

The Emerging Cryptocurrency Sector: An Indian Perspective

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Abstract

The concept of cryptocurrency is a novel idea in virtual or digital currency that has garnered significant attention from risk-takers, investors, the general public, and academic practitioners in the past several years. Cryptocurrency is a virtual currency that can be used as a medium of trade across a computer network without the need for support or maintenance by a centralized entity like the government or the Reserve Bank of India (RBI). Generally, cryptocurrencies employ decentralized control as opposed to digital currencies issued by Central Banks Digital Currency (CBDC). Similar to gold, cryptocurrencies have emerged as a new investment option in India. The decentralized network, decreased reliance on cash, lack of middlemen, and unstable pricing aspects of cryptocurrencies prevent them from reaching their full potential. Just behind Vietnam, the bitcoin economy of India is ranked second globally in terms of acceptance. The cryptocurrency market in India is poised to develop by leaps and bounds by 2030, earning \$241 million and potentially employing 877,000 people. With more than 230 firms popping up and about \$270 million invested in Indian blockchain and cryptocurrency start-ups until 2021, the crypto-tech ecosystem is growing quickly. As of 2021, 1.8% of adult Indians had made cryptocurrency investments—a 2.2 times increase in just one year. The goal of this research is to comprehend cryptocurrencies and their overall effects on the Indian economy. Cryptocurrency's future is unclear. The paper also examines the state of cryptocurrencies in India as well as its potential going forward.

Keywords: Blockchain technology, bitcoin, virtual currency, cryptocurrency, and decentralized digital assets.

1. INTRODUCTION

Cryptocurrency is electronic money that is not governed by a single entity and employs encryption for security government or a central bank. Bitcoin, the first and most well-known cryptocurrency, was developed in 2009 under the pseudonym Satoshi Nakamoto by an anonymous individual or group. Since then, thousands more, there are now several different types of cryptocurrencies, each with special characteristics and possible uses. Coins that function on a peer-to-peer network are decentralized, in contrast to traditional currency, which is managed by governments and central banks. A distributed network of nodes verifies transactions, which are then documented on a blockchain—a public ledger—for public access. As a result, once a transaction is recorded, it becomes transparent and unchangeable.

The last ten years have seen the rise of cryptocurrencies, which have revolutionized the world of international banking. The first decentralized digital currency is Bitcoin (James & Parashar, 2018). The introduction of a new currency in 2009 signaled the beginning of a unique financial ecosystem that was very different from centralized financial institutions and conventional fiat currencies. Since then, a wide variety of cryptocurrencies have emerged, each with distinctive characteristics and the ability to transform financial transactions, decentralize monetary systems, and alter the structure of international economies. The decentralized aspect of cryptocurrencies, made possible by blockchain technology, which provides clear and unchangeable transaction records without the need for middlemen like banks or other financial organizations, is what makes them so appealing.

When combined with cryptographic security measures, this decentralization offers improved financial privacy, lower transaction costs, and increased availability of financial services to people everywhere. But this very promise has brought about a paradigm shift in the dynamics of established financial markets, causing investors, regulators, and market participants to feel both excited and worried. The swift growth and acceptance of cryptocurrencies have sparked discussions about how they can affect current financial systems. There are many unanswered questions about how these digital assets will affect and enhance the current financial infrastructure, which includes banks, stock markets, and regulatory agencies. Furthermore, worries about regulatory actions, investor behavior, and volatility in the cryptocurrency market have created a dynamic and complicated environment that calls for in-depth investigation.

Types of Cryptocurrencies

Tens of thousands of cryptocurrencies are currently in circulation, with 10,000 predicted to exist by 2022. Some popular cryptocurrencies are as follows:

- **Bitcoin:** Cryptocurrency is synonymous with Bitcoin. Globally, people consider it as normal. Prospective investors should be aware of the recent surge in the price of bitcoins. A single Bitcoin cost \$68,000 in 2021. Positively, though, you may purchase smaller portions of the coin rather than the complete one.
- **Altcoin:** Altcoin is the word for any digital money that is an alternative to Bitcoin. In this ecosystem, Ethereum is the most well-liked. It is one of the cryptocurrencies with the fastest pace for growth available (Othman et al., 2020). In addition to this Lucky Block, there are other cryptocurrencies like Terra and Shiba Inu.

Cryptocurrency in India

India is amongst the fastest markets for cryptocurrency market globally, as per a new survey. Its growth has multiplied in the last few years, leaving behind some of the other countries. The Indian government is yet to realize the potential of cryptocurrencies. The Indian government and central bank are worried about the many negative consequences of cryptocurrencies. Among them was the potential contribution of cryptocurrency assets to money laundering and terrorism financing. The Indian Central Bank issued a warning in 2017 that digital Indian currency is not accepted as legal tender. But there was no official prohibition on digital money. 2019 saw the RBI release that mining, trading, possessing, transferring, or using cryptocurrencies in India can result in fines of up to ten years in jail or other penalties. It also emerged that the e-rupee or virtual rupee may very well become legal in India. In 2020, the Supreme Court of India nullified the ban on cryptocurrency put forward by the RBI. The RBI had in July 2022 recommended a ban on the cryptocurrency market, citing "destabilizing effects" on the financial and fiscal stability of the country.

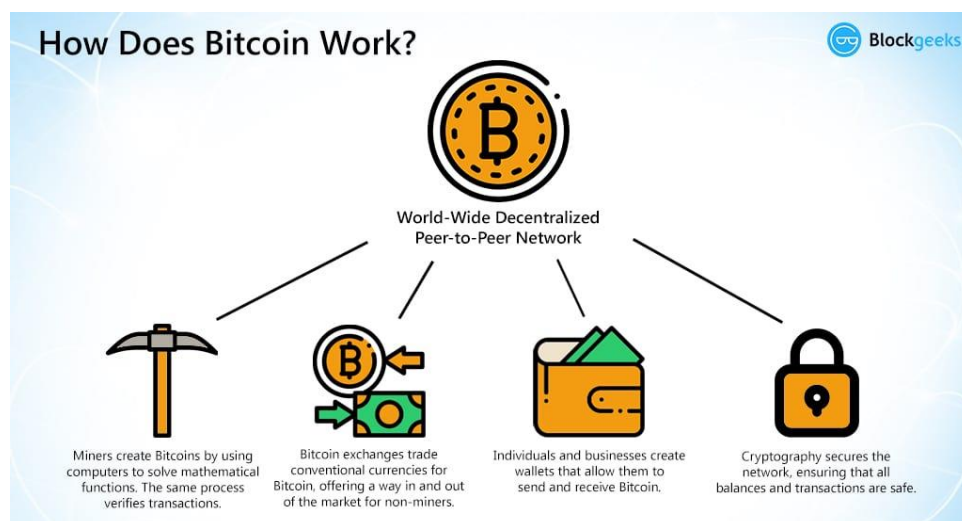
Blockchain's potential uses go beyond virtual currencies; use cases in supply chain management, healthcare, and other fields are being explored due to its transparent and unchangeable nature. Exchanges for cryptocurrencies have sprung up throughout India, offering consumers somewhere to purchase, sell, and exchange digital assets. It is anticipated that the legislative framework would give these platforms greater legitimacy and clarity, resulting in an environment that is safer and more secure for users. All things considered, India's experience with cryptocurrency is a complex story that includes evolving laws, unresolved regulations, and growing public interest. Stakeholders in the cryptocurrency ecosystem are keeping a watchful eye out for a comprehensive and well-balanced framework that addresses the promise of digital assets while also addressing the needs for consumer protection and financial stability, as the regulatory landscape changes.

There are several factors to take into account when analyzing the effects of digital currencies on India's traditional banking systems.

- 1. Financial Inclusion:** Digital currencies can fill gaps in inclusions related to banking within a country like India, which is too diverse and large. It will be quite an empowering thing for people who were earlier ignored by the conventional banking industry to have an avenue to access and use digital currency without requiring traditional banking infrastructure.
- 2. Disruption to Traditional Banking:** Traditional banking models are under threat from the emergence of digital currencies. Digital currencies may lessen reliance on traditional banking services by enabling p2p transactions excluding any middlemen, which could affect banks' revenue streams.
- 3. Technological Innovation:** To integrate digital currencies into the financial system, new technological advancements are required (Verma & Atri, 2024). Banks may need to invest in blockchain and cryptocurrency-related technology to stay competitive and comply with new regulatory regimes.
- 4. Control and Stability of Currency:** The introduction of official digital currencies by the bill might potentially grant the central bank more control over the monetary system. It also casts doubt on the sustainability of fiat currencies and the likelihood of a shift in monetary policy.

Benefits of Cryptocurrency:

- Using ledger systems and pseudonyms to mask identities is an example of inherent security.
- No extra transaction cost: The fee for a transaction is much less or free of charge.
- Lower entry hurdles: Unlike traditional banking systems, there are no access obstacles.
- Worldwide presence and acceptance: Virtual currencies are recognized and transacted globally in most countries.



(Blockchain Infographics, n.d.)

2. NEED OF THE STUDY

The selection of the research study is driven by several compelling motives that highlight the significance and relevance of the chosen topic:

- The financial sector is being disrupted by cryptocurrency, and one of the most important aspects of this transition is how it will affect conventional banking systems. Examining how cryptocurrency is transforming India's conventional banking environment is important for comprehending and adjusting to the evolving financial trends.
- There have been significant changes to the legal and regulatory framework in India regarding cryptocurrencies. To provide policymakers, financial institutions, and regulatory bodies with useful information, an analysis of the impact of the cryptocurrency revolution on traditional banking must evaluate the policy implications and possible regulatory frameworks.
- Investor interest in cryptocurrency is growing, so it's important to know what they think about it and the risks involved. Financial institutions and investors can gain significant information from this research, which can explore investor behavior, risk perceptions, and the influence on traditional banking investments.
- Blockchain technology, which provides a decentralized and secure foundation, powers cryptocurrencies. Researching the technological advancements that have accompanied the rise of virtual currencies can shed light on potential changes that traditional banks must make to their operations to maintain security and competitiveness.
- The study can investigate the adoption and usage of cryptocurrency by Indian customers. For traditional banks to be able to adjust their services in line with the shifting preferences and expectations of their customers, they must analyze consumer behavior in this environment.
- An analysis of the response of India's conventional banking sector to the global bitcoin revolution in other countries contributes to a deeper understanding of global financial trends. Indian banks can learn important lessons and tactics from this comparative analysis to help them deal with the changing environment.
- Cryptocurrencies can significantly impact a country's economic dynamics. For economists and policymakers to make well-informed judgments, they must look into the economic ramifications of this revolution, including how it will affect capital flows, inflation, and monetary policies.
- The era of cryptocurrency presents new threats and difficulties for traditional banks. Maintaining financial stability and protecting the interests of banks and their clients requires identifying and creating effective risk management strategies that are suited to the changing environment.
- The research study adds to the body of knowledge regarding how traditional banking and cryptocurrency interact within the framework of the Indian economy. It can provide a starting point for more in-depth research in the domains of finance, technology, and regulatory studies.

Research Objectives

1. To assess the impact and potential of cryptocurrencies in India.
2. To study how cryptocurrencies can impact India's present and future economy.

3. Literature Review

In recent years, there has been curiosity about the effects of cryptocurrencies on India's financial sector. Although there isn't much direct research on this particular subject, several related studies shed light on the Indian banking sector's larger background and the impact of financial technology. (Gulati & Kumar, 2016) carried out a study to evaluate how the global financial crisis affected Indian banks' profitability. This study emphasizes how critical it is to assess banks' effectiveness and performance in light of external economic concerns. The study's conclusions may be useful in determining how Indian banks will react when cryptocurrencies are introduced to the market. (Asif et al., 2023) examined how India's banking industry is being affected by financial technology. The study highlighted the banking industry's ramifications as well as the financial technology or fintech market's notable expansion in India. Since Bitcoin is a subset of financial technology, this study offers a starting point for comprehending how emerging technologies may influence India's banking sector.

(Kaliyamoorthy et al., 2024) examined the use of fintech in India's banking and financial services sectors. The study covered a range of fintech applications that are pertinent to the banking industry's adoption of cryptocurrencies, including blockchain technology and digital payments. Gaining knowledge about the existing use of these technologies can help with future cryptocurrency incorporation in Indian banks.

(Lekpek, 2022) discussed whether future cryptocurrencies will outweigh traditional currencies in the following ways: first, by defining their fundamental properties; second, by regulating their tax and accounting status; third, by highlighting the reciprocal effects of monetary policy and the cryptocurrency system; and fourth, by summarizing the benefits and drawbacks of cryptocurrencies for developing nations.

(Khandelwal & Kaur, 2023) focused on the dangers of investing in cryptocurrencies, such as the possibility of a crash, cyberattacks, and excessive energy usage from mining. (Vishwakarma et al., 2018) discussed the control and management of virtual currency-related concerns in several nations, including India, including the establishment of an appropriate legislative framework for the aforementioned objective. The operators of online wallets, gateways, and exchanges, as

well as other middlemen that facilitate these transfers, must now be held responsible for regulating the trading and exchange of cryptocurrencies like Bitcoin.

(Paul, 2019) provided an insight into the state of finance and its prospects are examined. The study examined the differences and difficulties between virtual and traditional currencies, taking into account the rise in popularity of virtual money over the last 20 years. In addition, it discussed these technologies and the requirements for using them, such as the idea of mining. The future of this technology is quite bright for its consumers, especially with the arrival of technological evolution and reform.

(Manjula.B.C et al., 2022) emphasized that traditional fiat money is unlikely to be replaced by cryptocurrencies, they may alter how globally interconnected markets communicate with one another by removing barriers related to normative national currencies and exchange rates. Cryptocurrencies have the potential to completely transform online marketplaces by establishing a fee-free, fluid trading environment.

(Rangapriya & Madhavi Lokhande, 2022) determined the main obstacles to cryptocurrency regulation by looking through a variety of international documents, reports, and journals; comparing these obstacles to the Indian context; and tracking the evolution of regulatory standards about digital assets over the last ten years to evaluate the prospects for cryptocurrencies in India.

(Dash et al., 2022) emphasized the potential effects on the Indian economy of smart contracts and digital currency supported by the Central Bank (CBDC). This study underlined how important it is that decision-makers take into account the technological and social difficulties involved in switching to digital currency. Given that cryptocurrencies function based on comparable principles to CBDC, the results of this investigation may be pertinent in comprehending the possible implications of cryptocurrency adoption in India. Although there is a dearth of direct studies on the effects of cryptocurrencies on the Indian banking sector, studies that have already been conducted on digital currency, financial technology, and banking efficiency offer insightful information that can guide further research in this area. A framework for examining the effects of cryptocurrencies on the Indian banking sector can be provided by comprehending how Indian banks have responded to prior technical developments and financial difficulties.

Present status of Cryptocurrency in India

Virtual currency or cryptographic currency is referred to as "advanced gold." However, investing in cryptocurrencies always entails a significant risk. In October 2013, a single bitcoin was just \$123, but by January 2021, its value had increased to an incredible \$34,000. If money had been invested in gold, it might have multiplied, but Bitcoin has since returned multiple times as much. There is a reason why this is called "digital gold." Easyfi Network, Kasa, and Vault are just a few of the cryptocurrency banks in India at the moment (Shukla & P, 2021). After the United States Dollar and the Japanese Yen, the digital currency that was outstripped by the Indian Rupee had the third-largest volume. Following the demonetization in 2016, cryptocurrencies were introduced to a large number of people. Nevertheless, the Indian market's development slowed down, and reality soon set in. Even after a humongous population, still India was trailing behind. There are several restrictions on cryptocurrencies in India, including:

- Lack of security and trust
- Financial risks associated with the market.
- There are no rules.
- Questions about taxability.
- The price volatility and the KYC rule.

Security and Trust: Since cryptocurrencies are a digital form of payment, they are readily available. Investors don't get good returns from any of them. The fact that the largest volume of INR is being used for cryptocurrencies has made them popular in India. Despite the sluggish growth of the Indian market following demonetization in 2016, many people were exposed to cryptocurrencies. The Global Crypto Adoption index provided by Chainalysis projects an 880% rise in cryptocurrency use globally by 2021. Having an index value of 0.37, India ranked 2nd, just behind Vietnam. Within a year only, cryptocurrency had clocked a 641% growth. The bitcoin industry is expanding rapidly and holds great potential. It seems like India may benefit from this industry as well. It is unlikely that cryptocurrencies will eventually replace fiat money. Alternatively, fiat money and cryptocurrencies may coexist peacefully in the future. It will enable people and businesses to use any amount of money for a variety of objectives. The Indian cryptocurrency industry is just behind Vietnam in the global adoption of cryptocurrencies. Chainalysis states that three things were taken into account when ranking several P2P rates of exchange, retail value of on-chain and on-chain value. Vietnam comes in first with a score of 1.00 on the file. Pakistan, which also has a score of 0.37 on the index, is in second place, just ahead of India. India received an excellent rating as a result of its relatively high score on P2P exchange trade volume.

The effect of virtual currencies on the economy of India

India has a huge economy to manage as a developing nation. Even though the majority of economists have been able to express their opinions on the subject, it is expected that the legalization of cryptocurrencies will have a financial and

positive impact on India's economy. The Indian economy would be significantly impacted by the five major effects of cryptocurrency:

Positive effects

- **Employment growth:** Approximately 40,000-50,000 people are employed in the sector of virtual currency or cryptocurrency at the moment. By 2030, the organization hopes to have more than 800,000 open situations, as per a new examination. India already has a large pool of professionals in IT. Additionally, the employees can be hired for very reasonable rates. India is on its way to becoming a major global Bitcoin hub and destination due to its recent expansion (Verma & Atri, 2024). Numerous job opportunities will result from this in Banking, Financial Services and Insurance (BFSI), Information Technology, customer service, and support, among many other fields. These days, the nation's employment rate is rising thanks in part to the bitcoin industry.
- **Reach Atmanirbhar Bharat's objective:** The government of India's objective is to establish lone, formally overlooked, and supervised cryptocurrency that will decrease reliance on unaffiliated, privately held, cryptocurrencies. Popular cryptocurrencies like Dogecoin, Ethereum, Bitcoin, and others are currently based abroad. The nation will fully develop its cryptocurrency, eliminating the need for it to rely on other cryptocurrencies. The Indian government can achieve its ambitious project of "Atmanirbhar Bharat" in this sector with the help of traders, and investors, who will each have one coin for their requirements.
- **Improve digital payments:** It is quick and easy to conduct transactions using cryptocurrencies. The sender and the recipient can immediately carry out their respective transactions because there is no involvement from a third party. Besides, mediators like banks and installment entryways never again charge exchange expenses. Each transaction saves money as a result of this, which also lowers the transaction's cost. Therefore, the use of digital forms of currency in transactions can significantly cut down on the amount of time and money required for each advance payment.
- **Boost for the FinTech industry:** As already mentioned, there is a big chunk of the IT expert base in India. IT and the banking sector working together can lead to countless commercial opportunities and can lead to Foreign exchange in the country. It will also attract significant investment globally since the Indian government is enacting rules for an official digital currency and implementing strict regulatory mechanisms. This will advance the Indian economy and provide the FinTech industry with a significant boost (Asif et al., 2023).

Negative impacts:

- **Negative for investors:** Due to the unpredictable nature of cryptocurrencies, investors will not be able to tackle the carry-forward losses. Traders will be discouraged from investing by this concern, especially retail investors. in digital currency.
- **Dilemma:** Burdening digital currencies don't unequivocally and completely proclaim them legitimately because annual duty in India depends on resources as opposed to the means or technique for procurement.
- **Unfavourable for the Indian banking system:** According to Reserve Bank of India officials, consumers may deposit their hard-earned earnings in these currencies since they are attractive assets which may lead to lower resources with the banks for lending purposes (Krishna et al., 2023). The regulatory authorities warned that if continued for a long time, the public's hard-earned money could also go in vain due to the cryptocurrency's volatile nature.

Way forward

- **Connecting India's start-up environment to cryptocurrency:** Blockchains and cryptocurrencies have the potential to rejuvenate the country's start-up scene by generating employment possibilities for everyone from investment bankers to traders, managers, designers, business analysts, etc.
- **India's approach to CBDC:** India's finance minister declared the launch of the virtual rupee, or e-rupee, as the Central Bank for Digital Currency (CBDC) for itself. It would significantly strengthen the digital economy of India.

Additionally, e-currency, or digital currency, will result in a less expensive and more effective currency management system. Central bank digital currency, however, ought to coexist peacefully with other virtual currencies. To make the most of the benefits of the technology used by blockchain, regulation is necessary to stop major issues, make sure cryptocurrencies aren't abused, and shield gullible investors from fraudulent activity and excessive market volatility. The regulation needs to have a clear, visible, and cohesive goal statement that drives it forward (Vishwakarma et al., 2018). Under applicable national laws, a legal and regulatory framework must clarify cryptocurrencies as securities or other financial products and designate the responsible regulatory body.

Conclusion

Given the enormous potential for technical advancement that cryptocurrencies have, the Indian government needs to take a position in this space. The tax on bitcoin gains also contributes significantly to the amount of direct taxes paid to the Income Tax department, which may further stimulate economic growth in general. It would be better for the Indian government to focus on regulating it rather than imposing a complete ban. It must be made more trustworthy, transparent,

and safe. To invest more in cryptocurrencies, citizens should be more knowledgeable about how they operate overall, particularly in India, which has the second-largest population. The future of cryptocurrencies looks promising for e-business, e-payments, and e-investments. Cryptocurrency laws need to be created, taking into account several legal and financial factors to create a more user-friendly and safe system.

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