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## Role of Private Players in Implementing CBDC: An Exploratory Study

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### Abstract:

*Although Digital Currency is not new to the world, Reserve Bank of India has developed a Digital Currency that will replace current physical paper currency. Any new technology arrives, comes with its own features and limitations. RBI has already started pilot study of roll-out of CBDC in specific sectors of economy where the host and committee are constantly working on the impact of CBDC.*

*This study is an exploratory study made on CBDC. Information is available in pieces as of now. There is seen information gap regarding the CBDC and Crypto and UPI. There is also a fear among people with respect to credibility, risk, tax implications, transactions, offline transactions, blocking etc. This article tries to answer the questions like how will this impact the individuals, businesses and economy as a whole? How private players ignite the implementation of CBDC, challenges and how will they compete with CBDC?*

**Keywords:** CBDC, Crypto, UPI, Payment-systems, financial-freedom etc.

### Introduction:

Technology changes the very nature of everything. Currency is not an exception. Unit of measurement of value has always been changed as per the requirements of people from time to time. From barter to cash to Crypto; the world has witnessed gradual but trustworthy change in payment settlement system. Each system had its own advantages and limitations. The new payment system also owes some limitations. Despite that, new electronic system is supposed to address the limitations of existing currency that is not fetching up the requirements of contemporary businesses.

Businesses today are complex, inter-dependent, automated, faster and wider in its scope. Deeper businesses are very small in numbers as they have been updated and optimised to suit Modern Management Information Systems (MMIS). Thus, there is a requirement of a robust and more convenient payment settlement system. Paper currency had a lot of issues and hence electronic payments like IMPS, RTGS and NEFT were introduced for larger payments and UPI was introduced to make it convenient for retail payments for both – Person to Person (P2P) and Person to Merchant (P2M).

Businesses are growing very faster, and the existing payment system fails to match the growth due to several reasons. Such as – limit to the daily transactions by value and by volume, feasibility and risks involved etc. The new private sector financial products and services including digital assets, wallets, and mobile payment apps have been developed to suit their needs. Government of India had to provide a platform by introducing a new payment system that could replace the existing payment system of private sector and foreign financial services providers.

#### **The CBDC:**

Central Bank Digital Currency (CBDC) is the newest form of currency introduced by RBI. This DC is expected to be safe, secure, reliable, accessible, affordable, and efficient payment system.<sup>1</sup> The concept note on CBDC was published on 7<sup>th</sup> October 2022 by RBI as it was promised in budget speech of 2022 to operate in the fiscal year 2022-23. It is rolled out in two formats – retail and wholesale CBDC. Retail CBDC was launched on 1<sup>st</sup> December 2022 and Wholesale CBDC was launched on 1<sup>st</sup> November 2022. Necessary changes were made in RBI Act, 1934 by inserting new section 2(aiv) to add 'digital note' in the scope of 'bank note'.

Digital currency is a mode of payment which is exclusively in electronic form. It is accounted for and transferred using online systems. People generally misunderstand cash held in online bank accounts or digital wallets as a form of digital currency, but, it is just a variant of digital money. Digital Currency need not be backed by physical currency or cash. It is an alternative to cash and doesn't require physical manufacturing.

#### **All about CBDC:**

CBDC is not new as a concept. It was first introduced as an idea by David Chaumin 1983 in a research paper titled "Blind Signatures for Untraceable Payments". He later commercialized his ideas from his research by establishing an electronic cash company "DigiCash" in 1989 in Amsterdam. Unfortunately this company shut down in 1998 as it went bankrupt. The 'dot-com' bubble and the decade of 2000 was game changer wherein people started to use electronic money to settle the accounts as they were fast, reliable and could pay in fractions.

<sup>1</sup> RBI Concept Note on CBDC (2022).

“According to the Atlantic Council’s Geo Economics Center’s Central Bank Digital Currency (CBDC) Tracker, 10 countries have fully launched a digital currency, and China is on course to expand from its pilot CBDC in 2023. China’s digital yuan, one of the largest CBDC programs, launched its pilot project in 2014.”

The NEFT, RTGS, IMPS have played immense role in transforming the businesses. UPI is also an electronic way of payment settlement. But it is different from CBDC. Here’s the difference.

UPI	CBDC
An interface used for making transactions based on physical currency.	Another form of currency.
One should have a bank account to make payments using UPI. UPI is just an enabler of payment using the bank account.	Payments can be made through the digital rupee possessed by an individual in his wallet. This does not make a charge on his bank account.
At any given time a person can withdraw the money received through UPI or convert it to paper cash.	DC can't be converted to paper cash and can only be transferred from one account to other to make and receive payments.
Requires internet connectivity. USSD technology is an exception.	There is a hope for offline functionality.
The recipient must have a bank account to receive payment through UPI.	The recipient need not have a bank account to receive digital money.

As Forbes put it right, “All crypto currencies are digital currencies, but all digital currencies are not crypto currencies.”

The private currencies are not actual ‘money’, but they can be used as ‘token’ to settle the payments. Cryptos are the best example. They are currencies but are not legal tender since it is not supported by any government. And the intrinsic value cannot be more than face value. Thus, CBDCs which is expected to work on similar or better technology than crypto, has already addressed this very issue.

Crypto	DC
Crypto currency are digital assets on decentralized network.	DC is digital fiat.
Is a type of digital currency.	There are 3 types of DC- crypto, virtual, CBDC.
Interest can be earned.	There may be interest bearing cbdc's to attract public to choose it over regular paper



	currency.
Affected by market values	There may be interest bearing cbdc's to attract public to choose it over regular paper currency.

### CBDC's run with Private Players:

In the recent past we have seen how companies like Paytm followed by Amazon, Mi, and others introduced e- wallets and encouraged the public to store a part of their savings in these wallets. This money kept by millions of such users is helping these wallet hosts in earning interest on the kept money over and above the revenue generated by them for providing services. With the introduction of digital wallet by the central bank, these private companies are certain to be affected with regards to the interest they have been earning, as in the coming days RBI will be gaining interest from the money stored in digital wallets.

Private sector innovation – ‘M-Pesa’ which started in Africa and Asian countries enabled payments without bank accounts. Today, \$2 billion transactions occur everyday in 95 countries. Bahamas have already adopted CBDC looking at its geographical imbalances. This has greatly helped them for having lot of islands and without banking machine. (Tobias Adrian, 2021). Thus, it is clear that without private players, it is difficult to implement CBDC.<sup>2</sup>

India is the world's largest recipient of in-bound remittances.<sup>3</sup> UPI itself is the example for it. This is seen as an opportunity of business through financial service for private players. They can help government in any of the following considerations - Policy Goals: Technology, Operating Model, Design Features, Legal Foundations, Project Implementation.<sup>4</sup>

The policy goals are different across jurisdictions. They help make choices related to technology, design, model and legal foundations. Financial inclusion and access to payments becomes the most frequently addressed issue of CBDC.<sup>5</sup> The elderly with certain disabilities are the worst hit people in a cashless economy. There cannot be a pure cashless economy in the future.<sup>6</sup>

We cannot assume only private players to do it all. In remote and underprivileged areas private people might find it unintended to develop businesses as there is no growth. Hence it is necessary that the government take interest in developing technology alongside private players.<sup>7</sup> Also, the Public Bank of China (PBOC) posted a concern of system failure would damage

<sup>2</sup>Tobias Adrian, Tomasso Mancini Groffoli, IMF, 2021

<sup>3</sup> RBI Report (2022).

<sup>4</sup> Report by IMF Staff

<sup>5</sup>Tobias Adrian, Tomasso Mancini Groffoli, IMF, 2021

<sup>6</sup>SverigesRiksbank (2018).

<sup>7</sup>Medienna and others (2020).

Chinese economy where large portion is controlled by two mobile payment private giants – AliPay and WeChat Pay.<sup>8</sup> To hedge the system failure, three tier system could work – front private players, backed up by CBDC by central bank and then last back-up is cash.<sup>9</sup>

Role of private players and CBDC are not yet thin-lined throughout the globe as there are experimentations are still going. This is finalised only after trials are done with the different operating models. Currently there are three recognised theoretical models – unilateral (CBDC shall carry full function), the intermediary model (wherein private players are allowed to interact with end-users) and synthetic model (wherein private players issue CBDC and central government back it by liabilities.<sup>10</sup> However, these models are not mutually exclusive. Some central banks have already adopted more than one model in their economy.<sup>11</sup>

The private players may help implementation in various ways – technological background that is used in the system can be wholly managed by private entities. This CBDC environment includes various functions – issuing, validation, ledger update, KYC, UI, User data verification and Customer Service.<sup>12</sup> This system is as good as outsourcing the technological requirements to the private sector.

#### **The Concerns:**

Private players will obviously do these tasks with an objective of profit. The infrastructure spending on CBDC is higher than capex of entire organisation. They will think of recovering the costs. The central bank will also have to think of recovering the cost even if it is a non-for-profit organisation. Private players work on fees, as seen in UPI system. They charge merchants and end users are given the facility for free. But if intermediaries are charged, they pass on the price on to end users and make the payment costlier. This is a part of the policy goals. Time shall decide.

There's a threat of information leak. Data privacy is a concern since the inception of internet. Financial information associated with the CBDC is so crucial that every person can be mentored and manipulated by the information holder. Anonymity is a serious concern. Every transaction leaves a foot print behind. There can be confidential information leak that damages the currency holder. The spending pattern, savings patters, limits and such data can trigger the businesses to easily 'play' with individuals. This leads to risk the public's financial freedom.

Each digital currency can be given a unique identification code making it easier to know where a particular currency is transferred from and where it is transferred to. This will enable in keeping cleaner accounts. As a result, there will be a considerable increase in the tax paid and with

<sup>8</sup> PBOC (2021)

<sup>9</sup> BOC (2020), Miedema and others (2020).

<sup>10</sup> Kiff and others (2020), IMF Staff (2019 – 2022)

<sup>11</sup> Adrian and Mancini-Griffoli (2019, 2021), Auer and Böhme (2020), and Auer and others (2021).

<sup>12</sup> IMF Staff

introduction of indirect taxes like GST, it will be easier to collect taxes in a hassle-free way. There is a further possibility of the public losing its financial freedom as there may be a time when the government may set upper limit on the amount spent on certain commodity or service to either reduce its overall excessive consumption or it may charge an additional charge on the consumption over and above the permitted limit. With the assumption that the government will be tracking our transactions, we can say that the generation and circulation of black money can be reduced to nil.

As stated earlier, private players may not be interested to work in remote areas or unpopulated places. That is where central bank must step in.

Another concern is quantitative restriction. The goal is to limit the competition with bank deposits but still foster financial inclusion. There can be a limit kept initially to hedge the risks associated with CBDC.

Does it replace accountants? According to CA Aditya Bhide, "Changing the form of currency won't make any difference as only the transaction will be in digital form, whereas all records will have to be maintained by the accountants only. Even if any different method of recording transactions, or a new technology (like block chain in case of crypto) is introduced it can be adapted." With regard to computation of taxes, he says, "even if the tax gets deducted at source, one (generally a firm) may have to consult a CA or tax consultant to compute the total amount of tax to be paid and ways to minimize that amount."

Offline capacity is required to keep it going. But, it is more technologically complex.<sup>13</sup> Cross border payment is another concern. Technical interoperability and legal framework are the two concerns identified by IMF Staff.

Lack of prior establishments has given an ambiguity in the minds of operations. Trial and errors backed up by investigating and testing the adoption of CBDC shall help greatly. Cyber security is always a concern for any new developments in this regard. This is added by technological instability and lack of technological infrastructure will make it difficult to adopt.

## **Conclusion:**

CBDC is a new payment system that is designed to suit the contemporary businesses. Complex, technology oriented and globalised transactions require more stable, secured, convenient, reliable and faster payment systems. The CBDC in its introductory stage requires a lot of improvements and polishing on various ground. The characteristics that is identified conceptually is required to be implemented on practical grounds. Yet, theoretical work is also very less in this regard. This itself is a challenge.

<sup>13</sup>Chohan (2021), Armelius and others (2021), and ECB (2020).



This article tried to explore the CBDC concept, role of private players and the challenges that the system may face before, during and after the implementation of CBDC. However, all the concerns are not added as it is ultra-virus the scope of this article. There are more research gaps on this topic that requires multi-disciplinary approach.

Despite the challenges, there is always an opportunity to better the system - to improve existing work. CBDC has already been adopted by a few central banks and more to follow. The future is not too far where we will use CBDC as payment settlement system, is the hope we can carry.

### **Bibliography:**

1. Tobias Adrian, T. M. (2021, June). *IMF*. Retrieved from [imf.org: https://www.imf.org/external/pubs/ft/fandd/2021/06/online/digital-money-new-era-adrian-mancini-griffoli.htm](https://www.imf.org/external/pubs/ft/fandd/2021/06/online/digital-money-new-era-adrian-mancini-griffoli.htm)
2. Adrian, Tobias, and Tommaso Mancini-Griffoli. 2019. "The Rise of Digital Money." IMF Fintech Note 19/01, International Monetary Fund, Washington, DC.
3. Adrian, Tobias, and Tommaso Mancini-Griffoli. 2021. "Public and Private Money Can Coexist in the Digital Age." IMFBlog (blog), February 18. <https://blogs.imf.org/2021/02/18/public-and-private-money-can-coexist-in-the-digital-age>.
4. Agur, Itai, Anil Ari, and Giovanni Dell'Ariccia. 2022. "Designing Central Bank Digital Currencies." *Journal of Monetary Economics*, forthcoming.
5. Atlantic Council. 2021. "Central Bank Digital Currency Tracker." Accessed on December 17, 2021. <https://www.atlanticcouncil.org/cbdctracker>
6. BOC (Bank of Canada), Bank of England, and Monetary Authority of Singapore. 2018. "Cross-Border Interbank Payments and Settlements. Emerging Opportunities for Digital Transformation." Joint report.
7. Central Bank Act of The Bahamas. 2020. Nassau.
8. Khan, Ashraf, and Majid Malaika. 2021. "Central Bank Risk Management, Fintech and Cybersecurity." IMF Working Paper 21/105, International Monetary Fund, Washington, DC
9. World Bank and PBOC (People's Bank of China). 2018. "Toward Universal Financial Inclusion in China: Models, Challenges, and Global Lessons." Joint Report. World Bank, Washington, DC.