Understanding the Cryptocurrency, Its Proliferation and Prospects in India

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Abstract - **A cryptocurrency or crypto is blockchain based digital currency; it is basically a collection of binary data, designed using cryptographic methods to make it safe and secure. It is designed to work as a medium of exchange to buy goods and services, and the record of all such online transactions is maintained in decentralized online ledgers. Though; it is unregulated in most of the countries, but due to its secure, transparent and anonymous nature, it gains immense popularity and hype. It is being traded for profits and now emerged as a lucrative medium of investment. The speculative nature of crypto makes it very volatile and prices of the crypto show frequent ups and downs. This study focuses on understanding the cryptocurrency as well as its evolution and proliferation in India.**

Index Terms - **altcoins, bitcoin, blockchain, cryptocurrency, cryptography, meme coins.**

1. INTRODUCTION

The ease of investment due to the emergence of various online trading exchanges in India, leads to rapid proliferation of cryptocurrency in the recent past. The word crypto became the buzz word. The tech savvy-risk friendly young generation of India is becoming more comfortable day by day and is not shying away from testing this new investment medium for creation of money. Nowadays; Bitcoin and altcoins like Ethereum, Ripple, Tether, Bitcoin Cash, Bitcoin SV, Litecoin are being traded in the Indian financial market and people are showing keen interest in buying and selling these cryptocurrencies. Even meme coins like dodge coin, shiba-inu is very popular.

The first decentralized cryptocurrency envisioned in 2008 was Bitcoin; it was developed in 2009 by a programmer or a group of programmers, who used a pseudonym Satoshi Nakamoto for themselves. The advent of bitcoin led the foundation of blockchain technology and decentralized digital currencies. Cryptocurrency does not have any physical form; but it is simply a collection of binary data stored in digital form in the web; it is designed to work as a medium of exchange. It is not regulated by any financial exchange but the underlying block chain technology and encryptions make it secure and transparent. Many countries have approved and adopted it as a cash equivalent, for transactions. It is being used as a digital form of payment to pay willing sellers in exchange for their goods and services. The miners on the block chain protocol are being paid transaction fee known as gas fees to facilitate such transactions. The gas fee charged during crypto transaction is comparatively lesser than the fee collected by financial institution for the processing payment transfers. Cryptocurrency can be held in digital form in hot or cold wallets, or it could be exchanged over into different types of money.

2. NEED OF THE STUDY

In spite of all the hype and buzz, a large portion of Indian population is still bewildered and skeptic regarding the future of crypto. The current legal and political environment regarding crypto as well as ongoing speculation regarding regulations entails the need for the study.

3. OBJECTIVES OF THE STUDY

The objectives of this study are as follows:
1. To understand the cryptocurrency.
2. To study the evolution, proliferation and future of cryptocurrency in India.

4. REVIEW OF LITERATURE

The literature investigated for the present study is focused on three broad areas. In the first area, the studies are based on understanding the cryptocurrency and its underlying technology. The second area included studies on the evolution and adoption of crypto currency in India. In the third area, the studies investigate the future prospects of cryptocurrency in India.

A. Understanding the cryptocurrency

Satoshi Nakamoto in his white paper Bitcoin: A Peer-to-Peer Electronic Cash System; emphasized that what is needed is an electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party. Transactions that are computationally impractical to reverse would protect sellers from fraud, and routine escrow mechanisms could easily be implemented to protect buyers. In this paper, he proposed a solution to the double-spending problem using a peer-to-peer distributed timestamp server to generate computational proof of the chronological order of transactions. The system is secure as long as honest nodes collectively control more CPU power than any cooperating group of attacker nodes (1).

Cryptocurrency runs based on blockchain technology, which is a decentralized platform, where transactions are stored in public ledger, transparent to participants. The Blockchain's goal is to provide the users anonymity, security, privacy, and transparency (2).

D S Soegoto and I Ramadhan in their paper discussed that any cryptocurrency is encrypted information in the form of a cryptographically protected record designating a certain value and certifying the possessor's ability to use this value at his own discretion. From this position, cryptocurrency is similar to non-documentary securities that certify property rights. Since cryptocurrency itself embodies the value that comes from the economic costs of using the computing power of computers in the blockchain network, it can also be considered as a commodity. However, by its functions, cryptocurrency is closest to money (3).

Key Terms

Cryptocurrency: Cryptocurrency is a digital payment system that doesn't rely on banks to verify transactions. It's a peer-to-peer system that can enable anyone anywhere to send and receive payments. Instead of being physical money that is carried around and exchanged in the real world, cryptocurrency payments exist purely as digital entries to an online database that describe specific transactions. When you transfer cryptocurrency funds, the transactions are recorded in a public ledger. You store your cryptocurrency in a digital wallet. Cryptocurrency got its name because it uses encryption to verify transactions. This means advanced coding is involved in storing and transmitting cryptocurrency data between wallets and to public ledgers. The aim of the encryption is to provide security and safety (4).

Blockchain: blockchain is a distributed database that is shared among the nodes of a computer network. As a database, a blockchain stores information electronically in digital format. Blockchains are best known for their crucial role in cryptocurrency systems, such as Bitcoin, for maintaining a secure and decentralized record of transactions. The innovation with a blockchain is that it guarantees the fidelity and security of a record of data and generates trust without the need for a trusted third party. A blockchain collects information together in groups, known as "blocks" that holds sets of information. Blocks have certain storage capacities and, when filled, are closed and linked to the previously filled block, forming a chain of data known as the "blockchain." All new information that follows that freshly added block is compiled into a newly formed block that will then also be added to the chain once filled (5).

Cryptography: The "crypto" in the word "cryptocurrency" means "secret" in Greek – which gives you a clue as to what the field of cryptography is all about. Cryptography is the study and practice of sending secure, encrypted messages or data between two or more parties. The sender "encrypts" the message, which obscures its content to a third party, and the receiver "decrypts" the message, making it legible again. Cryptocurrencies use cryptography to allow transactions to be anonymous, secure, and "trustless," which means you don't need to know anything about a person to safely make transactions with them – and you don't need bank, credit-card Company, government, or any other third party in the middle (6).

Bitcoin: Bitcoin is a decentralized digital currency that enables instant payments to anyone, anywhere in the world. Bitcoin uses peer-to-peer technology to operate with no central authority: transaction management and money issuance are carried out collectively by the network.

The original Bitcoin software by Satoshi Nakamoto was released under the MIT license. Most client software, derived or "from scratch", also use open source licensing.

Bitcoin is the first successful implementation of a distributed crypto-currency, described in part in 1998 by Wei Dai on the cypherpunks mailing list. Building upon the notion that money is any object, or any sort of record, accepted as payment for goods and services and repayment of debts in a given country or socio-economic context, Bitcoin is designed around the idea of using cryptography to control the creation and transfer of money, rather than relying on central authorities.

Bitcoins have all the desirable properties of a money-like good. They are portable, durable, divisible, recognizable, fungible, scarce and difficult to counterfeit (7).

Altcoins: An Altcoin is an alternative digital currency to Bitcoin. The word Altcoin is a portmanteau of "alternative" and "coin", to form "altcoin". It actually refers to a group of cryptocurrencies, ultimately all the cryptocurrencies other than Bitcoin. As of today, over 5000 of these "alternative" currencies have been created worldwide. Most of the Altcoins are based on Bitcoin, and their basic functions are essentially the same. Some of the most well-known Altcoins (based on market cap) are Ethereum, Ripple, Tether, Bitcoin Cash, Bitcoin SV, and Litecoin. Certain Altcoins are serving more purposes than exchanging the coin for something of value, and can be classified as "Utility Tokens" or "Security Tokens" for example (8) .

Meme coins: Meme coins are cryptocurrencies inspired by memes or jokes on the Internet and social media. The first meme coin created was Dogecoin (DOGE). Launched in 2013 as a parody, DOGE was inspired by the popular Doge meme of a Japanese Shiba-Inu dog.

Meme coins tend to be highly volatile. They are mainly community-driven and can gain popularity overnight due to online community endorsements and FOMO. Still, their price can also slump unexpectedly when traders turn their attention to the next meme coin. Another characteristic of meme coins is that they often have a huge or unlimited supply. For example, Shiba-Inu (SHIB) has a total supply of 1 quadrillion tokens, while DOGE has no maximum supply, and over 100 billion tokens are already in circulation. As meme tokens generally do not have a coin-burning mechanism, the huge supply explains their relatively low prices. With just $1 USD, you can buy millions of meme tokens (9).

B. Evolution and adoption of crypto currency in India

Ian Allison explained that the cryptocurrency market has evolved erratically and at an unprecedented speed since Bitcoin came into existence. The underlying technology supporting cryptocurrencies, the blockchain, is evolving at a rapid speed and financial institutions such as Accenture, JP Morgan, UBS, and others are joining together with other big companies to form an alliance and improve blockchain to make it faster, more secure and reliable (10).

The chronology of events in the evolution of the cryptocurrency market in India can be explained with the following timeline diagram as outlined by Shubham Srivastava in his article "History of the cryptocurrency market in India" (11).

History of the cryptocurrency market in India
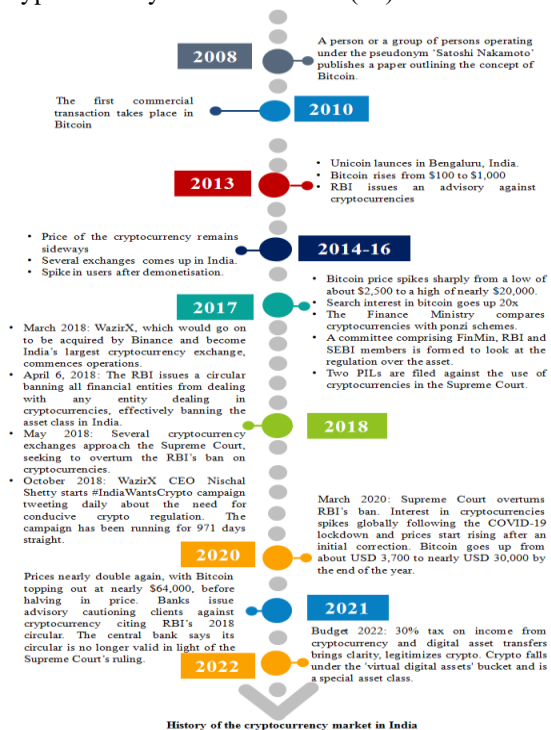
India is the country with the most cryptocurrency owners. In the last few years, more than 10.07 crore individuals have invested more than 6 lakh crore rupees in cryptocurrency. Cryptocurrency investments; surged by about 400 percent; from $923 million in April 2020 to nearly $6.6 billion in May 2021 in India.

As per the Chainalysis report "The Chainalysis 2020 Geography of Cryptocurrency Report", as of 2021, global crypto ownership rates at an average of 3.9%, with over 300 million crypto users worldwide. And over 18,000 businesses are already accepting cryptocurrency payments (12).

Top five countires in number of cryoto user (in Millions)
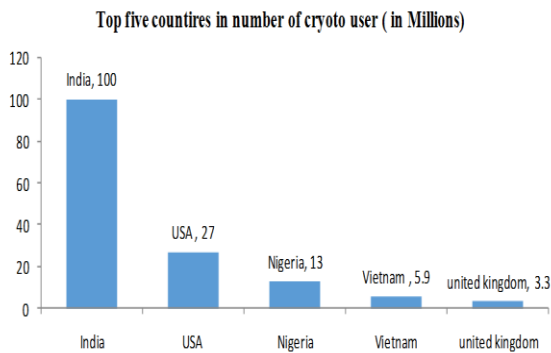
In spite of the uncertainty around crypto currencies in India, it emerged as a world's fastest-growing cryptocurrency markets. India's virtual currency market India grew 641% from July 2020 to June 2021, it attracted crypto funding and blockchain investments worth $638 million across 48 funding rounds in 2021(13).

According to a survey conducted among 114,000 BuyUcoin users, has revealed that the majority of ether investors in India are from the 18-34 years age group (14).

Age group of Crypto investors in india
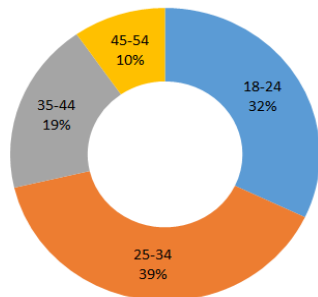
As per Ashish Singhal, co-founder and CEO, CoinSwitch Kuber "The average ticket size in crypto

investment is about rupees 9,000 per month per user. It varies drastically between cities. In tier I, the average ticket size is about rupees 11,600, tier II about rupees 6,600 and tier III about rupees 3,500 per month per user" (15).

The average ticket size in crypto investment per month per user
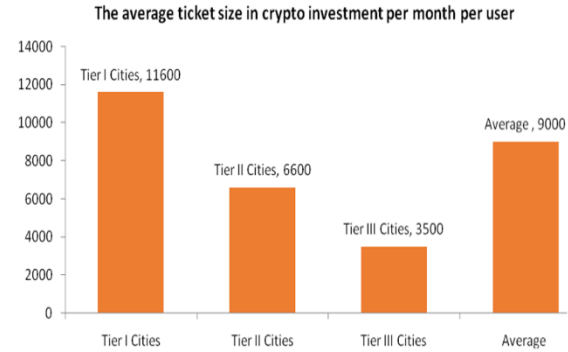
C. Future prospects of cryptocurrency in India

The major traditional asset classes like currency, gold, oil and stock lost their charm in the recession of 2008. At the same time the advent of Bitcoin led to emergence of cryptocurrency as a strong asset class. Apart from being an asset class, crypto can also be used to buy goods and service. The fairly low barrier to entry attracted the interest of the retail investors, but the investments by institutional inventors led to the unprecedented growth in cryptocurrency and made it most lucrative investment option. The global cryptocurrency market is now worth more than $3 trillion and is projected to reach $4.94 billion by 2030, growing at a CAGR of 12.8% from 2021 to 2030. In India, the emergence of online trading platforms such as WazirX, CoinDCX, Zebpay, UnoCoin and CoinSwitch Kuber etc. resulted in proliferation of cryptocurrency market in India. Some of the Indian companies which accepts crypto payments are Purse – an online electronic device retailer, Rug Republic-decor firm, Highkart – an e-comerse store, Nafa-an online gift card platform, Overstock- online furniture and home decor store, sapna-online store .

Regarding the current status of cryptocurrency in India, According to reports, the Standing Committee on Finance, headed by Lok Sabha member and former junior minister for finance Jayant sinha, heard views from industry experts, crypto exchanges, members of the Blockchain and Crypto Assets Council (BACC), analysts and associations on issues involving 'crypto finance, and it was agreed that cryptocurrencies cannot be banned but must be regulated. They reached on an

agreement that a system to govern cryptocurrency should be put in place. A bill "The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021" is being introduced to the Lok Sabha. The Bill aims 'to create a facilitative framework for creation of the official digital currency to be issued by the Reserve Bank of India. The Bill also seeks to prohibit all private cryptocurrencies in India; however, it allows for certain exceptions to promote the underlying technology of cryptocurrency and its uses'.

The proposed Bill may ideally serve to create a degree of uniformity and to get the various government entities engaged on the same page, while also providing security and assisting in the regulation and prevention of misuse of the otherwise uncontrolled markets.

In the Union Budget 2022, the Finance Minister Nirmala Sitharaman announced 30% tax on income from cryptocurrency and digital asset transfers. It will bring much-needed clarity and legitimizes crypto. Crypto now falls under the 'virtual digital assets' bucket and will be treated as a special asset class. In the Budget, Government introduced sections 115BBH (Tax on income from virtual digital assets) and 194S (Payment on transfer of a virtual digital asset).

In simplest terms:
Section 115BBH: From Financial Year (FY) 2022-23, any income earned (sale consideration (minus) cost of acquisition) from the transfer of virtual digital assets like Crypto and NFT will be taxed at 30% flat.
Section 194S: From 1 July 2022, any person (purchaser) responsible for paying any sum as consideration (in cash or kind) for the transfer of a virtual digital asset will have to deduct 1% tax and deposit this tax amount with the Government (subject to conditions). More clarity on the operational aspects of this provision is yet to be received.
Section 56: In addition to the above, virtual digital assets received as gifts will have to be disclosed and offered for tax (by the receiver of the gift) under the head 'Income from other sources'.

5.CONCLUSION

In terms of creation, cryptocurrencies are definitely one of the greatest innovations of man. While there are legitimate worries about the use of cryptocurrencies, but due to the recognition and acceptance it enjoys in India, regulation rather than ban is more realistic choice in India. The introduction tax on transfer of cryptocurrency and virtual digital assets brings much needed validation and it will herald a new era in the field of digital currencies. It will bring, big net-worth individuals and corporate to take meaningful exposure in crypto.

However, more clarity on the regulatory aspects as well as legal status of virtual digital currencies is expected from the Government. The much-needed regulations will bring transparency and accountability in the crypto market. Since government is now treating crypto as an asset class and tax on the transfer of virtual digital assets is introduced, it is need of the hour to safeguard the interests of the investors and ensure the security of investor's money, which will be a win-win situation for both the Government as well as investors.

A significant part of transactions within the future can happen through the employment of cryptocurrencies. Accepting and regularizing the cryptocurrencies will boost the adoption of crypto in India. It will create immense job opportunities and may help India to become a future leader in the field of Blockchain Innovation and technology.

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