



Crypto Currency Vs. CBDC: A Comparative Study

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Abstract

Growing advancements in information technology and the escalation in the accessibility of the internet has made the concept of the digital currency an indispensable concept. Due to the skepticism created by the global financial crisis and the aid provided by the financial institutions has created a way for the crypto currency. The rise of crypto currency has been fueled by the development in cryptography and ledger technology. The crypto currency has a lot of drawbacks such as volatility, high risk and also poses a threat to the monetary policies and to the demand of the fiat money provided by central banks. The central bank digital currency introduced by the central banks aims to provide the businesspeople and the consumers with privacy, convenience, accessibility and financial security. The goal of this comparison study of the crypto currency and the central bank digital currency is to provide an overview about the history, concepts, benefits, drawbacks similarities and differences of crypto currency and the central bank digital currency.

Keywords: Crypto Currency, CBDC, Central Bank, Digital Currency, Benefits etc.

I. Introduction

Currency has had its own dimensional developments from coinage to the current digital currency. The recent developmental changes in information technology such as the introduction of net banking, UPI have led to the rise of digital currencies. There are digital currencies such as crypto currency, stable coins and the recently released central bank digital currency (CBDC). Cryptocurrency is a virtually existing currency that uses cryptography to secure transactions. It is organized by a network called block chain where the peer-to-peer transactions can be monitored. The influence of cryptocurrency and the compulsion to adapt the new growing technologies to meet the digital future has made the central bank

to release its own digital currency called Central Bank Digital Currency (CBDC). The CBDC is denominated to the fiat money in a country that is fixed by the central bank of that country. It uses the block chain technology which captures all the transactions in a decentralized ledger which makes it impossible to interfere or alter data. Although cryptocurrency and the CBDC are virtual currencies that are similar in nature whereas differ in certain aspects. These aspects are explored in this research paper.

II. Review of the literature

Vijeta (2017) expounds that cryptocurrencies are digital currencies which gained popularity among the people created new standard for financial transactions. The cryptocurrency is easily available and leaves out the need for a third party in a transaction. But this mechanism suffers from the technological glitch in the block chain and requires proper knowledge about the crypto currency leaving innocent people vulnerable. *Pretson (2023)* highlighted that the Central Bank Digital currency is a legal tender of the central bank. The digital rupee was announced. This study was made to find the interest on the cryptocurrency and the CBDC of people in India by national level and regional level. The CBDC has the operational design of traceability, non-disruptive and conformity with central bank objectives and also the potential risks to look out.

Objectives

- To know about the history of crypto currency and CBDC
- To perceive the benefits and challenges of crypto currency and CBDC
- To understand the similarities and differences of crypto currency and CBDC



III. Methodology

This is a descriptive study that outlines a phenomenon without altering it. It was purely based on secondary sources and the information's were gathered from various websites and published articles such as IMF library, Investopedia, Forbes etc.

History of Cryptocurrency and CBDC

Crypto currency was a concept first hinted at during the early 1980s but only in the 1990s did the cryptographic protocols and the software began to develop. Satoshi Nakamoto published the outline of crypto currency in 2008. The first crypto currency called Bitcoin was created as a protocol in 2009 and was launched as open-source software in the same year by Nakamoto. Several other crypto currencies such as Ethereum, Cardano, Tether, XRP, Dogecoin, File coin, Litecoin, Binance coin, Solana etc. have come into existence after 2010. In 2017 the value of bitcoins skyrocketed and crashed during 2018. The cryptocurrency works on a

technology called blockchain which is a public ledger which records all transactions done by the currency holder. The cryptocurrency can be bought from brokers, stored and spent using cryptographic wallets. The main concepts of the crypto currency are block chain, cryptography, decentralization, mining and staking, wallets and ledger technology. The CBDC is not a new concept however it has been around 1993 where the Bank of Finland has initiated the world's first electronic form of cash called Avant smart card. But that concept was dropped during the early 2000. The CBDC gained its popularity during 2019. In 2023, 95% of the global GDP is from evaluating various stages of launch of digital currency by the central banks of 114 countries. Some examples of CBDCs are Digital Rupee, Digital Ruble, eNaira, and dollar currency, JAM-DEX etc. The CBDC is similar to the stable coins which are tied to another currency, goods or financial instruments.

Benefits of Cryptocurrency and CBDC

CRYPTOCURRENCY	CBDC
Inflation protection: Increase in money supply increases supply price of cryptocurrency	Cheaper cash management system: It will reduce burden of handling, printing and logistics of cash managements
Accessibility: Anyone with a phone/ computer with an internet can access cryptocurrency	Enhance financial inclusion: it helps the people to have better access to financial services.
Transaction speed: Peer to peer transactions are quick to settle even for foreign transactions	Boost to economic growth: this faster and secure payments help to improve economic activity and growth.
Cost effective : It can help transfer funds with negligible cost even for global transactions	Traceability: This feature of the CBDC helps to monitor transactions and control illegal activities
Safe and secure: The crypto assets cannot be accessed without a cryptowallet private key which secures them.	Secures payments: Eliminates payment risks, enhances efficiency, reduces time for even cross border payments.
Privacy: transactions are done without the need for third party as banks and governments in private	Effective control of monetary policy: The control of macroeconomic aspects such as inflation, interest rates, etc.



Challenges of Cryptocurrency and CBDC

CRYPTOCURRENCY	CBDC
Volatility: The price of the cryptocurrency changes frequently and creates price fluctuation	Privacy risk: the CBDC compromises the privacy of the users and increases the risk of cyber attacks
Illegal transactions: The privacy and security of cryptocurrency becomes an advantage for illegal transactions due to anonymity.	Rises the income inequality: The unequal spread of CBDC escalates the income inequality.
Excessive cost of production: The mining of the cryptocurrency is costly as it requires an immense amount of electricity and other resources.	Problems in execution cross border transaction: The differences in the regulations of different countries is a problem in implementation of CBDC
Highly centralized: The crypto currency is claimed to be decentralized but the ownership is highly concentrated in reality.	Investment need for technology and infrastructure: this aspect which is crucial for CBDC but can be critical to developing countries.
Lack of regulation: The increased risk of scams and market manipulation happens due to the lack of government regulations	Problem of physical cash backup: The lack of physical cash as backup will cause disruptions.

Similarities of Cryptocurrency and CBDC

Cryptocurrency and CBDC are digital currencies which use the technology of blockchain. They exist in virtual platforms as virtual currencies and assets. These digital currencies enhance effective and speedy transactions. Even though cryptocurrency and CBDC are very similar they differ in various aspects.

Differences in Cryptocurrency and CBDC

CRYPTOCURRENCY	CBDC
Cryptocurrency is a decentralized system of currency payments.	CBDC is a centralized system where it is controlled by a central bank.
It assures privacy which excludes third party involvement.	This system ensure transparency monitored by a central authority.
It is an unregulated currency market.	It is a regulated currency market.
The currency value of cryptocurrency is volatile as the price of cryptocurrency depends on market demand, supply and competing cryptocurrencies.	The currency value of CBDC is quite stable as it is denominated for the value of the fiat money in the country.
Cryptocurrency ensures speedy and secure transactions carried out anonymously between countries.	The CBDC which is beneficial within the country is problematic due to the regulatory changes in different countries.
Cryptocurrency leads to scams and makes illicit transactions effortless.	The CBDC compromises the privacy of users and is prone to cyber-attacks.



IV. Conclusion

The rapid changes and development in technology has influenced the growth of digital currencies which is the need for the current virtual world. Even though cryptocurrencies and CBDCs are similar in their origins they differ in their nature and usage. The cryptocurrency is decentralized, independent and focused on privacy while the CBDC is regulated and is integrated into the existing financial system. Both cryptocurrency and CBDC cater to different preferences and needs of evolving concept of digital currencies.

References

- [1]. Banwari, Vijeta, (2017). Cryptocurrency: Scope in India. International Research Journal of Management Sociology & Humanity, pp. 82-90
- [2]. Govindsamy, R., et. al. (2022). Introduction to Cryptocurrency: An Overview. Shanlax International Journal of Economics, vol. 10, mo. 3, pp. 9-13.
- [3]. He, Dong, (2018 June). Monetary Policy in the Digital Age. Finance and Development, pp 13-16.
<https://themorningcrypto.com/article/what-is-cbdc>
- [4]. Lutkevich, ben (2023 october). Central Bank Digital Currency (CBDC). Techtarget.
- [5]. Market committee, (2018). Central Bank Digital Currency. Committee on payments and market infrastructure. Bank for international settlements, pp 1- 18
- [6]. Ozili, Peterson K., (2023). Central Bank Digital Currency in India: The Case for A Digital Rupee. Munich Personal RePEc Archive 118801, pp. 3-15.
- [7]. Pinkerton, Julie (2023 November). The History of Bitcoin, the First Cryptocurrency. U.S. NEWS & World Report.
- [8]. Rodeck, David (2023 August). Digital Currency: The Future of Your Money. Forbes Advisor. The nine most important concepts every cryptocurrency beginner should know (2023 December)
<https://www.brickken.com/post/blog-concepts-cryptocurrency>
- [9]. Top 10 advantages and disadvantages of Central Bank Digital Currencies (March 2023)
<https://www.nttdatapay.com/blog/advantages-disadvantages-of-central-bank-digital-currencies/>
- [10]. Yasar, Kinza (2023 July). Pros and Cons of Cryptocurrency. Techtarget.
- [11]. Zemp, Brandon., (2023 Febraury). The Advantages and Drawbacks of Central Bank DigitalCurrencies. Forbes books.