

CRYPTOCURRENCY AND CENTRAL BANK DIGITAL CURRENCY (CBDCS) : WHETHER THE FUTURE OF MONEY OR A FINANCIAL NIGHTMARE.

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Abstract

In Dynamics of time when technology is playing important part in shaping and moulding our life, society and law, then it wasn't the currency which has to be left behind. Crypto currency and cryptographic assets have now changed and challenged the basic concept of money. CBDCs, stable coins, crypto-assets are beyond the idea of that tangibility of money, now its virtual and more expansive. There are certain risks and challenges with such crypto assets and this paper will examine and critically evaluate the notion on which such currencies are prevailing and how cautiously but optimistically we can tread in such sea of crypto currencies. Centralised and decentralised currency in this provides it different angel of approach. It will also examine How decentralised ledger technology that is block chain is backbone of all of these.

Key Words: *Crypto Currency , Crypto assets, Blockchain, ledger, Central Bank digital currency, CBDC*

The world of crypto currency is getting crowded with new crypto currencies day by day and so is the diverse use of such currency in various financial institutions. There has been a constant debate regarding realisation of virtual money. Where some nations have adopted it with open arms whereas many have been sceptical in wholesome realisation and acceptance of the same. Bitcoin, Ethereum, doge coin etc are few such crypto currencies which are prevalent and popular among customers. Today, crypto currency finds itself in a similar position, with limited exposure towards its ability to remodel the financial structure and its capacity for wider global impact. Crypto currencies have provided a medium to the individuals to make, exchange, share and invest in assets which may or may not be tangible. Moreover, these crypto currencies have demonstrated

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that they can be used to provide new financial environment for investment and transaction devoid of any manipulation and discrimination on behalf of caste, class, political outlook, gender, race etc.

Digital money has been around us for a few decades and Crypto currency in very line of it is termed as an up 2.0 version of such money but this won't be fair with both the digital money as well as crypto currency to be compared on equal par. As both have a peculiar way in the financial system and also in its origins and synthesis.

Recently the inclusion of crypto assets in the taxation mechanism has given the industry the much-awaited recognition that it deserved. As a result, it has positively shaped the perception of potential crypto investors who were uncertain about its legal position in India. Investors who've been Interested but sat on the sidelines can finally participate in crypto now with its acceptance as a virtual asset [1] class.

Cryptographic assets [2] (crypto assets) “are transferable digital representations that are designed in a way that prohibits their copying or duplication. The technology that facilitates the transfer of crypto assets is referred to as block chain or distributed ledger technology. Block chain is a digital, decentralized ledger that keeps a record of all transactions that take place across a peer-to-peer network and enables the encryption of information. Hence Crypto currencies may comprise of Decentralised Non fungible tokens as well but centralised digital currency, various accepted modes of traditional digital assets make them at par with each other therefore taxing specifically decentralised NFTs seems the target of the government” [3]. In the Intellectual property sphere these virtual assets can help creators, producers and content makers to gain profits on their deserving intellectual property rights.

If we talk about traditional as well as non-traditional currencies it is the crypto currencies which are more easily accessible, autonomous, publicly available and real-time solving of dispute, management of various financial assets. As in recent times Crypto currency is taken as programmable money, a term for real money that is represented in digital form or by tokens – for the masses. This Programmable money is tracked corresponding via electronic ledgers, known as block chains. In tokenization [4], block chain is the major element in crypto currencies, central bank digital currencies and

other crypto assets. Block chain technology is also known as distributed ledger technology. It keeps and maintains records and encrypts transactions happening across peer-to-peer networks [5].

The interesting and peculiar part of documents involving block chain is that it has details of transactions, determining the sender and recipient and amount involved. The individuals who are involved in the transaction are the ones who can unlock the contents of a particular ledger or block as it can only be opened with a private key. The entries into these ledgers involve a hash function by which anyone can validate such transactions in that block. Although during these transactions sender and recipients are identified, even all these positive features don't render block chain from potential risks. This can be via fraudulent alteration and forgery of documentation. Problems can arise when financial institutions involved in these transactions don't get original documentation which is the backbone of that transaction, which is possible if anyone forges or uses documents for fraudulent purposes and the party involved is not able to verify and counter-verify such documents. These things can also happen when financial institutions out of competitive attitude move their transactions on various platforms. such an act causes conflicting double pledged transactions [6].

Price Waterhouse Coopers in its Report on Future of money has highlighted certain important dimension to future of crypto currency as [6] "The new wave of tokenised money started with the introduction of Bitcoin in 2008 as the first widely used, decentralised, peer-to-peer, crypto currency based on distributed ledger technology called block chain. Another inflection point came with the announcement of Libra (now renamed Diem) in 2019 by Facebook. Conceived as a private stablecoin - a privately issued crypto currency pegged to a stable asset (e.g., fiat money, physical gold etc) - Libra/Diem led to the development of a number of other stablecoins. It is against this backdrop that Central Banks around the world have ramped up interest in CBDCs. Conceived as a digital representation of fiat currency, CBDCs are a liability of the central bank in the same way as physical currency. This is a major differentiator between CBDCs and other tokenised money forms such as crypto currencies and stable coins."

These CBDCs can be account based when ownership of CBDC is chained to an identity in which the transaction can be streamlined by seeing payee balance and payment by payer. Moreover, these very CBDCs can also be token based when it involves tokenization of the same. The account based Central Bank Digital currency works on digital payment gateways as used in day today's payment applications [5].

The Parliamentary Standing Committee on Finance, which has been chaired by member Parliament Jayant Sinha, took representation from a delegation who represented Block chain Crypto Asset Council (BACC), Coin exchanges, crypto exchanges, digital payment apps etc. This step shows that the government is in mood for regulation rather than wholesome banning of the same [7].

The Bill named “The Crypto currency and Regulation of Official Digital Currency Bill, 2021”, is in the making Act for The Parliament which will regulate, monitor and execute orders of Government for management of crypto currencies in the country. The law will also become the basis for the introduction of RBI issued digital currency in India [8].

Although India, through Reserve Bank of India (RBI) has stepped in to introduce a crypto coin/currency but it's not exactly a crypto currency like Bitcoin or Ethereum as it will introduce a central bank digital currency (CBDC) which will be monitored and centralised by the government.

Crypto currency has come up as an added advantage to criminals across the globe. Among CBDCs and decentralised virtual currencies, the latter is more preferred. This preference also leads to attacks on crypto exchanges from time to time to steal information and possible details of transactions.

We have talked about cyber espionage, ransom ware, third party application vulnerability and other such risks of crypto currency but one interesting and harrowing aspect in criminal world for such currencies is usage of these crypto currencies for payment in cyber-extortion or even any extortion or abduction by criminals. These crypto currencies are boon to the criminal to get their money from the victim in the form

of untraceable and secure transactions through these virtual currencies. It is bane for law enforcement agencies to keep up with this technology to fight against such crime and criminals. As these criminals may morph, ensconce and seal their identity while dealing and extorting money out of its victims. since these currencies can be converted into traditional cash or legitimate digital money through various ways.

Dark web and crypto currency have found a mutual alliance for discrete and secret transactions for anyone which can be advantageous too, but when it involves crime and mafia the very advantage becomes more dangerous towards the wellbeing of society. Silk Road, Darkode and Operation Shrouded horizon are examples of such relation of crime and crypto currency. In recent times it has become a haven for hawala transactions and ease of business for money laundering [9].

Certain disadvantages which make it overbearing over the whole financial Institution to wholly form a confident outlook towards crypto assets. Since crypto currencies are fully decentralized, there's no central authority to monitor the transactions and overall crypto activities. Furthermore, crypto currencies involve low levels of regulations.

This makes crypto currencies a criminal's haven. Every business that uses crypto currencies is a target unless they increase its cyber security measures. Cybercriminals can buy or sell virtual currencies without ever being discovered.

Every technology has good and evil sides of and so is with the Virtual currencies. Crypto currencies are also vulnerable to various risks involving cybercrime financial frauds etc. Crypto exchanges can fall into trap of bad trade which can cause them loss in their business. Here are some vulnerabilities and threats involved in Crypto currencies [9]:

1. Platforms can be Hacked and funds can be stolen if any insider person is involved in such trades.
2. Users' credentials can be stolen by phishing and hacking.
3. Compromised information can be misused resulting in compromised registration forms.

4. Many times, third party applications are seen to be used when dealing with these currencies hence making them highly susceptible targets for ransom ware and malware vulnerability.
5. Crypto currency related platforms or apps may infuse malware into devices involved in mining machines and steal mining sources. the infected system may be havoc
6. In Compromised systems crypto currencies can be stolen from online wallets.
7. Manipulation of such Currency via identity theft, forgery, misrepresentation fraud, and cyber-espionage are possible risks, which can be used by hackers at opportune time.

Although these are serious vulnerabilities but interesting part is that risks can be minimised in such crypto currencies by implementing good cyber security measures which are cost effective compared to cyber security applied to traditional payment systems.

Still no matter how well equipped the law enforcement agencies are, the mafia, cyber criminals, money-launderers, hackers, smugglers, and criminals find it easy to transact in such currency due to its advantage of anonymity and privacy.

Rise of Bitcoin raised cyber security concerns but also introduced block chain technology to the world which delivers a series of transactions on encrypted transmission. The Reserve Bank of India is planning to introduce a central bank digital currency (CBDC) which will not be crypto currency as it will be centralised and regulated [8].

It is the stability of CBDCs over other private crypto currency which has increased the confidence of financial institutions to have transactions in CBDCs. in this India won't be the first nation to allow and release such CBDCs. Similarly various other nations are working on the same as in Project UBIN of Singapore, Project Jasper of Canada and many other nations are also cautiously moving in the same direction.

There is a clear difference between CBDC or private virtual currency. Although these virtual currencies have shocked the very concept of money and currency. As the concept of money involves commodities and some value, some tangibility to assets but

none of this can be identified with this “new money”. It neither has intrinsic value as claimed on commodities nor they are commodities. even they are claimed to be akin to gold as fluctuations in its prices are involved. The interesting part is that they don't describe any debt or liabilities of anyone [8]. Another difference between them is that CBDC is controlled by states whereas private crypto currencies are decentralised and unregulated.

Benefits about Central Bank Digital currencies are so hyped nowadays and it can provide the same too. For example, it can help in reducing the expenditures of money transactions compared to cash or physical transactions. Moreover, these central banks can inspire confidence among peoples about how their money will be more safe and secure with financial inclusion of all across society. As these CBDCs keep account of the exact location of each unit of currency. Hence making it more secure and protected and minimises tax evasions or any potential crime.

As there are shortcomings to every technology so is with CBDCs with certain potential liability which can be risky. For example, if people began taking too much money out of banks all at once and purchased CBDCs, it could cause serious financial challenges for banks. Centralising digital currencies via the government may raise data privacy issues too. Moreover, most of the time it's the law which lags behind technology hence to address the challenges posed by these new forms of money has led many banks and financial institutions to not to venture into the risks involved in crypto currency or even in centralised digital currencies.

Citing all the pros and cons and also with cautious optimism the government should seriously think about using the crypto currency universe and to start with a centralized system it will be less risky. Although strict cyber security protocols and standard operating procedures should be designated towards the Institutions involving such crypto assets. Valuation, manipulation, mining all needs to be brought under checks and balance which is not an easy task since these crypto currencies are a favourite means and ends in world of Darknet.

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