

# Rise and Growth of Cryptocurrencies in India: A Study Based on Effect on Cryptocurrencies on Indian Economy

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## Abstract

Nowadays the advancement of technology has not only enriched the progress of humankind but also it has immense effect on development of any country's economy. Presently the concept of digital currency has grown up worldwide and India is not exceptional one. The number of online users has increased during COVID-19 phase and during this time span the investors have gained more knowledge about cryptocurrencies. The online investors have started investing in cryptocurrencies. The total no. of crypto has increased to 10,400 in 2021 as compared to 66 in 2013. The main advantage of investing crypto is less transaction cost with simple technology which helps the investors to invest in it. As per the data, the crypto user population in India is increasing rapidly as compared to any other countries. The report also reveals that Asian countries are having maximum no. of investors who are investing in crypto. The research has discussed about various advantages of crypto like less transaction cost, no effect of inflation along with some disadvantages like unregulated market, high volatility rate etc. The study also finds out that the crypto market investment in India will touch a new high of US\$15.6 Billion. The crypto market size in India has increased by 40% in 2021 as compared to 2016. The developed technology along with less transaction cost will attract more Indian investors to invest in crypto in near future.

**Keywords:** Cryptocurrencies, Block Chain, Bitcoin, Ethereum, GanderCoin.

## I. Introduction:

Nowadays 'Cryptocurrency' is very popular among the young investors worldwide and India is not exceptional one. As the technology changes the way of trade has also changed. The technology has created various opportunities for the businesses. Nowadays most of the users are accustomed with online trading and transactions. Newly Cryptocurrency is being considered as a trendy investment option as it is creating high returns for their

investors as compared to traditional ones. Cryptocurrency can be used as a medium of exchange instead of real currency for various financial transactions. The value of Cryptocurrencies depends on various treasured intangible assets which can be utilized in different operations.

Cryptocurrency has started its journey in 2008 with Bitcoin which is the first mode of virtual currency. Since then the price of not only Bitcoin but other cryptocurrencies had also increased expeditiously. As it gains popularity, not only the developed countries but also developing countries too legalized Cryptocurrency. Cryptocurrency also started gaining popularity in India from 2019 and past one year its acceptance has achieved a new height. The main reason behind the high acclamation of Crypto in India is the announcement of Demonetization. Because of Demonetization Policy the investors with huge cash holdings had started to find out new investment opportunities where the investors can invest the money in different aspect. Though in 2018, the Reserve Bank of India had announced ban on trading of Cryptocurrency but in 2020 the ban was called off by Supreme Court of India and Indian Citizens had welcomed the decisions.

## II. History of Cryptocurrency:

- The concept of Cryptocurrency was first developed by an American Cryptographer named David Chaum. He had developed an electronic money which was known as 'ecash'. In the year 1995, he had developed another Crypto named as 'Digicash' which has been used as an electronic medium of exchange to make various payments.
- In 1998, Wei Dai, a computer engineer had developed 'b-money' which had also been used as an electronic medium for exchanging cash.
- In the year 2008 as a first Cryptocurrency 'Bitcoin' has been developed. It has been considered as a Peer to Peer Electronic Cash System which has been used as a medium of exchange. The 'Bitcoin' has been developed by a feigned developer named as Satoshi Nakamoto.
- In the year 2009, Mr. Satoshi Nakamoto had created the first decentralized cryptocurrency named as Bitcoin. Soon after the invention of Bitcoin, in 2011 another cryptocurrency had been invented called Litecoin.
- Bitcoin has been accepted as a legal tender in June, 2021.

## III. Review of Literature:

- Angel and McCabe (2015) have studied various challenges facing by Bitcoin globally. The researchers also studied various risks which are associated with cryptocurrencies.
- Bohme et al. (2015) had studied the legal aspects of Bitcoin in various countries. Presently cryptocurrencies specially Bitcoin has gained an attraction of all the investors globally, An individual can easily open an account to transact in cryptocurrency. The researchers have discussed the future prospects of virtual currency as well as its effect on global economy.

- Luther (2015) has applied Down and Greenway Model (1993) to demonstrate the reasons behind the failure of adopting cryptocurrency as an alternative currency.
- Ivashchenko (2016) has analyzed the advantages and disadvantages of cryptocurrencies. A comparison has been done between traditional currency and cryptocurrency on the basis of market capitalization. The main advantage of cryptocurrency is its increasing usage in small and medium business.
- The effect of cryptocurrency on Indian Economy has been discussed in various research. The crypto market in India is not regulated by any Govt. Bodies. In 2019 the Reserve Bank of India has passed a Bill to ban trading on crypto in India. The study discussed about the process of investing in crypto and its effect on Indian Economy as well (Parashar, 2018).
- V Anil Kumar and P Swathy (2019) had studied the growth and opportunities of Cryptocurrency in India with special reference to Bitcoin. The researchers had studied crypto market in India and the various challenges that are facing by cryptocurrencies. The study has discussed about the advantages and disadvantages of cryptocurrencies along with the legal position of crypto trading in India.
- (Manjunath, 2021) had studied the cryptocurrency market in India. The researchers also studied the legal aspects of crypto trading in India. The researchers had tried to find out the co-relation between the volatility of Gold and Bitcoin in India. The study concluded that there is no significant relation between the changing prices of Gold and Bitcoin in India.
- (Sahu, 2022) had studied the growth and historical prospect of cryptocurrency in India. The researchers also studied the legal aspects of crypto trading in India. The research has discussed about the various steps that has been taken by Indian Govt. to control the trading of Bitcoin. In 2017, the Reserve Bank of India had issued a circular related to risk and complications in trading crypto. The study concluded that the trading of crypto are increasing rapidly in India and the low transaction costs are motivating investors to invest more in it.

## IV. Various Models of Cryptocurrency:

### a. The Net Cost Model:

The Net Cost Model of cryptocurrency valuation is based on the following assumptions:

- i) Certain amount of Bitcoin units will be credited as a reward.
- ii) Cryptocurrency can be purchased at an exchange.

The value of cryptocurrency under this model based on the mining process and the purchase value of the cryptocurrency at the exchange.

### b. Network Value to Transaction Model:

The value of Cryptocurrency under this model is based on the demand and utility of the cryptocurrency.

c. Monte Carlo Simulation:

Bitcoin prices are highly volatile because of uncertainty in the future price predictions. Under this method, historical prices of Bitcoins have been considered to estimate the risks.

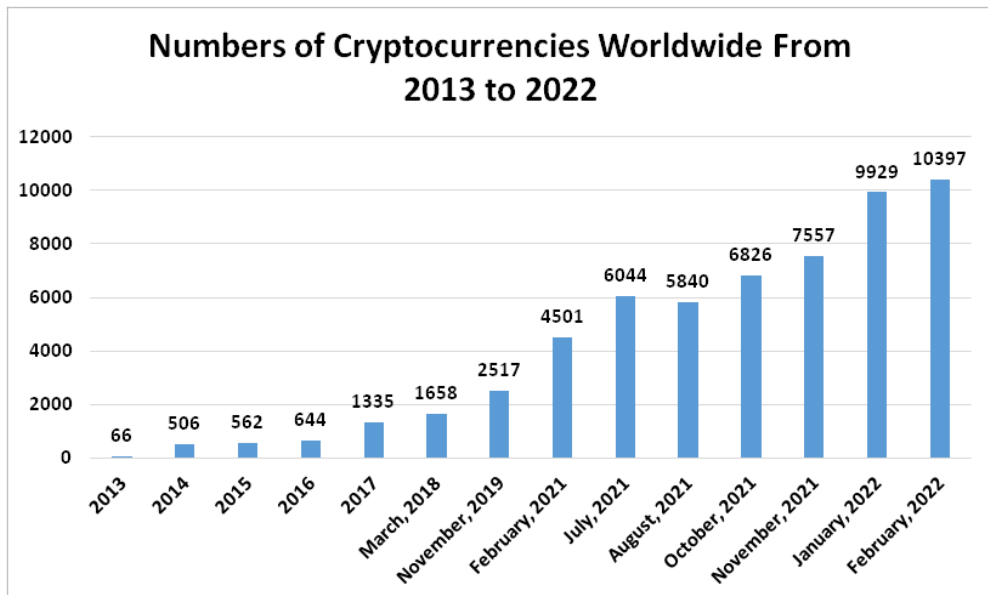
V. Various Types of Cryptocurrencies:

- 1. **Bitcoin:** It is a digital currency which has been found out in 2009 and it has been coined by Satoshi Nakamoto. The trading of Bitcoin will not cover by any central management or bank supervision body or any other Govt. regulations. The trading platform of Bitcoin uses cryptography and peer-to-peer software. All the transactions of Bitcoin are being recorded in Public Ledger and it will be available for all the users in servers throughout the world.
- 2. **Ethereum:** The trading of Ethereum is also taking place on decentralized Block Chain platform. The traders can track their transactions through public ledger account. The token system has been created to trade Ethereum.
- 3. **Ripple:** The firm named as XRP has created the cryptocurrency called Ripple. Like Bitcoin and Ethereum, Ripple is also trading Globally. The main advantage of Ripple is it can be exchanged against many different fiat currencies as well as cryptocurrencies.
- 4. **Solana:** The cryptocurrency Solana was developed in the year of 2017. The main advantage of Solana is it may process more transactions in less time and it has lower transaction fees as compared to other cryptocurrencies.
- 5. **Cosmos:** Cosmos is another Block Chain crypto which is also processing transactions quickly. The economic center of Cosmos Platform is served by Cosmos-Hub. The Cosmos –Hub is using ATOM as a primary token and the transaction fees depends on the number and the amount of transactions per investors.

TABLE 1: Cryptocurrency Market Worldwide:

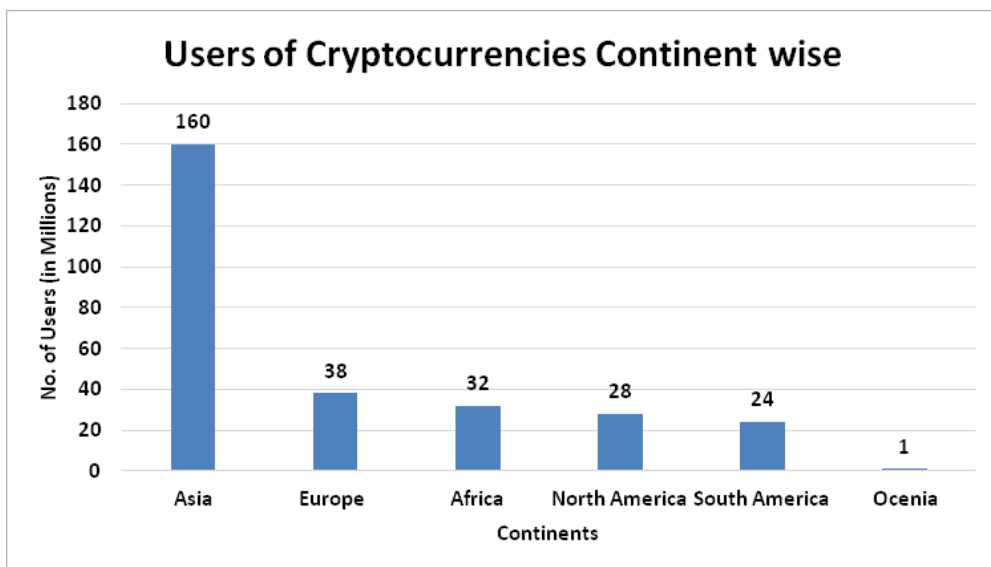
Currency	2013 Rank	2022 Rank*	Market Cap Change	Price Change (2 d.p.)*
Bitcoin	1	1	↑ \$395.32 billion	↑ \$20,645.13
Litecoin	2	20	↑ \$3.87 billion	↑ \$51.37
Namecoin	3	639	↑ \$10.91 million	↑ \$0.04
Peercoin	4	799	↑ \$0.73 million	↑ \$0.10
Terracoin	5	1,737	↓ \$1.06 million	↑ \$0.02
Devcoin	6	-	-	-
Novacoin	7	2,418	↓ \$1.12 million	↓ \$4.23

Sources: CoinMarketCap, CoinMarketCap and investing.com.

**CHART 1:** Numbers of Cryptocurrencies Worldwide from 2013 to 2022:

Sources: Quantity of Cryptocurrency, 2022, Retrieved from <https://www.statista.com/statistics/863917/number-crypto-coins-tokens/>

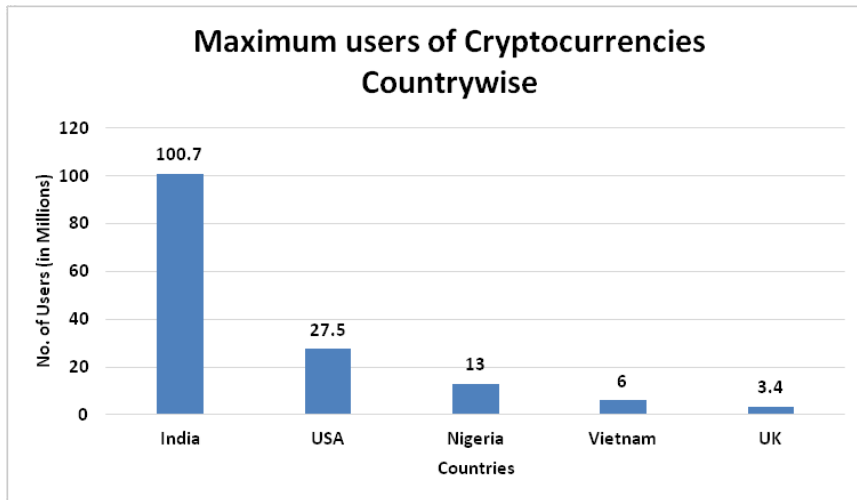
As the numbers of users of cryptocurrencies increases, the same way the numbers of cryptocurrencies are also increasing rapidly. In 2013, there was only 66 cryptocurrencies which are being traded worldwide. But during the COVID phase the numbers of cryptocurrencies are being doubled in 2021. As per the report by Statista, presently there are 10397 cryptocurrencies are being traded worldwide.

**CHART 2:** Users of Cryptocurrencies Continent wise in 2021:

Source: 'How Many Cryptocurrencies are There In 2023?' by Josh Howarth, Retrieved from [explodingtopics.com/blog/number-of-cryptocurrencies](https://explodingtopics.com/blog/number-of-cryptocurrencies)

As per the Report the maximum users of Cryptocurrencies are from Asian countries followed by Europe and Africa. The Asian countries are having more populations; hence investors are also maximum as compared to other countries.

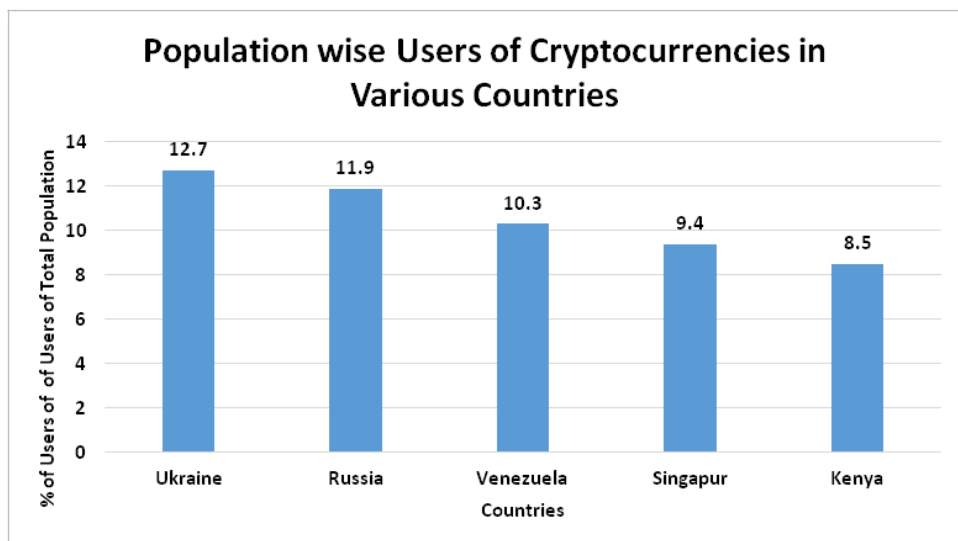
**CHART 3:** Maximum Users of Cryptocurrencies Country Wise in 2021:



Source: 'How Many Cryptocurrencies are There In 2023?' by Josh Howarth, Retrieved from [explodingtopics.com/blog/number-of-cryptocurrencies](https://explodingtopics.com/blog/number-of-cryptocurrencies)

The Report also indicates that India is having maximum numbers of investors in cryptocurrencies followed by USA and Nigeria. As per Report, presently 100.7 million investors from India are investing in crypto and 27.5 million investors from USA are trading in cryptocurrencies.

**CHART 4:** Population Wise Users of Crypto Currencies in Various Countries:



Source: 'How Many Cryptocurrencies are There In 2023?' by Josh Howarth, Retrieved from [explodingtopics.com/blog/number-of-cryptocurrencies](https://explodingtopics.com/blog/number-of-cryptocurrencies)

As per the Report, Ukraine are having more users as a percentage of total population followed by Russia. Venezuela is holding third position as a percentage of users of crypto as a percentage of total population.

**TABLE 2:** List of 5 New Cryptocurrencies added in Crypto Market Recently:

Name	Current Price	Fully Diluted Market Cap	Volume	Block Chain	Added*
Pop Coin	\$0.001099	\$1,098,712,269	\$364,019	BNB	1 day ago
Proof of Memes	\$0.2097	\$209,652,062	\$243,834	-	1 day ago
Vetter Skylabs	\$0.0002469	\$6,172,912	\$8,378	BNB	2 days ago
Thanksgiving Floki	\$0.0000102	\$1,146,800	\$468	BNB	2 days ago
Mafia World Cup	\$0.002654	\$265,366	\$1,417	BNB	3 days ago
Pegasus PoW	\$0.0001032	\$103,239	\$6,180	Own Block Chain	3 days ago
Trice	\$4.64	\$464,318,007	\$328,573	-	3 days ago

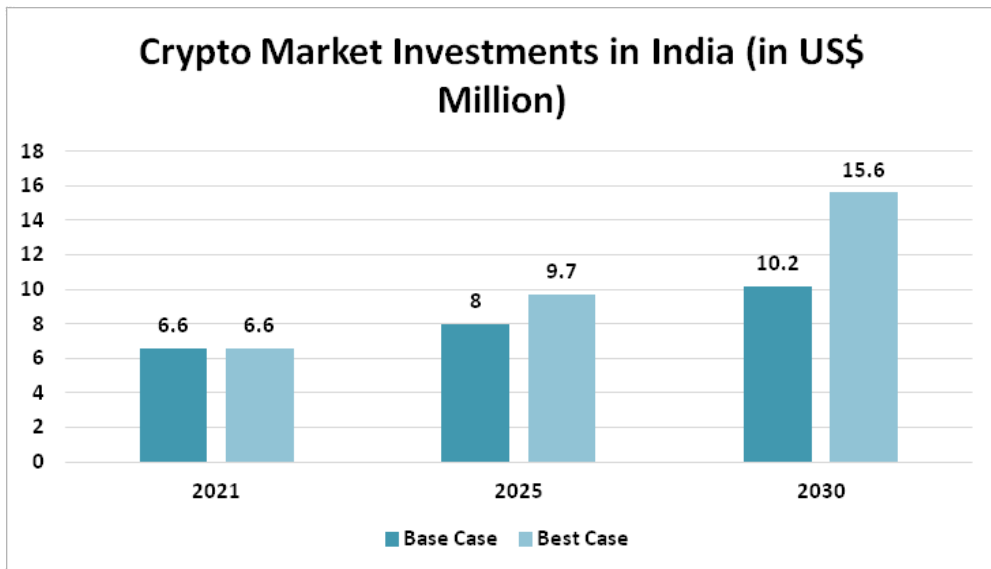
Source: Coinmarketcap. \* Data as on 12th November, 2022.

The table is showing the list of 5 new cryptocurrencies which are being added recently. Pop Coin is being added on 11<sup>th</sup> November, 2022 with a market capitalization of \$1098712.269. Followed by Pop Coin, Proof of Memes and Vetter Skylabs have also introduced in crypto market. Among all these 5 new cryptocurrencies, Trice is being listed with highest market capitalization of US\$ 464318007.

## VI. Prospective of Cryptocurrencies in India:

Nowadays, the concept of cryptocurrency in India is very attractive. According to a recent study, India has the fastest growing cryptocurrency market in world. In India, cryptocurrency/assets are mainly popular among young and women investors who can apt for high risk. According to a survey report by the Economic Times, India is having 20 millions of investors who are investing in cryptocurrency/assets. The Report also says that, most of the investors are from tier 2 and tier 3 cities of India.

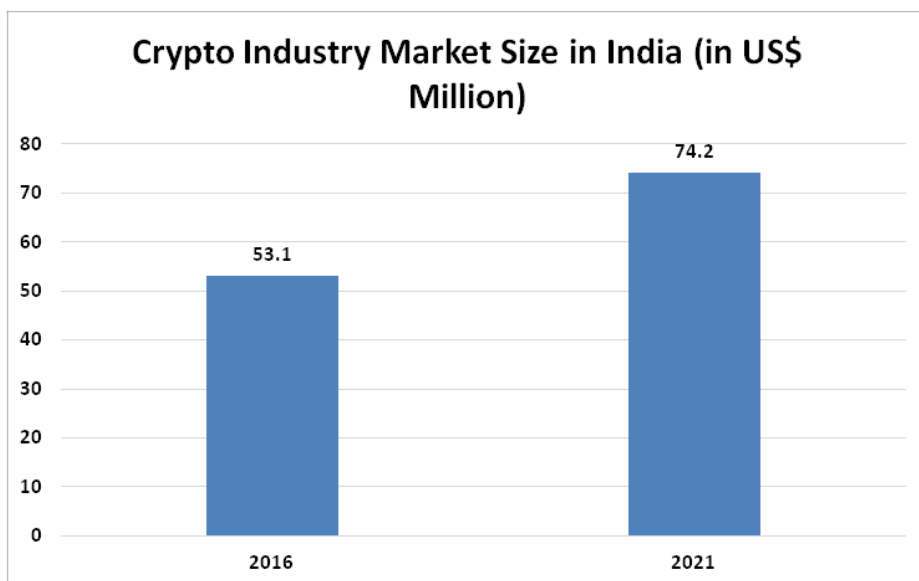
**CHART 5:** Expected Volume of Crypto Market in India by 2030 (in US\$ Million):



Sources: NASSCOM Report<sup>1</sup>, Retrieved from <https://nasscom.in/knowledge-center/publications/cryptotech-industry-india-decentralized-systems-center-stage-digital>

As per the Report by NASSCOM, the Crypto market in India is growing rapidly. In 2021, the Crypto market size in India was US\$73.8 million and it is expected that the market size will touch US\$ 123.2 million in 2025 and US\$241.1 million by 2030.

**CHART 6:** Estimated Crypto Market Investments in India by 2030 (in US\$ Million):



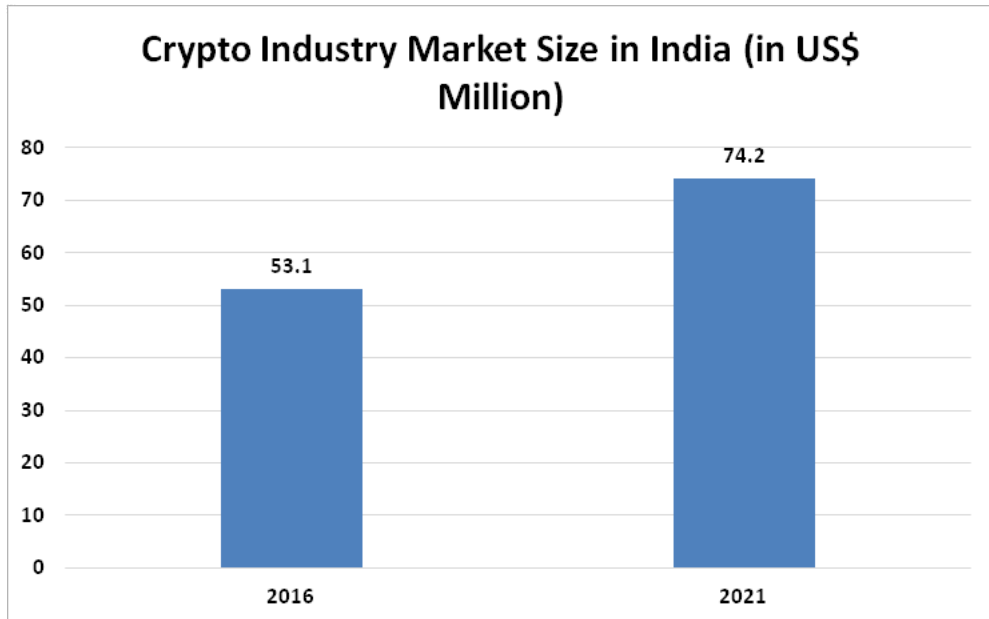
<sup>1</sup>Base Case: Growth and adoption CryptoTech in India continue at the current rate on specified factors.  
Best Case: Growth and adoption CryptoTech in India accelerates rapidly with two sided growth-higher demand pull and investments in development and maturity of CryptoTech.



Source: NASSCOM Report, Retrieved from <https://nasscom.in/knowledge-center/publications/cryptotech-industry-india-decentralized-systems-center-stage-digital>

The NASSCOM Report also analysed the Crypto Market Investments in India in 2021 and also forecasted the future of it. The Report reveals that the total crypto market investment in 2021 was US\$ 6.6 million. The study also forecasted the future Crypto Market Investment in India. It is forecasted that in 2025 the total crypto market investment in India will be US\$9.7 million which is expected to growth further to US\$15.6 million by 2030.

**CHART 7:** Crypto Market Size in India in 2021 (in US\$ Million):



Source: NASSCOM Report, Retrieved from <https://nasscom.in/knowledge-center/publications/cryptotech-industry-india-decentralized-systems-center-stage-digital>

The Report by NASSCOM also analyzed the present Crypto market size in India. The Report has compared the market size in 2016 with the market size of 2021. In 2016 the crypto market size in India was US\$ 53.1 million whereas in 2021 the market size was US\$ 74.2 million. The total crypto market size has increased by 39% in 2021 as compared to 2016.

## VII. Effect of Cryptocurrencies on Indian Economy:

After Economic Liberalization in 1991, the Indian Economy is growing rapidly. In 2019, Prime Minister Mr. Narendra Modi had envisioned that Indian Economy will reach at US\$5 trillion economy by 2024-25. If India wants to achieve US\$5 trillion economy by 2024-25, it should maintain a minimum annual growth of 10.8% annually. Due to COVID-19 the GDP of India has decreased to 5% as compared to 8% but it is recovering slowly.

The unemployment rate also increased because of COVID. But the investment option in cryptocurrency has created new job opportunities for unemployed Indians. They have started in investing in crypto as a side job. Bitcoin is the most popular cryptocurrency among the investors. As per the report, the Indian Crypto market has reached to US\$1.7 trillion which cannot be ignored. In 2017 the Reserve Bank of India had already issued a circular and advised the investors to avoid in investing cryptocurrencies because of its volatility. In 2019 the Reserve Bank of India had passed a Bill to ban trading in cryptocurrencies, but later the ban has been lifted as directed by Supreme Court. As compared to other developed countries the per capita income of Indian citizens is much lower. To boost up the economy Indian Economy, the Govt. may allow the citizens to invest in cryptocurrencies through various financial institutions. The Govt. also may set up a separate legal body to control the trading of cryptocurrencies. If more Indian citizens will be allowed to invest in cryptocurrencies in legalized way, it will not only boost up the Economy but also increase the incomes of Indian citizens.

## VIII. Regulation of Cryptocurrency in India

Prior to 2019, the Crypto market in India was not regulated by any Govt. bodies. As the investment in crypto is increasing rapidly, the Reserve Bank of India has prohibited the dealing of virtual cryptocurrency in 2019 as per section 35A of Banking Regulation Act. The ban also imposed on all the financial institutions which all are providing services related to cryptocurrency transactions as per section 45JA and 45L of Reserve Bank of India Act, 1934. But some of the crypto investors has filed a petition against the Bill introduced by Reserve Bank of India in Supreme Court. In justification the petitioners mentioned that the Bill will discourage the investors in investing cryptocurrencies. The Supreme Court has not allowed RBI to pass the Bill on Cryptocurrency.

In Budget session of 2022 the Finance Minister of India Ms. Nirmala Sitharaman has made an announcement of Tax of 30% on Income from virtual assets like cryptocurrency in each financial year. The Financial Minister also announced that any losses from Virtual Assets are not eligible for set off against any other incomes as well as any income from virtual currency. It has also been publicized that except cost of acquisition no other expenses are allowed as deduction while reporting the Income Statement. 1% TDS also attracts on the gifting of digital assets in the hands of receiver.

## IX. GanderCoin: India's First Cryptocurrency:

GanderCoin is the India's first Cryptocurrency which has been launched on 30<sup>th</sup> May, 2022. It has been listed in various crypto trading platforms like CoinCRED, COINLORD and INDOEX. The two major trading platform CoinCRED and COINLORD had rewarded with GanderCoin to their investors who joined during the launch time of GanderCoin. The concept of GanderCoin has been initiated by Shaik Ayesha and Subi Ansari. The main objective behind the creation of India's own cryptocurrency is to support digital

financial services to ensure credibility among investors and transparency in transactions of GanderCoin. Like other cryptocurrencies investing in GanderCoin is also easy and it also attracts less transaction cost. GanderCoin is being developed in a hope that it will create a new revolution in digital payment system in India.

## X. Advantages of Cryptocurrency:

- **No Effect of Inflation:** Inflation does have effect on all currencies but except virtual currencies. As the inflation rises the value of currency declines. But the cryptocurrencies are not effected by Inflation.
- **Managing by Own selves:** The crypto market is neither controlled by any Govt. bodies nor it covered under any specific law. The crypto is governed and managed by the crypto developers or crypto miners. In crypto market all the transactions are being recorded in online ledger and it is being up-to-date by the miners.
- **Effortless Currency Exchanges:** The transaction of cryptocurrencies is happening online. The cryptocurrency can be purchased against many currencies like US\$, Indian Rupee, Euro, Pound etc. The crypto can be exchanged against any currencies with the help of various digital wallets with minimum transaction fees.
- **Decentralization of Crypto Currency Market:** The main advantage of crypto market is that it is not being controlled by any of the Govt. bodies or financial institutions. The developer of various crypto currencies is mainly controlling the crypto market. The decentralization of crypto market will help the market monopoly free. It also helps the market to maintain their own process to determine the price of the currency.
- **Minimum Transaction Fees:** Another main advantage of cryptocurrency is that it can be transferred anywhere within a second. The transaction fess of transferring crypto is minimal or some time it is equal to zero. The lower transaction cost also attract the investors to invest more in crypto.
- **Fastest Process of Transferring Funds:** The process of transferring the crypto from one party to another is faster as compared to any other fund transfer. The investors also being encouraged in investing more in it as it is taking less time to transfer the balance.

## XI. Gray Areas of Crypto Currencies:

- **Unregulated Markets:** The trading of cryptocurrencies are running 24/7 worldwide irrespective of Govt. holidays. The main advantage of Crypto is it is being traded online and not controlled by any Govt. Bodies. However, it can also be considered as disadvantages of it. As the trading procedure are not controlled by any central bank or financial institutions the transactions related to crypto are inevitable. The price of crypto also not controlled by any Govt. institutions or bodies. The price of the crypto mainly depends on how associate investors are pricing the same. Sometime this pricing process will discourage other investors to invest in it.

- **Volatility Level:** The concept of cryptocurrency is a modern concept and hence it does not have enough historical data to forecast the cryptocurrencies in future. Inadequacy of historical data of crypto prices keep the market volatile. The investors who are willing to take risk in volatile market are investing in crypto. But the investors who all are disinterest in speculation and in need of a stable source of income, are avoiding in investing in crypto.
- **Loss of Data:** Cryptocurrency is a virtual money which has been deposited in digital wallets protected by digital passwords. If any owner erroneously deletes or forget the password, it will be impossible for the investors to revive it back and the money will be freeze.
- **Legal Issues:** The trading in cryptocurrencies neither controlled by any Govt. Bodies nor it covered under any Law. Hence it is becoming difficult in controlling unlawful activities related to cryptocurrency. Deregulation of cryptocurrency will help the criminals in converting black money into white. This kind of money laundering also uses in manipulating the crypto prices. At the end the normal investors are suffering with a huge loss. Hence, many countries have already illegalized the trading of cryptocurrency.
- **Tax Procedures:** As the concept of Cryptocurrency is still new for many of the countries, it is being difficult to frame tax charges on income from cryptocurrencies. Not only that, many countries still unclear about the gain calculations of Income from Crypto. With the help of this situation certain type of investors are avoiding in paying tax to the Govt. Moreover, the law related to settlement of transaction costs are also not cleared in various countries tax code which mislead the investors.
- **Fraud with Data:** Though the Block Chain systems which are being used by various cryptocurrencies are protected, but still the hackers can hack the individual account. Most of the hackers are using Phishing and social engineering techniques to hack the individual account. There are some investors who are also revealing the passwords to the hackers which helps the hackers to do fraud.

## XII. Conclusion:

Cryptocurrency has introduced a new system of digital payment worldwide. The new payment will help various companies to boost up their business. Though various cryptocurrencies are using different types of block chain systems but the uses of these various block chains are very simple which attracts the investors most. This research paper has discussed about various issues and challenges faced by cryptocurrencies in India. The study also explained the market growth of crypto in India along with its effect on Indian Economy. The study reveals that the future prospect of cryptocurrency in India is very promising and it is going to create huge opportunities for Indian investors to invest in various cryptocurrencies. The advance technology of Block Chain system will help cryptocurrency to grow rapidly in near future. As India has already launched its own crypto, it cannot be denied that the Crypto market will be having great effect on Economy and it will the Indian Govt. to boost up the economy.

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