

# Future of cryptocurrency in the absence of government regulation in India: a study on social and legal impact

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## ABSTRACT

Generally agreed-upon as a means of economic exchange, money is a commodity through which prices and values are determined. As currency, it travels anonymously from one person to the next and across nations, allowing commerce. A digital money known as cryptocurrency, is an alternative payment method developed utilizing encryption techniques. Cryptocurrencies act as a form of payment as well as a virtual accounting system because encryption technologies are used. The first cryptocurrency was *Bitcoin*, which was created in 2009. Other examples include *Ripple*, *Litecoin*, and *Ethereum*. Nevertheless, they are typically uninsured and difficult to convert into a form of real cash but cryptocurrencies run on a distributed public ledger called block-chain which is shared among the nodes of a computer network. Block-chains function as digital databases that store data electronically. Block-chains keep a secure and decentralized record of transactions. Decentralized block-chains are immutable, which implies that the data input is irreversible, i.e. the transactions are forever recorded and accessible to anybody. Cryptocurrency transactions between two transacting parties are faster than traditional money transfers since they are not regulated by banks or any other third party which increases the need for legalization of cryptocurrencies. Cryptocurrencies carry a number of hazards, including vulnerabilities, criminal activities, bugs, money laundering. Despite the hazards there is no centralized body that controls cryptocurrencies. While using cryptocurrencies is not banned, there are no established laws, regulations, or guidelines for resolving conflicts while using cryptocurrencies. Trading in cryptocurrencies is thus done at the risk of investors. This paper aims to analyse and understand the future of cryptocurrencies in the absence of regulations, its social and legal impact and identify challenges with a view to recommending a regulated regime in the use of cryptocurrencies for a safer society and consumer protection based on a qualitative survey.

**Keywords:** *Cryptocurrency, Block-chain, Encryption, Regulations, Market risks*

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## INTRODUCTION

Cryptocurrency is a new generation currency which is not regulated by any central authority in India.<sup>3</sup> One cannot feel cryptos physically like one can in the case of fiat money, because it is minted or issued by a single issuer. Generally cryptos are used to buy luxury items but it is not far away that cryptos will be used to buy a slice of pizza or to make daily transactions, but to use cryptos regularly people need to get familiar with the use of cryptocurrency just like people are familiar with online transactions. But there will be a shift from traditional usage of money to this decentralised system of transactions that is encrypted and has some layers of protection. Cryptocurrency is a medium of exchange that works without any third party interference but through distributed ledger technology. With the help of cryptocurrencies, international financial borders that are currently enforced by banks and governments can be eliminated and international payments are made more easy<sup>4</sup>. Transactions with the use of cryptos are instant and easy but comes with repercussions both legal and social.<sup>5</sup> Users buy cryptos from brokers, then store and spend them using cryptographic wallets. Crypto coins/tokens are encrypted in these wallets with private keys whose passwords are only known to the user. If your keys are stolen or lost, your cryptos are gone. Funds cannot be removed from an address without the corresponding private key. Since there is only one key to your asset there should be rules and regulations formulated by the legislative body for consumer protection. To make cryptocurrencies the future of digital transactions, licensing and taxation of the same is required. Inflation does not devalue the currency as in case of paper currency as they are launched with a fixed value, and due to the limited availability, an increase in demand would pull up its value to keep up with the market. Its decentralised nature does not allow anyone's monopoly over it; hence no organisation or person can determine its flow or value, thereby keeping it secure and stable. *"The government does not recognize cryptocurrency as legal tender or coin and will take all measures to eliminate the use of these crypto assets in financing illegitimate activities or as part of the payments system,"* Jaitley said.<sup>6</sup>

### Creation of Cryptos

Units of cryptocurrency are created through a process called mining, which involves using computer power to solve complicated mathematical problems that generate coins.<sup>7</sup> Users can also buy the currencies from brokers, then store and spend them using cryptographic wallets. Each time a cryptocurrency transaction takes place, a cryptocurrency miner, who also serves as a node on the blockchain on which these transactions are taking place, tries to decrypt the block containing the transaction information. For example, if Person Y wants to send 0.1 Bitcoins to Person Z, then miners on the Bitcoin blockchain compete to be the first to decrypt the

<sup>3</sup> Aras, S., & Kulkarni, V. (2017). Blockchain and Its Applications – A Detailed Survey. *International Journal of Computer Applications*, 180(3), 29–35. <https://doi.org/10.5120/ijca2017915994>

<sup>4</sup> Prasad, E. S. (2021). *The Future of Money: How the Digital Revolution Is Transforming Currencies and Finance*. Harvard University Press.

<sup>5</sup> Prasad, E. S. (2021b). *The Future of Money: How the Digital Revolution Is Transforming Currencies and Finance*. Harvard University Press.

<sup>6</sup> Anand, Nupur. "Arun Jaitley has just killed India's cryptocurrency party". *Quartz*. Retrieved 1 February 2018

<sup>7</sup> Bozic, N., Pujolle, G., & Secci, S. (2016). A tutorial on blockchain and applications to secure network control-planes. In *HAL (Le Centre pour la Communication Scientifique Directe)*. Le Centre pour la Communication Scientifique Directe. <https://doi.org/10.1109/scns.2016.7870552>

block that contains the transaction information. Decrypting the block not only authenticates the transaction, but also provides the information about who sent how many Bitcoins to whom and at what time and date.<sup>8</sup> Once the block has been decrypted and has been accepted by most of the nodes on the blockchain as being authentic, the block is added to the blockchain. Now, the verification process is pretty resource intensive in terms of the computational power required. As such, individual miners often find the process too expensive and so they join pools to collectively use computing power.

## Mining

Crypto mining refers to the process of using computer hardware to solve complex mathematical algorithms that validate and confirm transactions on a blockchain network, such as Bitcoin or Ethereum. Miners compete to solve the equations, and the first one to do so receives a reward in the form of newly minted cryptocurrency. To participate in crypto mining, miners use specialized computer hardware, such as ASICs (Application-Specific Integrated Circuits) or GPUs (Graphics Processing Units), that are designed to handle the high computational requirements of mining<sup>9</sup>. The mining hardware performs intensive calculations to verify transactions on the network and add them to the blockchain ledger. Crypto mining is an essential part of the blockchain ecosystem, as it helps to secure the network and maintain its integrity. However, it requires a significant amount of electricity to run the mining hardware, which has led to concerns about its environmental impact.

In order to ensure that only verified crypto miners can mine and validate transactions, a proof-of-work (PoW) consensus protocol has been put into place. PoW also secures the network from any external attacks. Crypto mining is somewhat similar to mining precious metals. While miners of precious metals will unearth gold, silver, or diamonds, crypto miners will trigger the release of new coins into circulation. For miners to be rewarded with new coins, they need to deploy machines that solve complex mathematical equations in the form of cryptographic hashes. A hash is a truncated digital signature of a chunk of data. Hashes are generated to secure data transferred on a public network. Miners compete with their peers to zero in on a hash value generated by a crypto coin transaction, and the first miner to crack the code gets to add the block to the ledger and receive the reward. Each block uses a hash function to refer to the previous block, forming an unbroken chain of blocks that leads back to the first block. For this reason, peers on the network can easily verify whether certain blocks are valid and whether the miners who validated each block properly solved the hash to receive the reward. Over time, as miners deploy more advanced machines to solve PoW, the difficulty of equations on the network increases. At the same time, competition among miners rises, increasing the scarcity of cryptocurrency as a result<sup>10</sup>.

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<sup>8</sup> Resources, M. a. I. (2022). *Research Anthology on Convergence of Blockchain, Internet of Things, and Security*. IGI Global.

<sup>9</sup> Hacker, P., Lianos, I., Dimitropoulos, G., & Eich, S. (2019). *Regulating Blockchain: Techno-Social and Legal Challenges*. Oxford University Press.

<sup>10</sup> *Mining Explained: A Detailed Guide on How Cryptocurrency Mining Works*. (n.d.). Freeman Law. <https://freemanlaw.com/mining-explained-a-detailed-guide-on-how-cryptocurrency-mining-works/>

## Blockchain

Blockchain is a decentralized digital ledger technology that allows transactions to be recorded, verified, and tracked securely and transparently across a network of computers. It was first introduced in 2008 as a way to create a digital currency, namely Bitcoin, but has since been used in various applications beyond cryptocurrencies. A blockchain is essentially a series of blocks, each containing a set of transactions. Each block is cryptographically linked to the previous block, creating a chain of blocks.<sup>11</sup> This means that once a block is added to the chain, it cannot be altered or deleted without changing all subsequent blocks. The decentralized nature of blockchain means that there is no single point of control or authority, making it more secure and resistant to tampering. Transactions on the blockchain are validated and confirmed by a network of nodes, which can be run by anyone with the necessary hardware and software. Blockchain technology has the potential to revolutionize many industries, from finance to healthcare to supply chain management, by increasing efficiency, reducing costs, and improving transparency and trust.

## Social impact of Cryptocurrency

While crypto can offer one to be their own bank it has also some potential side effects like high fee: transactions on the blockchain require a fee to be paid to the network, known as a miner's fee, to incentivize miners to validate and process the transaction. These fees can vary widely depending on network congestion and the amount of data in the transaction. The high fees of cryptocurrencies can make them unattractive for small transactions, and this can limit their practical use in everyday transactions.<sup>12</sup> For example, the average transaction fee for Bitcoin has increased significantly over the years, making it less viable for micropayments.

Cryptocurrencies have contributed to the widening of the wealth gap, as they have allowed a new generation of wealthy individuals to emerge who have profited from investing in cryptocurrencies.<sup>13</sup> This has created a new class of "crypto-rich" individuals who have become wealthy almost overnight, while many others have not had the opportunity or resources to invest in cryptocurrencies.

Cryptocurrencies have raised concerns about their environmental impact due to the significant energy consumption required for mining and transactions. The mining process involves solving complex mathematical equations, which requires a significant amount of computational power and energy. This energy consumption is estimated to be equivalent to the energy consumption of a small country like Ireland or Denmark. Every 1\$ of bitcoin mined is materially more carbon intensive than every 1\$ of gold mined. Most cryptocurrencies are based on a proof-of-work consensus algorithm, which requires miners to compete to solve mathematical equations and validate transactions. This process requires a significant amount of

<sup>11</sup> Litke, A., Anagnostopoulos, D., & Varvarigou, T. (2019). Blockchains for Supply Chain Management: Architectural Elements and Challenges Towards a Global Scale Deployment. *Logistics*, 3(1), 5. <https://doi.org/10.3390/logistics3010005>

<sup>12</sup> Halaburda, H., & Sarvary, M. (2016). *Beyond Bitcoin: The Economics of Digital Currencies*. Springer.

<sup>13</sup> Prasad, E. S. (2021c). *The Future of Money: How the Digital Revolution Is Transforming Currencies and Finance*. Harvard University Press.

energy consumption and generates a large carbon footprint. Furthermore, as the difficulty of mining increases, more energy is required to maintain the network, which can lead to even higher energy consumption and environmental impact. Additionally, the process of producing mining equipment and disposing of old equipment can also have a negative environmental impact, as it requires the use of natural resources and contributes to electronic waste. There have been efforts to develop more energy-efficient consensus algorithms and renewable energy sources for mining, but these solutions are still in the early stages of development<sup>14</sup>. Overall, the environmental impact of cryptocurrencies is a significant concern, and it's important to consider the potential environmental consequences of using and investing in cryptocurrencies.

### **Cryptocurrency and Mental Health**

Financial loss can have a significant and traumatic effect on individuals and their emotional well being. When an individual experiences a loss in their portfolio, whether it be realized or unrealized, trading and investing can result in increased stress, anxiety, and depression among other mental health challenges. More recently, there are many personal stories and testimonies of the impacts of trading cryptocurrency on mental health, including depression, constant worry, stress, sleepless nights, feelings of hopelessness or helplessness, binge eating or drinking, and substance abuse among other unhealthy thoughts and behaviors. Beyond mental health issues that can arise from crypto losses, financial loss stemming from such investments can result in suicidal thoughts, and ultimately suicide. Some individuals may experience a sense of hopelessness and helplessness of recovery from their financial loss, resulting in unhealthy thoughts that can result in suicidal ideation and suicide.<sup>15</sup> While suicide has always been thought of to be associated with a mental health disorders such as depression, suicide has also been found to be associated with financial loss in lieu of a mental health issue. In other words, anyone who experiences a sudden and significant loss in their crypto assets can be susceptible to suicidal thoughts and suicide, even without underlying mental health issues.<sup>16</sup> Unfortunately this is not surprising to addiction experts, as gambling addictions have the highest rate of suicide compared to other addictions as a result of the coinciding financial loss. This is not to say that all of those who will undergo suicidal thoughts or suicide resulting from crypto's current downfall are addicted to trading cryptocurrency, the majority are probably not. Rather, it speaks to the devastating impact that financial loss can have on mental health in general.

### **Cryptocurrency as a new object of Legal Regulation in India**

Cryptocurrency is used anonymously to conduct transactions globally between account holders. This way cryptocurrency can be used for conducting any sort of illegal transactions that include tax evasion and hiding of assets. The decentralized nature of cryptocurrency makes it a challenge for the government to ensure that it is not used for any illegal activities. The unregulated transactions of cryptocurrencies make it difficult to

<sup>14</sup> Shafie-Khah, M. (2020). *Blockchain-Based Smart Grids*. Academic Press.

<sup>15</sup> Sternlicht, L. S. & A. (n.d.). *Crypto Chaos – Volatility, Liquidation and Mental Health: Family Addiction Specialist: Addiction Counselor*. Aaron Sternlicht, LMHC, MS, CASAC.

<sup>16</sup><https://www.familyaddictionspecialist.com/blog/crypto-chaos-volatility-liquidation-and-mental-health>

keep a track of them. The prices are highly volatile and can fluctuate within a very short period. This will affect the economy of the nation and is something that the financial authorities of the country have to look into. With cryptocurrency still in its infancy, hackers and scammers get an opportunity for multiple fraudulent transactions and a lot of traders and investors have faced a loss of money which ultimately affects their mental health. If cryptocurrencies are legalised in our Country it will come under a legal tender status and will be backed and accepted by the government. It can also be used to settle debts of nations. We know that in India traders virtually transfer cryptocurrencies and use them for transaction and investment but it still does not have any legal tender status, although cryptocurrency is taxed under the category of virtual digital currency.

“Crypto assets are by definition borderless and require international collaboration to prevent regulatory arbitrage. Therefore, any legislation on the subject can be effective only with significant international collaboration on evaluation of the risks and benefits and evolution of common taxonomy and standards.”<sup>17</sup>

In April 2018, the RBI had issued a circular prohibiting all commercial and cooperative banks, small finance banks, payment banks, and NBFC from not only dealing in virtual/digital currencies themselves, but also instructing them to stop providing services to all entities which deal with virtual/digital currencies. As a result, the growth of the cryptocurrency business in India was hindered, as exchanges needed banking institutions to transmit and receive money. The Supreme Court ruled that the RBI circular was unconstitutional and overturned the prohibition. The Apex Court remarked that although virtual currencies have not attained the status of legal tender, they do show digital representations of value and are capable of serving as a medium of exchange, unit of account, and/or store of value. As India is flummox about their legalisation of cryptocurrency and with various circulars that are passed by the Reserve Bank of India and their issues regarding banning of such virtual currencies is being quashed by the Supreme Court of India, it can be acknowledged that blockchain operations are still consistent to procure impetus as they are the key to innumerable number of complications which helps them to expand their productivity within several government services. This technology is supported by other virtual currencies as all of them are licensed without a centralized chain of networks.<sup>18</sup> Ramani Ramachandran, CEO of a Singapore based crypto firm said that ZPX will start to expand their services in India. Neshal Shetty, co-founder of another crypto firm stated that WazirX will start operating in markets in India. Virtual currencies in India had come to a halt, after the 2018 circular issued by the Reserve Bank of India, barring financial services to conduct operations in cryptocurrencies. The CEO of Block Survey, Wilson Bright, said that, *"When a regulator like RBI bans, the market closes down. Six months back, we pivoted from crypto to blockchain, as we had to sustain. No investor was ready to back us amid the uncertainty of regulations."*

The Indian government is now debating the "Cryptocurrency and Regulation of Official Digital Currency Bill, 2021" (the "New Bill"). The New Bill wants to promote cryptocurrency commerce and its underlying

<sup>17</sup> Elements of Effective Policies for Crypto Assets. (2023, February). Policy Papers, 2023(004), 1. <https://doi.org/10.5089/9798400234392.007>

<sup>18</sup> Brandwire *"Understanding the Legality of Cryptocurrency in India"* The Times of India July 29, 2019

technology, restrict private cryptocurrencies in India with a few exceptions, and facilitate the creation of an official digital currency that will be issued by the RBI. The New Bill seeks a complete ban on all private cryptocurrencies in order to solve the issue of the lack of laws surrounding cryptocurrencies. The duality in the New Bill's proposal results from the RBI's ongoing uncertainty about which bitcoin kinds will be covered by the concept of private cryptocurrency. In March 2021, according to the latest amendments to the Schedule III of the Companies Act, 2013, the Government of India instructed that from the beginning of the new financial year, companies now have to disclose profit or loss on transactions involving cryptocurrency, the amount of holding, and details about the deposits or advances from any person trading or investing in cryptocurrency. The holder of any virtual currencies will also have to declare the number of holdings, details of deposit and advances from any person for the purpose of trading or investing in cryptocurrency.<sup>19</sup> The Indian government knows that virtual digital assets are a part of the international and Indian economy. They cannot be banned but a tax of 30% is charged on cryptocurrencies in India as announced in the union budget 2022. But taxation is not equivalent to legalization.<sup>20</sup>

## Conclusion

This paper attempted to make the readers understand the evolution and its current disputed form - Cryptocurrency. It explained the meaning and working of cryptocurrency in a brief form. The paper further analysed the reasons behind the popularity of cryptocurrency and its legal and social implications. This paper then went on to explain the current situation of cryptocurrency in India and the possible scenarios that might arise due to the government's decision on legalizing cryptocurrency. Cryptocurrency is today's modern revolutionary attempt to inbuilt technology with the most important commodity today- Money. Its effects on the global economy are two-sided- good as well as bad. But countries today are capable enough to use the positives of cryptocurrencies to make payments safer, while simultaneously regulating and monitoring its negatives. In my opinion, the change in its form is dynamic. They have their advantages and disadvantages. But this does not mean that we do not try to find out a way in which these changes can be adopted while attempting to minimize its loopholes. Embracing change is a part of living and moving forward, and in this era of technology and its experiments, it is vital to have an open system that can be changed and adapted according to the new developments taking place. Government must play a role in regulating the industries enabling crypto-currencies and create an enabling platform in the conversion of virtual currency to national currency. All providers must be licensed and subject to security checks, insurance and capitalization in the event of bankruptcy. The Know Your Customer (KYC) policy should be adopted across board with mandatory checks and records which need not necessarily be made open to the public but should be a pre-condition for transaction in order to give credibility to the transaction process. In conclusion, the future of cryptocurrency in India in the absence of government regulation remains uncertain. While there are many potential benefits to using cryptocurrencies, such as increased financial inclusion and greater privacy, there are also significant risks, such as money laundering, fraud, and market volatility. Without proper regulation,

<sup>19</sup> <https://www.legalserviceindia.com/legal/article-9163-legality-of-cryptocurrency-in-india.html>

<sup>20</sup> <https://vakilsearch.com/blog/is-cryptocurrency-legal-in-india-in-2023/>

it will be challenging to mitigate these risks and ensure that cryptocurrencies are used responsibly. Additionally, the lack of legal recognition for cryptocurrencies in India creates a barrier to their widespread adoption and limits their usefulness as a medium of exchange. Thus, it is essential for the Indian government to take a balanced approach to regulating cryptocurrencies, considering both the potential benefits and risks, to ensure that they can be used safely and effectively by all.

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5. India Blockchain Alliance: <https://www.indiablockchainalliance.org/>
6. CoinDCX: <https://coindcx.com/>
7. Unocoin: <https://www.unocoin.com/>

