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Will India's CBDC Be A Useful Tool For Achieving Economic Progress?

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Abstract:

The evolution of the payment system from physical to digital is one of the greatest highlight of the 21st century in India. As the main aim of this system was to provide effective, efficient and safe transactions and due to increase need it gained importance in the COVID pandemic. India has made a remarkable progress this field in the recent past, and its journey towards digitization of payment system can be embarked from the Jana Dhan yojana to introduction of UPI and ahead. This road map has led India towards financial inclusion, where physical ₹ could be supported with e₹. This paper provides the road map of India towards the pilot launch of CBDCs in December 2022 and the milestones it can achieve in the coming years.

Key words: Digital Currency, CBDC, Financial inclusion, SWIFT, UPI, UPI123

Objectives:

1. Understanding the concept of Indian CBDCs
2. Comprehend the plan of enhancing India's digital payment ecosystem with the use of CBDCs.
3. Justify the idea of financial inclusion in India with the help of CBDCs.
4. Will the use of CBDC with UPI help in strengthening the ₹.

Problem statement:

- Will India's CBDC be a useful tool for further economic growth?
- Has increase in use of online payment system (UPI) resulted in India's economic development.

Introduction –

Digital money is that form of currency that exists only in an electronic form. This currency purely exists only in digital format and will not be available in the tangible format like rupees, dollars, coins etc. Digital currency can be used in daily transactions and is conceptual same as cash. The money stored in bank accounts is also digital, as the payment through these bank accounts without withdrawing physical cash just is reduction is numbers while any cash deposit or credit to the bank account adds up numbers to the bank account. The digital money easily can be converted into cash when money is withdrawn from the bank accounts for making physical payment. Digital money is easily transferable; the transactions become much faster and cheaper, but they are accessible only with computers or mobile phones due to its electronic existence. The cross border transactions also become easier with lesser cost as only the digital existence is exchanged and not the physical existence.

Literature review –

Central Bank Digital Currency in India: the case for digital rupee (Peterson K. Ozili, March 2023). Indians have a deep interest for Central Bank Digital Currency. CBDCs will prove to be very fruitful and dynamic in the future, but the potential, risk associated with it can't be ignored. The research paper highlights the challenges of India's CBDC-led digital currency transition, highlighting the need for a large-scale evolution in the monetary and digital field. It explores the benefits and issues surrounding CBDC, aiming to create a unique model for the rest of the world. The study contributes to Indian CBDC literature and emphasizes the need to design the best possible solution for India's specific economic and monetary conditions. (21)

To get insight into Issuance Motivations behind introducing CBDC in India (Ms. Megha Garg and Dr. Parveen Kumar) - The paper has insights of CBDC, its characteristics and motivations behind using it. The paper delves into the understanding of CBDC and its similarities to block chain technology. RBI is aiming to launch a block chain based digital rupee by 2023, which will serve as the country's official digital currency. This digital rupee will function on the block chain to make currency administration more accessible, inexpensive, and efficient, for which pilot study launch of Retail CBDC was done on 1st December 2022. It also highlights the advantages of CBDC, such as trust, safety, liquidity, settlement finality, and integrity. Several pilot launches can be done to check the hurdles and it's impact. This paper attempted to investigate and understand the basic motive in launching of CBDCs. (22)

'Central Bank Digital Currency (CBDC) Can it Replace Notes and Coins in India' (Dwijendra Kumar Kashyap and Prof. J. Meena Kumari) - The paper discusses the possibility that central bank digital currency (CBDC) could replace physical currency in India. The paper examines the need for CBDC, the possibility of a CBDC as a replacement for real currency and its gains and drawbacks for India. In India, cryptocurrencies are illegal as an exchange or storage product. Following the Hon'ble Supreme Court's judgment on the issue, RBI has to explore the probability of using cryptocurrencies. A bill on this issue will be proposed in this session of Parliament. The paper also discusses the challenges of announcing CBDC in India, the risks associated with CBDC and the likely architecture of CBDC. The document provides insight into the efforts to date to introduce cryptocurrencies worldwide, examines the possibility of financial inclusion through CBDC and the likely challenges for central banks on the monetary policy front. The article concludes by exploring the possibility of making CBDC a unique tool for person to person offline transactions which can be done without a mobile or internet connection. (2)

'Central Bank Digital Currencies (CBDCs) Policy Objectives and Challenges for Implementations' (D A Gayan Nayanajith) -- The paper discusses about concept of CBDC, its difference and comparison with cryptocurrencies and stablecoins. The CBDC has its own policy objectives which may vary. CBDC has its own obstacles and challenges. (23)

Does Central Bank digital currency (CBDC) disrupt the Cryptocurrencies market in India? - A Case Study (Dr. V. Priyadarshini, M. Shuaib Ahmed, Dr. R. Sathya, V. Chandra Lekha, D. Koteeswari, S. Ragothaman)- CBDC is not an substitute to cryptocurrencies, CBDC is an substitute to physical cash. Cryptocurrencies are investment avenues for investors. To interrupt the cryptocurrency market in India, the government and RBI need to formulate a new agenda. However, the effect of CBDC on the cryptocurrency market in India remains controversial and requires further study. The study found that there is general agreement that a CBDC is similar to cash. The study conferred that the reason for the CBDC initiative around the world is that there are benefits and challenges in implementing CBDC. Certain central banks will soon officially issue CBDCs as an alternative form of currency. The document also explains the difference between CBDC and cryptocurrencies. Therefore, in order to control the unregulated cryptocurrency market, CBDCs must set goals to achieve disruption in the cryptocurrency market. (3)

CBDC: An Indian Perspective (Mr. Cyril, Dr. Padma Nandanan) - The article discusses the importance of digital currency and especially the digital rupee in various aspects of the Indian economy. The authors examined the technology platform used to issue coins worldwide and compared it with the Indian mark. The paper also highlights the benefits and challenges of issuing these digital currencies in the Indian financial market. The authors have attempted to compile previous research studies, articles and opinions to draw conclusions for the study. Central Bank Digital Currency (CBDC) is a currency in a digital form given out by a country's central bank. The document highlights that the COVID-19 pandemic has increased central banks' interest in exploring CBDCs. The pandemic has diluted people's faith in some countries' currencies, and a substitute mean that can be useful even in a non-lockdown phase is required to avoid a liquidity crisis. CBDCs is the responsibility of the central bank, just like paper money, but only in a digital form. The paper concludes that the Indian government should consider issuing a digital rupee, which would be a safer and more efficient form of currency. The authors suggest that the Reserve Bank of India should take a proactive approach to explore the prospects of CBDC and publish information that focuses on technical analysis and the implications for monetary policy. (24)

Digitalising Indian Rupee & Cryptocurrency-ls it a threat or opportunity (Dr. Kuldeep Singh Panwar, Dr. Gaurav Lodha, Utkarsh Singh Bhadouria, Priyanka Budania, Garvita) - There is risk in using cryptocurrencies. The article analyses the evolution of money and the possibility of cryptocurrencies replacing traditional currency. It also examines the opinions on cryptocurrencies round the world and identify benefit India can take from this new technology if it adopts the right method to utilize it. The paper concludes that India can leverage cryptocurrencies by introducing its own digital currency and permitting other private currencies. (25)

'Central Bank Digital Currency and its impact on the Indian Financial System' (Abhishek Kumar) -- The paper discusses the emergence of central bank digital currency (CBDC) which is a type of digital currency, and is backed by Indian government. The author highlights the role of CBDC in shaping the payment system and its importance in the financial system. The aim of the article is to examine the effect of CBDC on the Indian financial system. The author argues that the introduction of CBDC can strengthen the monetary authority of the central bank and improve the efficiency of the existing payment system. The author discusses the benefits of CBDC, why and what needs to be researched in CBDC. The author also discusses the interest of central banks around the world in CBDC and the rise of digital payments and innovation in the financial sector. The article concludes by discussing the impact of CBDC on the Indian economy and the need for a regulatory framework for its implementation.(27)

Digital Currency: Issues, Opportunities and Challenges (Dr. Dharmendra Kumar) -- The Reserve Bank of India will launch a digital currency dubbed the "Digital Rupee" in the next financial year. A central bank digital currency is a virtual depiction of a nation's fiat money that is characterized by an electronic record or digital token. In a capitalist economy the primary role of the central bank is to protect the public faith in money The relevance of block chain, crypto currency, and the rising focus on central banks' establishing a digital currency is a recent and emerging technical challenge that banks are now facing. It important to remember that crypto money is not the same as digital currency. The study discussed the properties of central bank money in different forms like banknotes etc. It also highlights the benefits and drawbacks of Central Bank Digital Currency.(26)

Central bank digital currencies: Policy and operational perspectives for India (Satish Babu & K M Abraham) – Technological innovations combining networking, IoT devices, mobile phones etc have created considerable changes in the field of finance in the last decade. Introduction of cryptofinance is one such innovation, which can be dated even before 2009. The block chain technology helped in mining and further introduction of new products or cryptocurrencies in the cryptofinance section. These new financial products has several advantages like convenience of use, low cost & high speed transactions, irreversible transactions etc. However, they also have threats like security issues, value fluctuations, cyber security threat and even considered as an instrument that enables money laundering, and illegal trade. Due to the security and other threats Indian government has constantly opposing the private digital currencies, instead RBI is launching a CBDC, by considering policy considerations like privacy and protection of the data, its coexistence with cash, roll out through a regulatory sandbox, and considering it as the most powerful tool of financial inclusion. Considering the vast geographical area and the technological neo-literacy, certain operational considerations need to be considered. The transactions must be resilience to interruptions in network, added security against cyber-attacks, implementation on most of the technologies that are available and must be easy to use as well as transferable from current account to savings account. (1)

e₹ -- The digital currency in India – Challenges and prospects (Md. Asraful Haque , Mohd Shoaib) -- The significant advancement in the field of fintech has been marked through the launching of e₹ (e-Rupee) by the Reserve Bank of India (RBI) as a pilot project. India had many modes of digital payment modes, but the launch of UPI can be marked as a revolutionary step as this payment system can significantly influence the economy and make business transaction easier. So, CBDCs which was the digital version of the physical cash will have the exchange and storing value, and transactions between P2P and P2M would be allowed. Three transactional models are been provided by RBI, – (Direct model, two tier model and hybrid model) and

RBI will be involved in the working of all these models. Due to the challenges like digital literacy, scalability issue and security concerns faced the use of digital currency could remain limited. (10)

Monetary policy implications of CBDC with special reference to India (Debesh Bhownik) – The paper narrates gives information about the spread of India's population in rural and semi urban area. Due to lack of digital literacy the scope of spread of CBDCs will be limited. Thus in the researchers view point gradual step by step progress in the electronic payment system will be useful in introduction of CBDCs. (11)

Background study -

The medium of exchange is changing its shape and purpose over time thus the currency has evolved from physically transactional form to its digital currency form. Keeping the main objective of safe and efficient payments in mind India has shown a remarkable progress in the digital currency segment.

The digital currency has many potential benefits associated due to its digital existence. –

- Reduces the transaction time and fastens the money transfer—As the digital currencies transfers are within the same network and are done without any intermediaries they are conducted directly between the parties so transactions are instantly executed. Such transactions are cost effective as the traditional transactions involves bank transfers and clearing houses the use of digital currency.
- Efficiency in payment system – The digital currency eliminates the need of multiple bank intermediaries and clearing houses. Due to this the process of the transactions are streamlined, and due to elimination of multiple intermediaries the efficiency in the payment system increases.
- Promotes financial inclusion – The digital transactions are promoted due to the use of the digital currency, and with the use of video KYC and artificial intelligence for face matching the remotest locations having minimal digital literacy and operating in varied languages have come under the scope of use of digital currency. The technological innovations and increase of language translators, OCR have brought MI to help the spread of digital transactions. This has promoted financial inclusion caused due to use of digital currency.
- Accountability in the transactions – The digital transactions reduce the indulgence of multiple bank intermediaries and clearinghouses. The transactions are directly conducted through the UPI codes thus making the transactions more safer. The use of cashless payments increased in the pandemic era from 6% to 46% and due to its advantages it has been increasing since then.
- Hassel free international transactions – Due to the transaction pattern which excludes the intermediaries and only considers bank to bank transfer it becomes very easy to transfer money through a save user interface. This transaction pattern reduces the time, risk and physical handling of currency. Thus, even international transactions can be conducted in a hassle freeway.
- Ease to use and accessibility – The digital currencies provide a user-friendly mode of payment which is been done through user friendly and friendly payment methods like UPI. Thus, the cashless method promoted during the pandemic has shown an increasing trend.

Due to such advantages, the digital currency has become an attraction for the users in the recent times.

Some of the challenges faced in the use of E-currency are summarized as follows –

- Infrastructure issues- For the use of digital currency internet facility and a smart phone are the minimum necessities. The user should also be aware of the hazards in its use. Thus, it can prove to be a hurdle in the motive of financial inclusion.
- Hacking potential – As digital currencies are stored in the virtual wallets and are very susceptible to financial frauds. Hackers are able to steal such virtual currency if the used infrastructure is not secured and the users are not educated on these grounds.
- Regulatory concerns – Extra precautions are always needed by the users as regulations and governance on the digital currencies creates a serious challenge and potential risk, as the digital currencies can be issued even by private players.
- Volatile Value – In few countries worldwide digital currencies are traded thus experience significant price fluctuations. The price of the currency is affected by the market demand and investor behavior so the risk for the investor is on a higher side.
- Irreversible transactions – The digital currency transactions once completed cannot be undone. In case of mistake or a fraud, the transactions cannot be reversed.

- Limited acceptance – Though digital currency is prevailing in the market the acceptance by the general public is on a lower side especially in the developing countries.

A digital currency can be broadly classified into three different types – Cryptocurrencies, Virtual currencies and CBDCs.

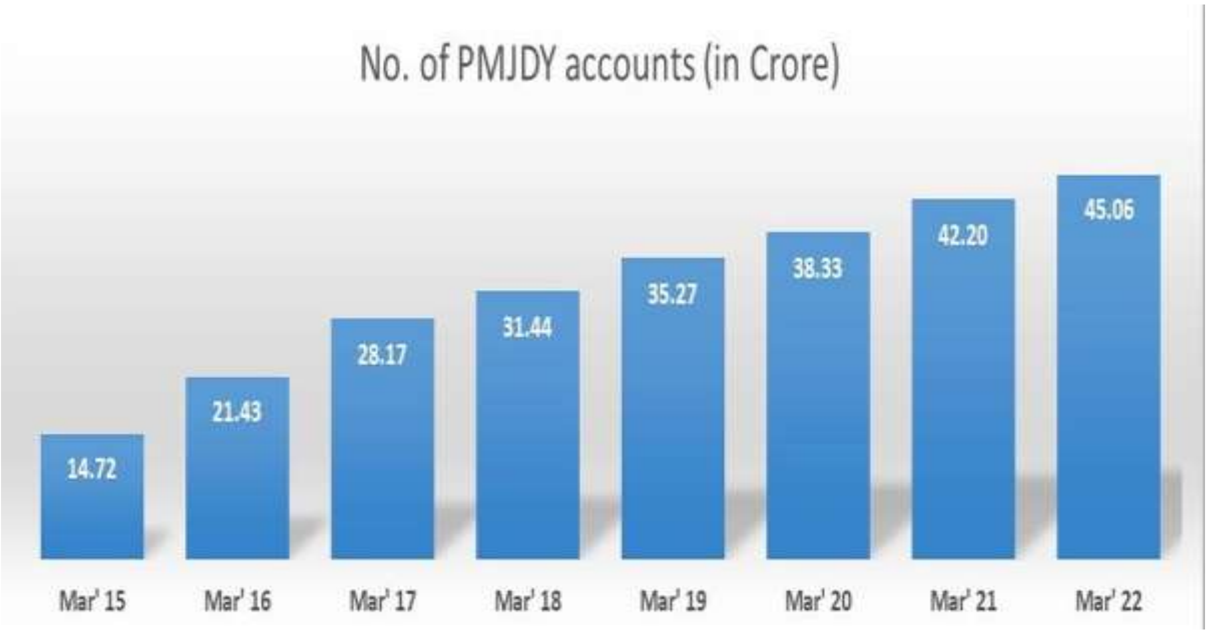
Cryptocurrency	Virtual Currency	CBDCs
The creation and control is done through cryptography.	It is a currency created and issued by private groups of developers.	They are allotted by the central bank of the country
Cryptography is used to verify and secure its transactions.	They can be algorithmically controlled by a defined network.	They are controlled by the jurisdiction of the country and can supplement or replace traditional currency.
These currencies may be of may not be regulated by the jurisdiction of the country.	It operates in an unregularly environment.	They are secured by the centralized payment system.
Eg. Bitcoins, Doggie coins, Ethereum etc.	Used for gaming and as tokens.	China, Sweden, Uruguay, England and India have introduced digital currency.

Requirements for introduction of a digital currency – For introducing a digital currency a country must have the basic infrastructure. The necessities like widespread network of bank accounts, internet connectivity in most of the parts of the country, a reliable payment interface, a strong and safe mechanism to transfer of funds, and to support all these requirements, wide spread financial literacy. Thus India needed a strong plan of financial inclusion for taking steps towards digital currency.

Road map to financial inclusion (27, 28, 29) –

Financial inclusion defined by RBI as, 'Financial Inclusion is the process of ensuring access to appropriate financial products and services needed by vulnerable groups such as weaker sections and low income groups at an affordable cost in a fair and transparent manner by mainstream Institutional players.' Rather financial inclusion can be stated as a process through which safe banking services are available at the door step at an affordable rate and are safe and easy to operate. Thus sketching a road map where 50% of the population did not have bank accounts till 2003 (34) was really difficult task for the government. The condition had hardly improved till the first step was taken towards the planning for making India stronger in financial inclusion. The seeds of the plan for improving this situation were laid in 2014 with the announcement of Pradhan Man tri Jan Dhan Yojana(PMJDY), due to which the banking system reached the strata of the society where bank accounts were not introduced till 2014.

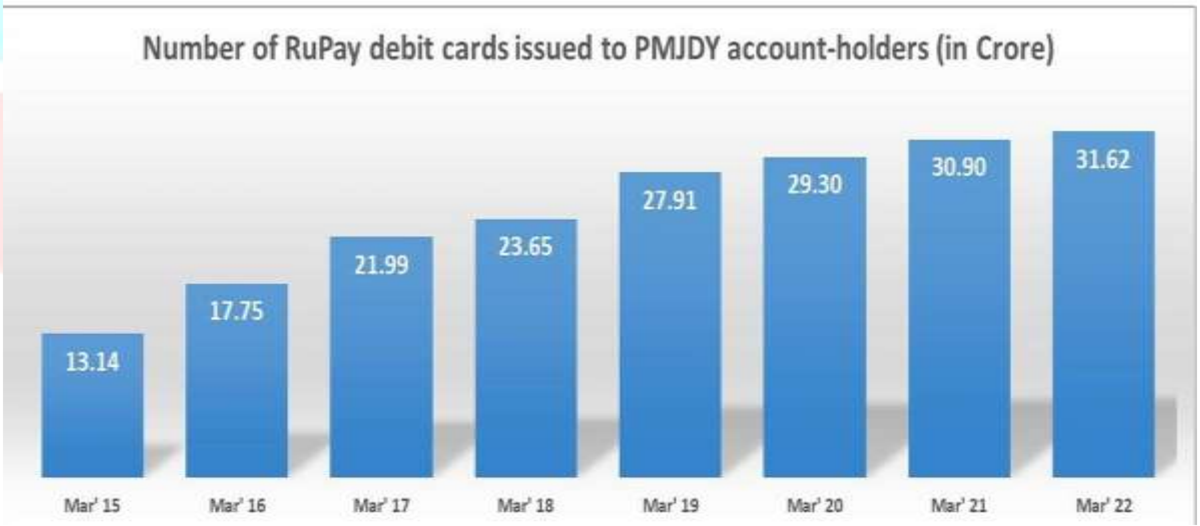
Chart 1 – Number of Jan Dhan accounts



Source: US AID report

Till 2024 May the total beneficiaries of this scheme has reached to 52.3 cr. As the Jan Dhan Yojana was launched with an objective of financial inclusion, a rupee debit card was also attached as a service. The use of the rupee card also has seen a good amount of increase since then.

Chart 2 – Number of RuPay debit cards issued with PMJDY

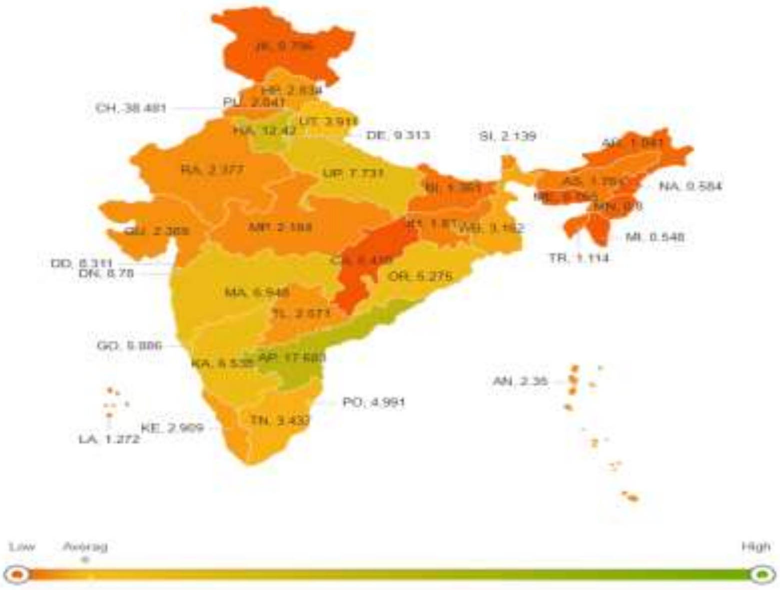


Source: US AID report

Thus the basic necessity of having bank account and a mode of digital payment was made available on which the path of financial inclusion and digital payments could be set. But the need of use of online mode of finance was not felt. To help the digital payment system Reserve Bank of India in association with National Payments Corporation of India Ltd. (NCPI) introduced a Unified Payment Interface (UPI) for conducting the peer to peer (P2P) transactions and person-to-merchant (P2M) transactions. Further in Nov 2016 Indian Government announced the demonetisation, under which the ₹1000 and ₹500 notes were banned in circulation. New currency notes were issued instead of these notes. The shortage of physical currency was felt during the span of demonetisation, but the online or digital transactions could be done very smoothly. This gave the realisation of the use of cards, NEFT, RTGS and UPI. Thus the use of cashless modes of transactions started increasing. UPI could be used easily without physical bank or physical cash. Spread of UPI during the COVID pandemic further helped in spreading the use of virtual cash. The most known and reached out virtual currency in the pre-pandemic era was (Bitcoin) Cryptocurrency. Cryptocurrencies were not been accepted by the Indian government as a legal tender. To legally control the trading in cryptocurrencies Indian Government passed a bill in 2021 – 'Cryptocurrency and Regulation of Official Digital Currency Bill.'

According to data published by NCPI the use of UPI has increased since the pandemic. The number of transactions showed the usefulness and ease to use. Since then the online transactions have increased and have spread throughout the country.

Chart 3 – Spread of Online transactions in India



Source : Digidhan by NCPI (DigiDhan Dashboard (digipay.gov.in)

According to the data presented by NCPI, entire India is using the online payment mode. This also indicated that, due to Jana Dhan Yojana all the 28 states and 9 union territories have been reached with banking network and the basic infrastructure required for using the online payment system. The use of this infrastructure was low in some areas while high is some states but financial literacy had reached to all the corners or the country. The data also showed the spread of infrastructure required, and the financial literacy required for the use of virtual currency for making transactions. (1)

Chart 4 – Road map to Digital Currency

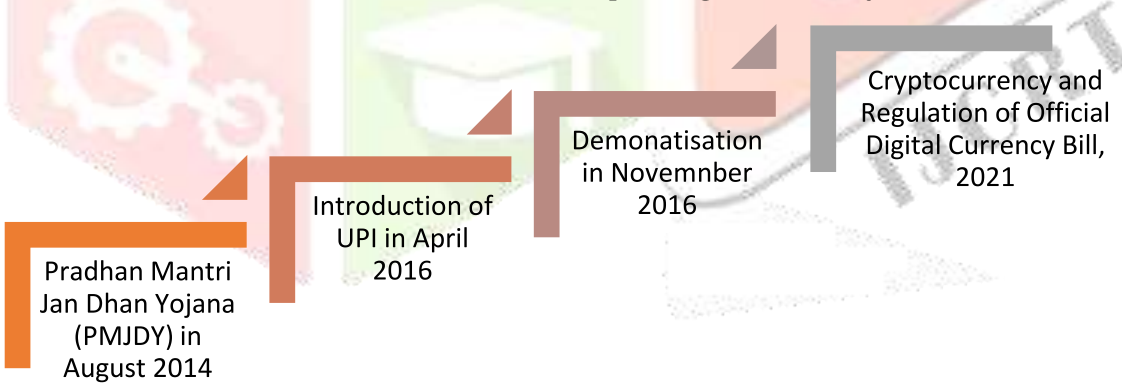


Chart 5 – Volume of transactions through UPI

Source: NCPI

The data presented by NCPI showed the increase in use of the new payment interface (UPI). The acceptance of UPI was indicated through the increase in volume of transaction, while the faith on the system was indicated through the increase in the volume in the transactions. This indicated the wide spread of use of UPI and the faith on the system was been proved.

Offline UPI with UPI 123Pay –The basic requirement of using of a digital transaction is a smart phone and internet connectivity. But this feature enables the user to perform various digital transactions using Interactive Voice Response (IVR) ie. Sound payment method.

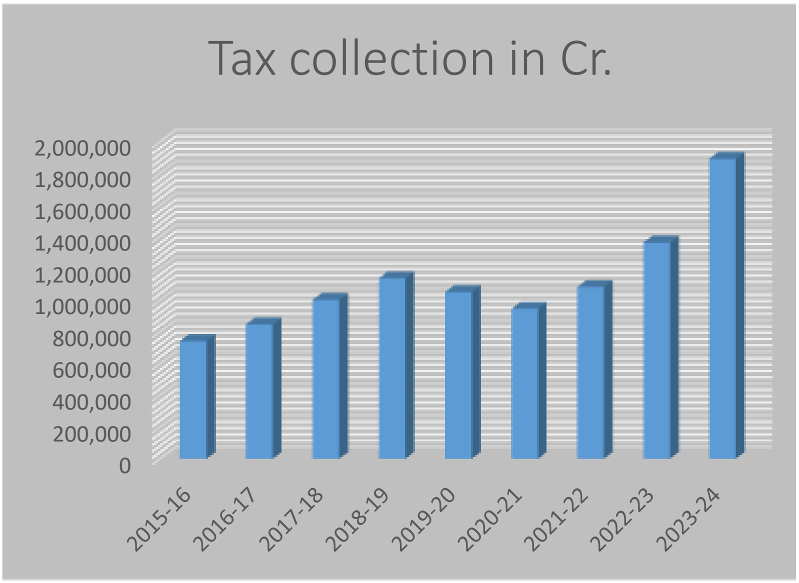
Automated recurring payments -- For facilitating the regular payments the recurring bill payment facility of UPI can be made available. Through one-time authentication the UPI user can give instructions to bank to pay the recurring said bill without any manual involvement.

UPI One World – This feature has been specially included for the foreign international travelers visiting India, where the pre-payment instrument (PPI) wallet is connected with UPI. These PPI wallets issued by banks can be used by the users outside the airport premise. This was used even during the G-20 summit to demonstrate the strength and expertise of India in the digital payment sector.

The utility of UPI in strengthening the economy can be seen by the factors like increase in GDP and direst tax collection. The direct tax collection has shown a surge since the pandemic. The use of online payment system has improved the economic scenario of India. The development of Indian economy has been seen from the increase in use of online payments (UPI). The increase in parameters like tax collection over years has been seen. The use of UPI helps in reducing the cash transactions, thus bringing the personal and business transfers under the tax bracket.

Chart 6 – Tax Collection

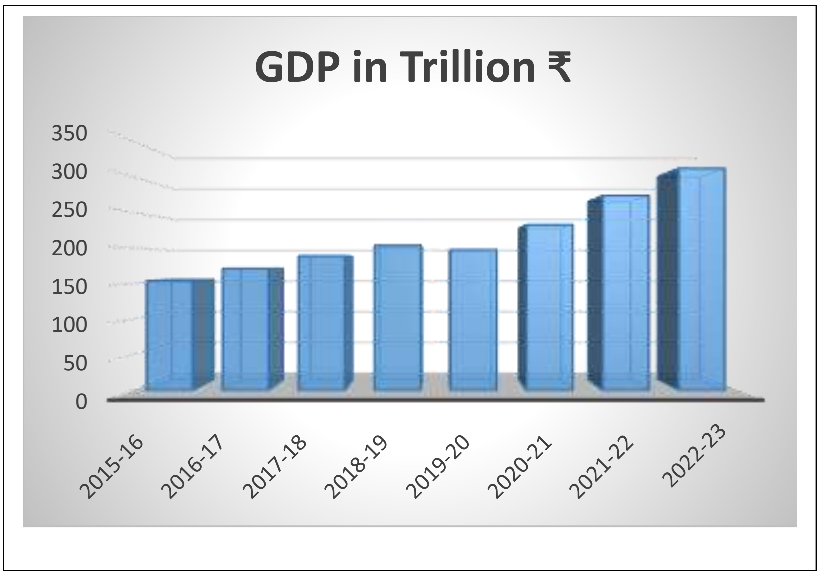
2015-16	7,41,945
2016-17	8,49,713
2017-18	10,02,738
2018-19	11,37,718
2019-20	10,50,681
2020-21	9,47,176
2021-22	10,83,150
2022-23	13,63,649
2023-24	18,90,259



Source: Central Board of Direct Taxes and Ministry of Finance

Chart 7 – India's GDP

Year	GDP in Trillion ₹
2015-16	136.82
2016-17	153.62
2017-18	170.95
2018-19	188.87
2019-20	203.51
2020-21	197.46
2021-22	232.15
2022-23	273.19



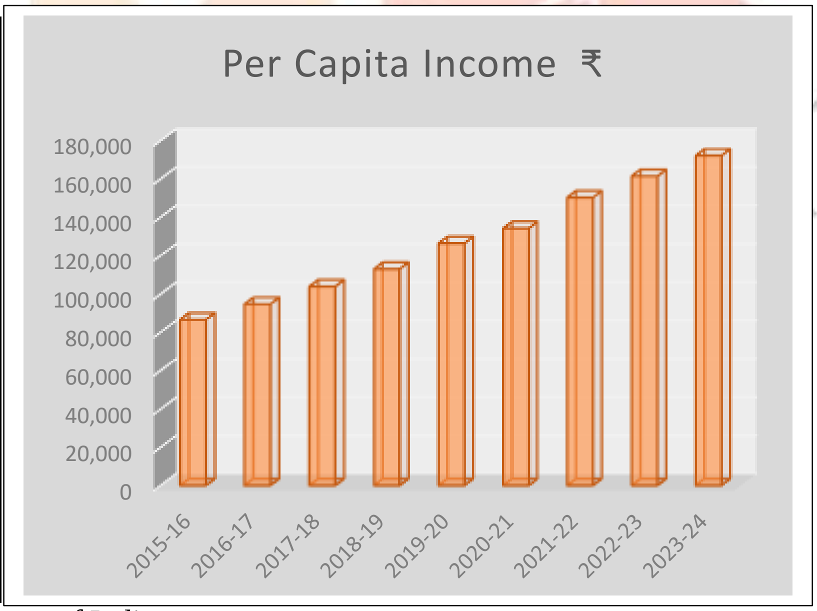
Source: World Bank data on India

A clear rise in GDP has been observed since 2019 and a surge in rise has been observed from 2021 as during the pandemic the use of online transactions increased.

Another parameter to measure the economic development is poverty. Higher per capita income of a country indicates more wealth available per person and reduction in poverty. The economic survey reports of India have stated the per capita income of India as follows,

Chart 8 – India's Per Capita Income

Year	Per Capita Income ₹
2015-16	86,454
2016-17	94,731
2017-18	1,03,870
2018-19	1,12,835
2019-20	1,26,406
2020-21	1,34,186
2021-22	1,50,326
2022-23	1,61,385
2023-24	1,72,000



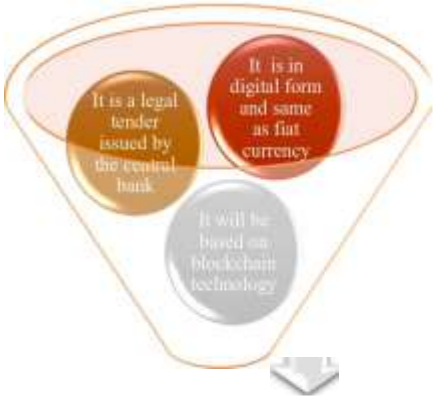
Source: Economic Survey reports of India

The per capita income data presented by the economic survey reports of India also show a clear rising trend since the same period of 2020-21.

Thus financial inclusion with online transactions has set the Indian economy on the track of growth and development. Thus the requirements for introduction of a digital currency had been achieved, now it was time to set rules and regulations for e₹.

Indian Central Bank Digital Currency – It can be defined as, "A CBDC is a legal tender issued by a central bank in a digital form. It is the same as a fiat currency and is exchangeable one-to-one with the fiat currency. Only its form is different." It is a virtual or digital version of ₹. It is totally different from other virtual currencies or cryptocurrencies, as it is backed by the central bank of India. CBDC is similar to the money which is issued by the RBI, but the difference is that it is in paper form, and CBDC is digital. It is an independent currency in digital form that appears as a currency in circulation and is treated as a liability in the Balance sheet of RBI.

Blend of CBDC can be stated as follows –



CENTRAL BANK DIGITAL CURRENCY

A block chain-based digital rupee was introduced by the Reserve Bank of India (RBI) in 2022. The report from Ministry of Finance states that RBI issued CBDCs on 7th October 2022 for conducting a pilot study. Before that the 'Digital rupee bill' was written in November of 2021. In line up with this, Shaktikanta Das (RBI Governor) had stated, 'Before introducing the CBDC, the central bank is taking its time and thoroughly evaluating all the relevant factors. The development of India's payment infrastructure will serve as a crucial foundation for the country's residents and financial institutions to have access to a cutting-edge CBDC.' Before taking a decision to introduce CBDCs the Reserve Bank of India had constantly spoken out against private digital currencies. The RBl's dispute for banning private digital currencies is that private digital currencies promote money laundering, terrorist financing and tax evasion. The shift from physical to technological payment in the recent past has led to a rapid focus on fintech services. Due to the emerging pressure caused due to the challenges poised by cryptocurrencies, government passed, 'The Cryptocurrencies and Regulation of Official Digital Currencies Act, 2021', which could help them to regulate the cryptocurrencies and also conceptualize the idea of CBDC. Before the introduction of the concept of CBDC, the spread of the required infrastructure and shift of the focus to 'Fintech' was essential. The modes of online financial transfers available were not sufficient for shifting the focus to the change required. Thus in 2016 RBI together with Indian bank association introduced the Unified Payment System, developed by NPCI. This, real time payment system facilitates the bank transactions through mobile phones. Person to person and person to business transactions were possible through this facility. The easy usage and safety provided enhanced the use of this facility. This laid the path to the change of the focus to 'fintech.' However, the main aim of shift of focus was of financial inclusion.

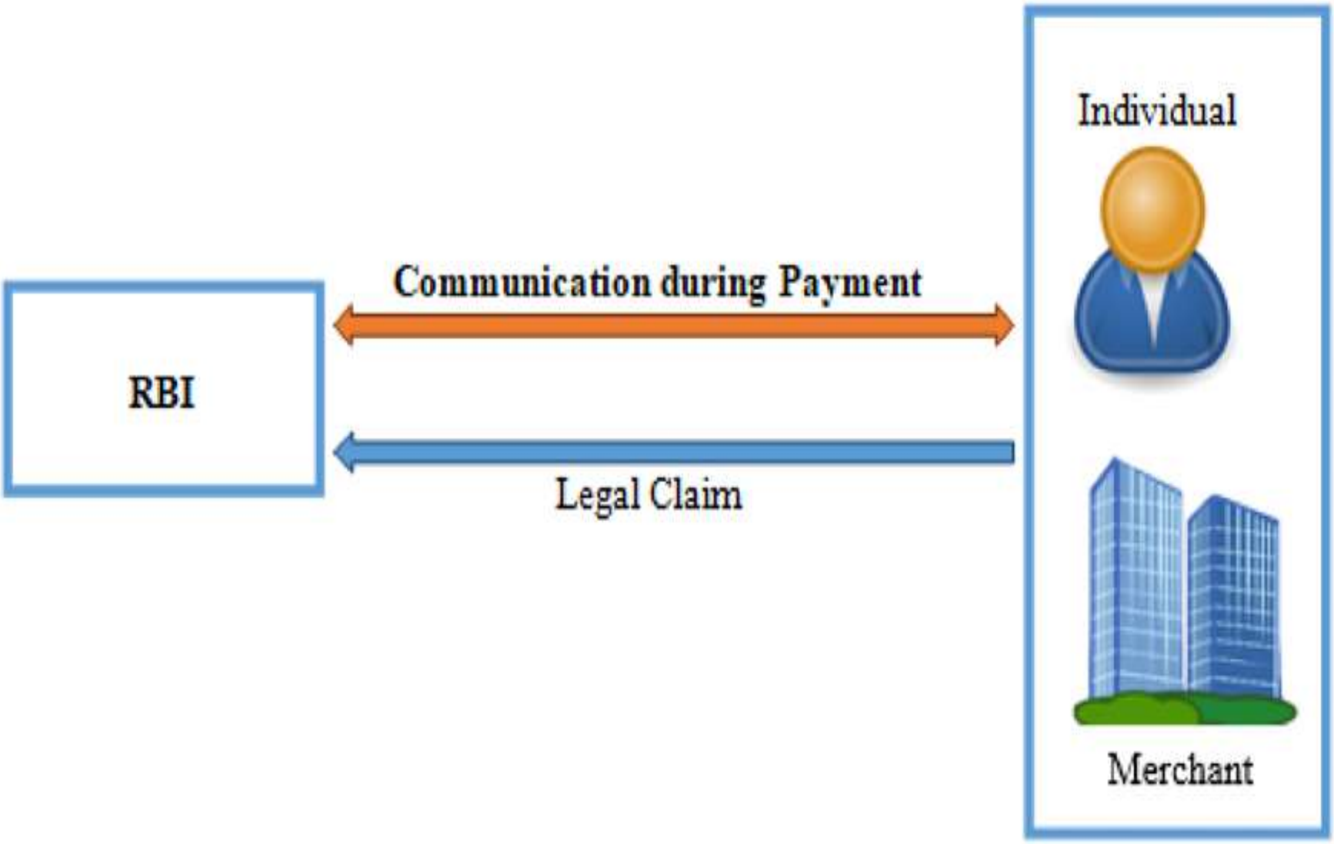
Working of India's CBDC (11)

Indian CBDC or the e₹ is planned to work in the wholesale as well as the retail way. The working will be kept simple, secure with a convenient payment system, so as to be easily adopted by all the sections of the society. The account based payment system will support those having bank accounts but those who do not have bank accounts will be provided with token based e₹. In both the ways the denomination of the existing notes and coins will remain the same. The e₹ will act as a medium of exchange and also have a store value in the bank accounts or in the wallets. This can be transacted through the designated banks, websites, official apps and provided wallets. UPI can provide a useful and most convenient system which is well known to India.

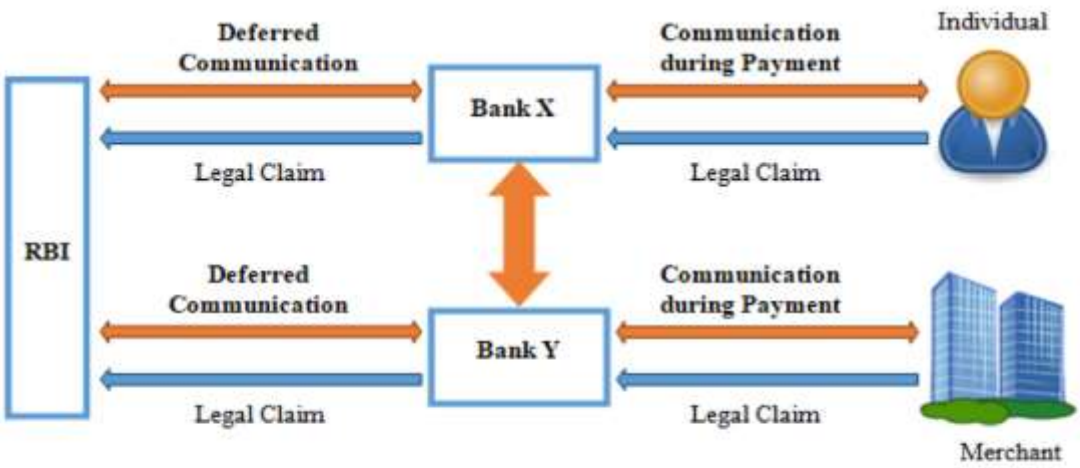
RBI is providing both Person to Person (P2P) and Person to Merchants (P2M) transactions through CBDCs. For bifurcating the transactions RBI has given 3 different models, so any transaction done may adhere to one of the model given.

Transaction Models –

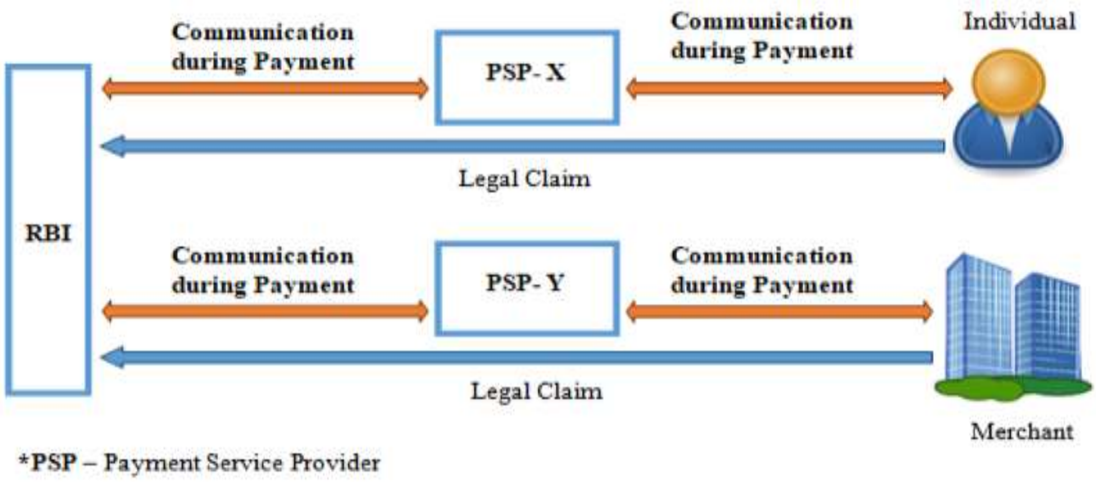
- Direct Model: It is also called as the single tier model as an individual or a business directly deals with RBI. Thus the central authority maintains the ledger of the entire transaction and issues the e₹.



- Two Tier model: It is also called as an indirect model. Where a bank other than RBI is involved in the transaction. The central bank or RBI will be liable for issuing e₹ and keeping the ledger of all the transactions, while the second banker in the transaction will be responsible for validating and recording the transaction in the ledger. Thus maintaining a two-step control on the e₹ transactions.



- Hybrid Model: It is a combination of both direct and indirect model architecture. Where the issuing and ledger maintaining will be done by central bank or RBI while verification and recording of transactions is been done by second banker or a payment service provider. The difference in this model is where the individual or the merchant can even deal with the central bank directly or through the second transacting banker or the service provider. Thus this method tries to reduce the drawbacks of both the single tier and two tier models.



Categories of CBDCs – for catering to different needs of transactions CBDCs have been categorized into two parts. These categories have been made according to the scale of use and volume of transactions. (37)

- Wholesale CBDC - They are intended for interbank transfers where purchase and sell of bonds and financial instruments is intended. As the size of transfer is on a higher side, such transactions will be done through wholesale CBDCs. The international transfers through nostro accounts will be done through the same method. Thus the higher denomination transactions especially related to investments will be transacted through these wholesale CBDCs. So there use will be restricted to only selected financial institutions. Due to this the entire settlement system can be transformed and can be made more efficient and secure.
- Retail CBDC – These are intended for daily routine transactions done between both Person to Person (P2P) and Person to Merchants (P2M). These transactions are of smaller denomination and will be for non-financial consumers and businesses. The volume of transactions in the retail CBDC section will be on a higher side, while the denomination of each transaction will be lower. The retail CBDCs will be the direct liability of the RBI so greater safety of online transactions with real time payment settlement will be achieved.

Benefits of CBDCs in India -

The concept note published by RBI in 2022 states many benefits of e₹ --

- Increase in financial inclusion – As the digital mode of currency doesn't need fully operational bank accounts, and as they can work even in offline mode, it will be a helpful tool for increase in financial inclusion.
- Promote less cash economy -- A cashless economy helps in boosting the overall economic growth. Due to COVID-19 pandemic the usage of online transactions have increased and even after that the trend has remained the same. Due to the introduction of CBDCs the use of online transactions will increase thus promoting less cash economy.
- Increase in business operations – Due to online secure payments the transactions have increased. This has helped in growth of business operations.
- Reduction in money laundering – The basic concern is the volatility and instability of the value making it less reliable. But as Indian CBDCs are governed by RBI they are less vulnerable to volatile situations and cybercrimes. This will lead towards reduction in money laundering.
- Promotion of DvP settlement system – Due to the use of CBDCs delivery versus payment settlement is done simultaneously. Thus the dealing in government securities is been settled with the use of wholesale CBDCs.

Though there are many potential challenges like threat of cyberattacks, data management of KYC details, less awareness of the basic concept of CBDC etc. measures can be taken to overcome these challenges. The e₹ or CBDC, in the coming future this digital currency can help India to increase its ease of doing business and bring financial stability.

Conclusion

Economic progress can be achieved by the use of CBDCs as India has finally introduced the pilot version of digital ₹ considering major advantages and also focusing on the further economic development in the coming years.

- Considering the domestic scenario CBDCs can help to enhance the speedy settlement of MSMEs. Financial inclusion has been successfully achieved by use of UPI, and CBDCs will take it further by enabling efficient, secure and quick settlements. Real time instant payments, reduction in waiting time, and reduction in the transaction costs will help them to improve their working capital management. Due to the improved financial inclusion scenario it will be easy to access the rural area. Thus by establishment of a clear regulatory framework, integrating the existing banking and payment system with CBDCs for widespread adoption, government, RBI and MSME representative should try and attain the needs of MSMEs while implementing CBDCs.
- CBDCs have the ability to help to increase in India's forex reserves by enhancing the cross-border trade and foreign direct investment. But these attainments can be made only by facilitating faster, cheaper, secured and transparent cross border transactions. By use of a digital currency the direct currency swaps is possible, thus reducing the reliance on US $, this will further help in efficient management of forex reserves.
- The proposal given by Society for Worldwide Interbank Financial Telecommunication (SWIFT) in 2021 and the pilot testing been done since then plans to interlink the CBDCs worldwide for enhancing cross border transactions' speed, security and efficiency. By implementing this proposal there can be faster cross border payments, reduction in cost for both the countries, and due to compliance of international regulations the risk of financial frauds also can be reduced. But of achieving this a common protocol and standardized formats needs to be developed for facilitating smooth cross-border transactions. A very strong security infrastructure to comply with the global regulatory standards for cyber security will be needed. Lastly collaborations between central banks, financial institutions and regulatory bodies can ensure the development and implementation process of the interlinking of the CBDCs. Thus integration of SWIFT and CBDCs with the required enhancements can totally transform the global financial system. All in all CBDCs actually has the potential to eliminate the intermediaries in cross border transactions helping India to save on huge commission paid due to transactions done in US $.
- Most of our trade partners have started using UPI. Taking a step further CBDCs can be utilized to achieve cross-border convertibility by allowing real-time settlement, increase in transparency by use of block chain technology which helps is reducing the risk, due to use of cryptographic techniques to secure transactions, which helps in reducing the risk of cybercrimes which is a serious concern in the cross-border transactions. By developing platforms for currency exchange, using smart automated contracts for ensuring settlement process and by signing bilateral and multilateral agreements, cross-border digital currency convertibility can be achieved. This will give a boost to the economy. (35 & 36)

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