Use of (e₹-W), is expected to make the inter-bank market more efficient.

Settlement in central bank money would reduce transaction costs by pre-empting the need for settlement guarantee infrastructure or for collateral to mitigate settlement risk.

The pilot in retail segment, known as digital **Rupee-Retail (e₹-R)**, RBI has already rolled out a pilot on December 01, 2022. The e₹-R is in the form of a digital token that represents legal tender. It is being issued in the same denominations as the paper currency and coins. It is being distributed through financial intermediaries, i.e., the banks. Users will be able to transact with e₹- R through a digital wallet offered by the participating banks. Transactions can be both **Person to Person (P2P)** and **Person to Merchant (P2M)**.

RBI has identified eight banks for phase-wise participation in the retail pilot project. The first phase includes four banks, namely the State Bank of India, ICICI Bank, Yes Bank and IDFC First Bank. Subsequently, another four banks, viz., Bank of Baroda, the Union Bank of India, HDFC Bank and Kotak Mahindra Bank will participate in the retail pilot.

The e₹-R offers features of physical cash like trust, safety and settlement finality. Like cash, the CBDC will not earn any interest and can be converted to other forms of money, like deposits with banks.

A digital currency is likely to save operational costs – of printing, distributing and storing currency notes with a portion of the cash in circulation likely being replaced with online legal tender.

For printing every Rs 100 note, the cost works out to be about Rs 15-17 rupee (15-17% on each tender) in its four-year life cycle, according to a market estimate. The cycle entails a chain of printing new notes and soiled notes coming back to RBI via commercial banks.

By reducing the involvement of physical notes in the economy, the extent of unaccounted money being circulated will start to see a slow phase out in the long run.

Model for issuance and management of CBDC

There are two models for issuance and management of CBDCs viz. Direct model (Single Tier model) and Indirect model (Two-Tier model). A Direct model would be the one where the central bank is responsible for managing all aspects of the CBDC system viz. issuance, account-keeping and transaction verification.

In an Indirect model, central bank and other intermediaries (banks and any other service providers), each play their respective role. In this model central bank issues CBDC to consumers indirectly through intermediaries and any claim by consumers is managed by the intermediary as the central bank only handles wholesale payments to intermediaries.

The Indirect model is akin to the current physical currency management system wherein banks manage activities like distribution of notes to public, account-keeping, adherence of requirement related to know-your-customer (KYC) and anti-money laundering and countering the terrorism of financing (AML/CFT) checks, transaction verification etc.

Forms of CBDC

CBDC can be structured as 'token-based' or 'account-based'. A token-based CBDC is a bearer-instrument like banknotes, meaning whosoever holds the tokens at a given point in time would be presumed to own them.

In contrast, an account-based system would require maintenance of record of balances and transactions of all holders of the CBDC and indicate the ownership of the monetary balances.

Also, in a token-based CBDC, the person receiving a token will verify that his ownership of the token is genuine, whereas in an account-based CBDC, an intermediary verifies the identity of an account holder.

Considering the features offered by both the forms of CBDCs, a token-based CBDC is viewed as a preferred mode for CBDC-R as it would be closer to physical cash, while account-based CBDC may be considered for CBDC-W.

Forms of CBDC

The payment of (positive) interest would likely enhance the attractiveness of CBDCs that also serves as a store of value. But, designing a CBDC that moves away from cash-like attributes to a "deposit-like" CBDC may have a potential for disintermediation in the financial system resulting from loss of deposits by banks, impeding their credit creation capacity in the economy. Also considering that physical cash does not carry any interest, it would be more logical to offer non-interest bearing CBDCs.

Degree of Anonymity

For CBDC to play the role as a medium of exchange, it needs to incorporate all the features that physical currency represents including anonymity, universality, and finality. Ensuring anonymity for a digital currency particularly represents a challenge, as all digital transactions would leave some trail. Clearly, the degree of anonymity would be a key design decision for any CBDC. In this regard, reasonable anonymity for small value transactions akin to anonymity associated with physical cash may be a desirable option for CBDC-R.

While the intent of CBDC and the expected benefits are well understood, it is important that the issuance of CBDC needs to follow a calibrated and nuanced approach with adequate safeguards to address potential difficulties and risks in order to build a system which is inclusive, competitive and responsive to innovation and technological changes. CBDC, across the world, is mostly in conceptual, developmental, or at pilot stages. Therefore, in the absence of a precedence, extensive stakeholder consultation along with iterative technology design may be the requirement, to develop a solution that meets the requirements of all stakeholders.

CBDC is aimed to complement, rather than replace, current forms of money and is envisaged to provide an additional payment avenue to users, not to replace the existing payment systems. Supported by state-of-the-art payment systems of India that are affordable, accessible, convenient, efficient, safe and secure, the Digital Rupee (e₹) system will further bolster India's digital economy, make the monetary and payment systems more efficient and contribute to furthering financial inclusion.

Technological Choice

CBDCs being digital in nature, technological consideration will always remain at its core.

The infrastructure of CBDCs can be on a conventional centrally controlled database or on Distributed Ledger Technology.

The two technologies differ in terms of efficiency and degree of protection from single point of failure. The technology considerations underlying the deployment of CBDC needs to be forward looking and must have strong cybersecurity, technical stability, resilience and sound technical governance standards.

While crystallising the design choices in the initial stages, the technological considerations may be kept flexible and open-ended in order to incorporate the changing needs based on the evolution of the technological aspects of CBDCs.

UPI VS CBDC

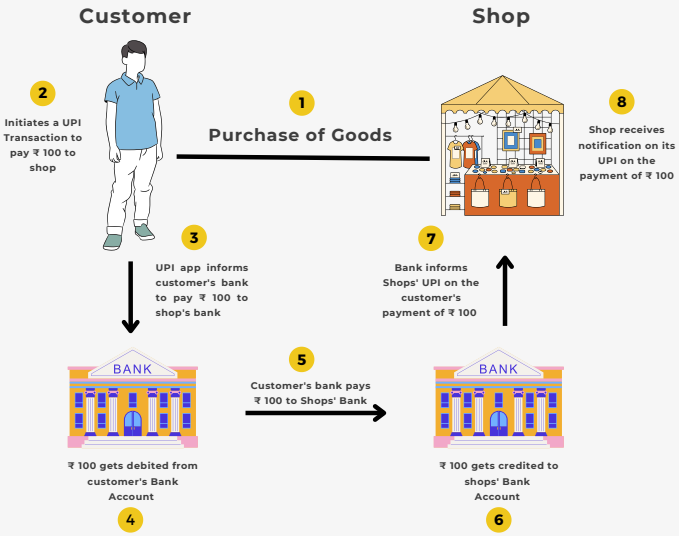
Unified Payments Interface (UPI)

Unified Payments Interface is a real time payment system that allows everyone to instantly transfer money between bank accounts using their mobile devices anywhere and anytime.

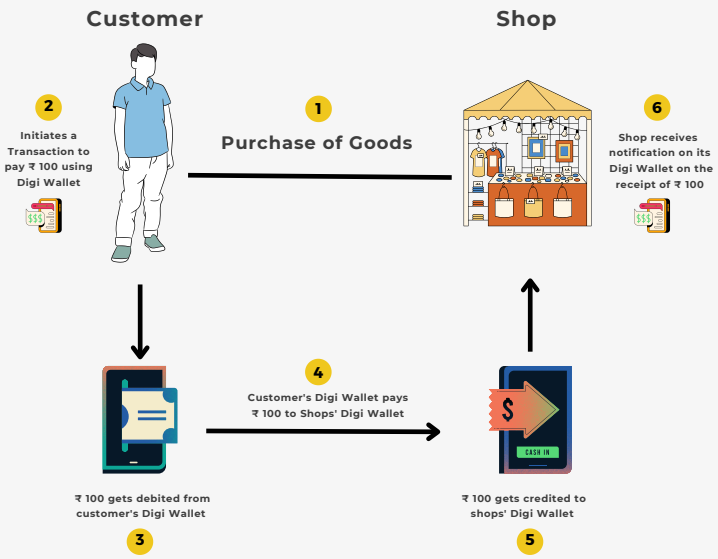
For using UPI transactions, the individual or user must download the UPI enabled app which is linked with their bank accounts.

UPI allows the real time process without using the physical usage of cash and using bank drafts.

UPI Transaction



CBDC Transaction



Difference between UPI and CBDC

For a UPI transaction, you must require bank accounts for individuals to use. For CBDC individual bank account will not be required.

UPI transactions are backed by physical currency. This means the payment will not go through if the user's bank account does not have enough funds. CBDC can be used for digital payments in lieu of currency/cash. CBDC issued by RBI and is a legal tender in itself. It need not necessarily be backed by physical currency.

UPI it is available only in Online or Internet. Major benefit of using e-rupee is that it will allow offline transaction through SMS or QR code concept.

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