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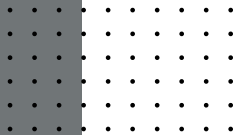


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INTRODUCTION TO CBDC

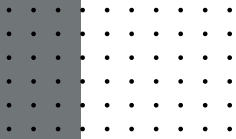
Central Bank Digital Currency is what CBDC stands for. A nation's central bank issues and backs this particular sort of digital currency. CBDCs are issued and managed by a central authority, typically a nation's central bank, in contrast to decentralized cryptocurrencies like Bitcoin and Ethereum that are not backed by any governments. CBDCs are designed to enable quicker and more effective payments by serving as a digital substitute for traditional currency. No matter if a person has a bank account or not, CBDCs are intended to be safe, open, and accessible to everybody.



Some nations, such as China, Sweden, and the Bahamas, have already begun to issue their own CBDCs. Other nations, like the United States, the European Union, and Japan, are also considering the potential of doing the same. One of the main advantages of CBDCs is that they can be faster and more efficient than traditional payment methods. Transactions can be settled in real-time, without the need for intermediaries like banks or payment processors. This can reduce transaction fees and make payments more accessible to people who don't have access to traditional banking services.

CBDCs can also improve the security and privacy of financial transactions. Because they are digital, CBDCs can be designed to be resistant to fraud and counterfeiting. They can also incorporate advanced encryption and security measures to protect users' personal and financial information.

However, CBDCs also pose significant challenges, particularly around issues of privacy and security. While CBDCs can be designed to be more secure than traditional payment methods, they also require a high level of trust in the central bank as a custodian of the currency. There are also concerns around the potential for CBDCs to be used for illegal activities, such as money laundering and terrorist financing.



Another challenge with CBDCs is the potential impact on the banking system. Because CBDCs can be held directly by individuals, they may reduce the need for traditional bank accounts and payment services. This could lead to a decline in the profitability of banks and other financial institutions, which could have implications for financial stability. Despite these challenges, CBDCs are being explored and developed by central banks around the world. China has already launched a digital version of its currency, the digital yuan, while countries like the United States, Japan, and the European Union are all exploring the possibility of launching their own CBDCs.

WORKING OF CBDC:

1. Issuance: The central bank issues its digital money to approved organizations, like banks or payment service providers. The CBDC may be issued in a retail format for use by the general public or in a wholesale format for significant financial institution transactions.
2. Storage: The CBDC is kept in digital wallets that can be accessed via a website, smartphone app, or other online resource. Banks, other financial institutions, or the central bank itself may offer the wallets.

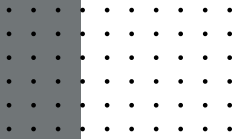
3. Transfers: A QR code can be scanned, a text message can be sent, or a mobile app can be used to transfer CBDCs between digital wallets. Real-time settlement of transactions makes them quicker and more effective than conventional payment systems.

4. Safety: CBDCs are made to be safe and resistant to theft and forgery. With the purpose of preventing illegal access and maintaining the currency's integrity, they might employ cutting-edge encryption and security methods.

5. Regulation: CBDCs must abide by the same laws against money laundering (AML) and know-your-customer (KYC) as traditional currencies. To maintain conformity with monetary policy and financial stability goals, the central bank may additionally oversee and control the usage of CBDCs.

TYPES OF CBDC

1. Wholesale CBDCs: They are used to streamline interbank settlements and other high-value transactions and are created with financial institutions in mind. Typically, only approved financial institutions that meet specific requirements have access to wholesale CBDCs; the general public often does not.
2. Retail CBDCs: The general public can use these digital representations of a nation's money to conduct regular business. Digital wallets can be used to hold retail CBDCs, which can then be used for online, in-store, and inter-person



transactions. With minimal transaction costs and quick settlement times, they are created to be as open and user-friendly as possible.

FORMS OF CBDC

1. Account-based CBDCs: These are digital versions of a country's currency that are held in accounts that are managed by the central bank or authorized financial institutions. Account-based CBDCs require users to have a bank account or digital wallet to access and use the currency

2. Token-based CBDCs: These are digital versions of a country's currency that are held in digital wallets and are designed to be used as tokens. Token-based CBDCs do not require users to have a bank account, and transactions can be made without intermediaries.

3. Hybrid CBDCs: These combine features of both account-based and token-based CBDCs. Hybrid CBDCs can be held in digital wallets and can be used as tokens, but they can also be linked to bank accounts for additional features and functionality.

In conclusion, CBDCs represent a potentially transformative development in the world of finance and payments. While there are significant challenges to be addressed, the potential benefits in terms of speed, efficiency, and security make CBDCs an exciting prospect for the future of money.

DID YOU KNOW?

THE MANAGING DIRECTOR OF THE INTERNATIONAL MONETARY FUND, KRISTALINA GEORGIEVA, POINTED OUT THAT GOVERNMENTS AROUND THE WORLD WILL NEED INITIAL HELP FROM PRIVATE COMPANIES TO ESTABLISH A NEW DIGITAL SYSTEM. THE TECHNOLOGY USED IN CBDC CALLED DISTRIBUTED LEDGER TECHNOLOGY, OR DLT FOR SHORT, IS QUITE SIMILAR TO THE BLOCKCHAIN TECH USED IN OPEN-SOURCE CRYPTOCURRENCIES (SUCH AS BITCOIN). THERE WILL, FOR SURE, BE A LOT OF PLACES FOR PUBLIC-PRIVATE PARTNERSHIPS, AND INDUSTRY AROUND CRYPTO TECHNOLOGIES WILL CONTINUOUSLY SUPPORT THE FINANCIAL WORLD. WITH THE STRONG ENTRY OF THE UNITED STATES, FORESEEN AFTER BIDEN'S SIGNATURE ON A NEW INITIATIVE FOR DIGITAL ASSETS REGULATION, THE USA TRIGGERED THE START OF THE RACE IN TECHNOLOGY.



CBDC IN INDIA

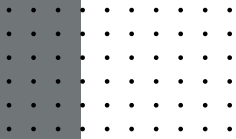
The Advantages of CBDC over other digital payments systems are

1. CBDC is supported directly by the RBI, as opposed to cryptocurrencies, which are backed by any government entity. As a result, CBDC is regarded as more secure and dependable than other digital payment methods.
2. CBDC transactions are faster and less expensive than traditional payment systems because they take place directly between the payer and the payee, with no intermediaries.
3. CBDC can enhance financial inclusion by giving people who do not have bank accounts access to financial services. It is accessible by cell phone and does not require a bank account.
4. CBDC provide higher security and privacy than standard payment systems. It can be protected by encryptions and digital signatures, making it more secure.
5. By granting central banks more influence over the money supply, CBDC can enhance the transmission of monetary policy. Real-time monitoring of money flows by central banks can aid in their decision-making regarding interest rates, money supply, and inflation.

“The history of money is entering a new chapter. Countries are seeking to preserve key aspects of their traditional monetary and financial systems while experimenting with new digital forms of money,” – Kristalina Georgieva, managing director, IMF on CBDC

How CBDCs is different from The Existing Payments Apps?

It stands to reason that you would have questions of this nature. Let me give you a simple explanation so that you may comprehend it easily. Most of us in metro cities make digital payments such as UPI, RTGS, NEFT, and so on. Banking solutions have been at the heart of all formats. To transfer money from one account to another, you must first have a bank account. These account transfers are the responsibility of the associated commercial banks. Consumers cannot conduct direct transactions in which the responsibility is held by the central bank unless it is tangible currency. The Central Banks will bear the obligation in the case of CBDC. Individuals are not required to hold a bank account



Do India need CBDCs?

In recent years, India has set a precedent in the field of digital payments. India has been at the forefront of digital payments with the launch of UPI and the Jandhan Yojna. According to one statistic, UPI accounts for 60% of India's online payments, and digital payments have increased from \$61 billion to \$300 billion. Given rising online sales and digital adoption, the value of digital payments is estimated to reach \$1 trillion by FY26.

A further compelling argument in favour of India implementing CBDCs is the emergence of cryptocurrencies. Being fiat currencies, CBDCs might also shield the general public from the unusually high amount of volatility other cryptocurrencies face. This may be a significant deterrent for central banks to view CBDCs as a reliable and secure form of digital currency.

"India's high currency to GDP ratio holds out another benefit of CBDCs. To the extent large cash usage can be replaced by CBDCs, the cost of printing, transporting, storing and distributing currency can be reduced."

Where does India Stand in the Global CBDC Race?

There are 5 categories under which the countries can be classified based on their current stage:-

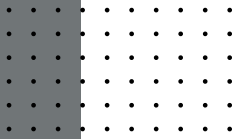
- 1.CBDC already launched
- 2.Pilot Phase
- 3.Development Phase
- 4.Research Phase
- 5.Rest of the Countries

India belongs to the third stage.

Does India need CBDC for Wholesale or Retail Payments?

Wholesale payments are high-value exchanges between banks and other financial organisations. India already has effective and dependable payment mechanisms for wholesale transactions in the form of RTGS and NEFT. Therefore, it can be claimed that CBDC is not required for wholesale payments.

Retail Payments: Retail Payments are low-value exchanges between people or companies. UPI, which has proved successful in encouraging digital payments and financial inclusion, is India's current retail payment system. But there are other issues that must be resolved, such as high transaction costs and sluggish settlement times. A CBDC for retail payments may enhance the efficiency, cost-effectiveness, and speed of digital transactions.



MONITORING RISK ACROSS THE FINANCIAL SYSTEMS THROUGH CBDC

Central Bank Digital Currency (CBDC) can potentially enhance the ability of central banks to monitor risk across the financial system. CBDC is a digital form of fiat money that is issued and backed by a central bank. Unlike traditional forms of currency, CBDC can be traced and tracked in real-time, which provides greater transparency and accountability in financial transactions.

Here are some ways in which CBDC can be used for monitoring risk

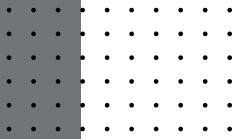
Real-time monitoring of transactions: - CBDC enables real-time monitoring of financial transactions, which allows central banks to track the flow of funds across the financial system. This provides greater transparency and accountability in financial transactions and allows central banks to identify potential risks and take corrective action when necessary. For example, if a large amount of funds is flowing out of a particular bank or financial institution, the central bank can investigate whether this is a sign of financial stress or potential insolvency.

Risk-based supervision: - With CBDC, central banks can monitor the risk profiles of financial institutions in real-time and adjust their supervisory approaches accordingly. This enables the implementation of risk-based approaches to regulatory supervision. For example, if a bank is engaging in riskier activities than usual, the central bank can increase its supervisory scrutiny. This helps to ensure that regulatory oversight is more effective and efficient, reducing the likelihood of financial crises.

Enhanced transparency: - CBDC can help to reduce systemic risks by enhancing the transparency of financial transactions. In a traditional financial system, it can be difficult to trace the flow of funds across different financial institutions and instruments. However, with CBDC, every transaction can be tracked in real-time, which can help to identify potential risks before they become systemic. For example, if a particular type of financial instrument is being traded more frequently than usual, the central bank can investigate whether this is a sign of market manipulation or other forms of misconduct.

Dynamic stress tests: - CBDC can be used to conduct dynamic stress tests on the financial system. Stress tests are used to evaluate the resilience of the financial system to various shocks, such as a sudden increase in interest rates or a decline in asset prices. With CBDC, central banks can simulate different scenarios and assess the impact on the financial system. This enables central banks to identify potential risks and take corrective action before they become systemic.

Identification of financial crimes: - CBDC can be used to identify financial crimes such as money laundering and terrorism financing.



With the ability to track the flow of funds across the financial system in real-time, central banks can identify suspicious transactions and investigate them. This helps to reduce the risks associated with financial crimes and enhances the integrity of the financial system.

In conclusion, CBDC has the potential to enhance the ability of central banks to monitor risk across the financial system. Real-time monitoring of transactions, risk-

based supervision, enhanced transparency, dynamic stress tests, and identification of financial crimes are some of the ways in which CBDC can be used for monitoring risk. However, the implementation of CBDC also raises several technical, operational, and policy challenges that need to be addressed to ensure its effectiveness and safety. Central banks will need to work closely with other regulators and stakeholders to develop a regulatory framework that ensures the safety, efficiency, and effectiveness of CBDC systems.

DID YOU KNOW?

IN THE DIGITAL AGE, TRUST IS SOMETHING THAT IS NOT EASILY ACHIEVED, KNOWING THAT DIGITAL INFORMATION CAN BE MANIPULATED. THE IMPORTANT PART OF THE CBDC'S SUCCESS WILL BE IN PROVIDING SECURITY MECHANISMS TO PROTECT USERS' PRIVACY. THE PRIVACY OF FINANCIAL TRANSACTIONS IS OF UTMOST IMPORTANCE. SOME OF THE CRITICISM COMES FROM THE HUMAN RIGHTS COMMUNITY THAT IS CONCERNED ABOUT THE CONTROL OF CITIZENS BY OPPRESSIVE GOVERNMENTS.

IN THE FUTURE PLANS FOR CBDC, 'PROGRAMMABILITY' OF MONEY IS A STRIVING GOAL. THE EASIEST WAY TO IMAGINE PROGRAMMABILITY IS TO IMAGINE, FOR EXAMPLE, MONEY THAT CAN BE SPENT ONLY IN A CERTAIN WAY. THIS RAISES CONCERNS ABOUT CONTROL MECHANISMS THAT CAN BE IMPOSED, AND SOME GROUPS SEE IT AS PART OF SOCIAL REWARD SYSTEMS, OFTEN MENTIONING CHINA'S FAST PUSH IN THE DEVELOPMENT OF THE DIGITAL YUAN AS A REASON TO BOOST THE SOCIAL REWARD SYSTEM.



EXPLORING THE POTENTIAL IMPACTS OF CBDC ON AGRICULTURAL COMMODITIES IN INDIA

With the increasing interest and implementation of Central Bank Digital Currencies (CBDCs) around the world, India is also considering the development of its own CBDC. As the country with the world's largest population of farmers, this technology could have significant impacts on the agricultural sector, particularly in terms of commodity prices and trading.

Agricultural commodities, such as wheat, rice, and sugar, play a crucial role in India's economy and are often subject to price fluctuations due to various factors such as weather, supply and demand, and government policies. The introduction of a CBDC could provide greater transparency and efficiency in the trading of these commodities, potentially reducing price volatility and benefiting both producers and consumers

However, there are also potential challenges and risks associated with CBDC implementation, such as cybersecurity concerns and potential disruption to traditional banking systems. It is important to explore and understand these potential impacts before implementing CBDCs on a larger scale. This topic could be further developed by examining the potential impacts of CBDCs on specific agricultural commodities in India, as well as considering the perspectives of different stakeholders such as farmers, traders, and government officials

DID YOU KNOW?

THE RESERVE BANK OF INDIA'S (RBI'S) RETAIL CENTRAL BANK DIGITAL CURRENCY (CBDC) PILOT HAS SO FAR GENERATED ABOUT 770,000 TRANSACTIONS, WITH A USER BASE OF 50,000 CUSTOMERS AND 5,000 MERCHANTS, THE CENTRAL BANK SAID ON WEDNESDAY. IT IS LOOKING TO EXPAND THE SCOPE OF THE PILOT BY INCLUDING NINE MORE CITIES INTO THE FOLD FROM THE CURRENT FIVE CITIES WHERE THE PILOT IS BEING UNDERTAKEN.



CBDC: A GLOBAL SCENARIO

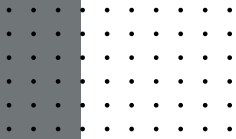
Across the globe, more than 60 central banks have expressed interest in CBDC globally. A few implementations in the retail and wholesale sectors are currently undergoing testing, while many more are developing, testing, or launching their own CBDC frameworks.

A total of 105 nations, accounting for 95% of the world's gross domestic product as of July 2022, are investigating CBDC (GDP). 10 nations have introduced CBDCs, with Jamaica's JAMDEX being the most recent. The first was the Bahamian Sand Dollar in 2020.

17 additional nations—including powerful economies like China and South Korea—are currently engaged in the pilot stage and preparing for potential launches. China was the first major economy to pilot a CBDC in April 2020, and by 2023 it hopes that the e-CNY will be widely used domestically. CBDCs are being viewed more and more as a revolutionary development and as the next development in the growth of the sovereign currency.

Different jurisdictions have justified the adoption of CBDC for very diverse reasons. Some of them are enumerated below:

- Central Banks, faced with dwindling usage of paper currency, seek to popularise a more acceptable electronic form of currency (like Sweden)
- Jurisdictions with significant physical cash usage seeking to make issuance more efficient (like Denmark, Germany, Japan or even the US)
- Countries with geographical barriers restricting the physical movement of cash had the motivation to go for CBDC (e.g. The Bahamas and the Caribbean with small and large numbers of islands spread out)
- Central Banks seek to meet the public's need for digital currencies, manifested in the increasing use of private virtual currencies, and thereby avoid the more damaging consequences of such private currencies.



BIS INNOVATION HUB WORK ON CENTRAL BANK DIGITAL CURRENCY (CBDC)

The Bank for International Settlements (BIS) established the BIS Innovation Hub to investigate emerging technologies and their possible influence on central banking. Central bank digital currencies (CBDCs) are one of the BIS Innovation Hub's primary areas of study.

In conjunction with central banks around the world, the BIS Innovation Hub has been actively exploring and experimenting with CBDCs. Its CBDC work includes investigating various CBDC design choices, assessing the possible advantages and dangers of CBDCs, and building CBDC prototypes.

In addition, the BIS Innovation Hub has created a network of central banks to encourage collaboration and knowledge sharing on CBDCs. The Multiple CBDC (mCBDC) Bridge network intends to facilitate cross-border interoperability between different CBDCs and to investigate the possibilities for international payments utilising CBDCs.

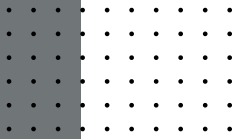
Overall, the BIS Innovation Hub's CBDC work aims to assist central banks in making informed judgements on whether to issue a CBDC and, if so, how to design and effectively administer it.

The BIS Innovation Hub advances the development of CBDCs and promotes innovation in central banking more broadly by offering a platform for experimentation and cooperation.

CBDC has gained in popularity as a result of developments in payments, finance, and technology, as well as the disruption produced by Covid-19. According to a poll of central banks conducted by the BIS in 2021, 86% are actively researching the possibilities of CBDCs, 60% are experimenting with the technology, and 14% are executing trial programmes.

A central bank digital currency (CBDC) is essentially a digital banknote. Individuals might use it to pay businesses, stores, or each other (a "retail CBDC"), while financial institutions could use it to settle trades in financial markets (a "wholesale CBDC").

Central banks are investigating whether CBDC could help them achieve public-good goals such as maintaining price stability and providing safe and robust payment systems and infrastructure.



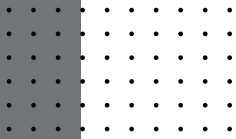
CBDCs, if effective, might ensure that, as economies transition to digital, the general public retains access to the safest form of money - a claim on a central bank. This could improve payment option diversity, speed up and lower the cost of cross-border payments, increase financial inclusion, and perhaps permit fiscal transfers in times of economic crises (such as a pandemic).

The BISIH wants to contribute to this area by conducting applied technology research, proofs of concept (POCs), and prototypes in collaboration with central banks around the world.

FACTS

THE INTRODUCTION OF CBDC CRYPTOCURRENCY IN INDIA IS EXPECTED TO OFFER A RANGE OF BENEFITS, SUCH AS REDUCED DEPENDENCY ON CASH, LESSER OVERALL CURRENCY MANAGEMENT COST, AND REDUCED SETTLEMENT RISK. IT COULD PROVIDE THE GENERAL PUBLIC AND BUSINESSES WITH A CONVENIENT, ELECTRONIC FORM OF CENTRAL BANK MONEY WITH SAFETY AND LIQUIDITY AND PROVIDE ENTREPRENEURS WITH A PLATFORM TO CREATE NEW PRODUCTS AND SERVICES. INTRODUCING CBDC IN INDIA WOULD RESULT IN A MORE ROBUST, EFFICIENT, TRUSTED, REGULATED, AND LEGAL TENDER-BASED PAYMENT OPTION (INCLUDING CROSS-BORDER PAYMENTS).

HOWEVER, THE IMPLEMENTATION OF CBDC COULD ALSO POSE CERTAIN RISKS THAT MAY HAVE A BEARING ON IMPORTANT PUBLIC POLICY ISSUES, SUCH AS RISKS TO FINANCIAL STABILITY, MONETARY POLICY, FINANCIAL MARKET STRUCTURE, AND THE COST AND AVAILABILITY OF CREDIT. THEY NEED TO BE CAREFULLY EVALUATED AGAINST THE POTENTIAL BENEFITS.



ROAD AHEAD OF CBDC

The Centralised Banking Digital Currency (CBDC) has an exciting and difficult journey ahead of it. Several central banks worldwide are actively investigating the possible applications and advantages of CBDCs, despite the fact that they are still in the experimental stage.

Future advancements that we might observe include the following:

1. Implementation of CBDCs: A number of central banks are now evaluating CBDCs, and some have already started pilot programmes. In order to strengthen monetary policy, broaden financial inclusion, and lessen the dangers connected with cryptocurrencies, more central banks are likely to introduce CBDCs in the years to come.

2. Integration with current payment systems: For CBDCs to succeed, current payment systems must be interconnected. This will necessitate major infrastructure investment. Collaboration between central banks, financial institutions, and technology providers will be necessary, as well as large infrastructure and technological investments. An increase in central bank cooperation is necessary for the creation and implementation of CBDCs. This will call for global coordination and cooperation between central banks. New international payment systems and standards might result from this.

3. Addressing privacy issues: Ensuring that users' privacy is protected is one of the main challenges facing CBDCs. The protection of personal data must be balanced with the requirement for transparency and traceability, according to central banks.

4. Regulatory frameworks: In order to ensure compliance with current laws and regulations as well as to address new risks and problems, CBDCs will need a new regulatory framework. Central banks, regulators, and other parties will need to work together to accomplish this.

5. Competition from cryptocurrencies: Since cryptocurrencies provide anonymity and decentralisation, they could pose a threat to CBDCs. In order to overcome these difficulties, central banks must present a strong substitute that offers the advantages of digital currencies without the hazards.

The road ahead for CBDCs is likely to be difficult overall, but it will also be paved with opportunity. In the upcoming years, the financial landscape may undergo substantial changes as central banks continue to investigate the potential advantages of CBDCs.



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