

# The Economics of Digital Currency: World of Crypto Currency

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## Abstract

*Crypto currency is a form of asset which exists in digital form that is in binary format and it comes with the right to use. In this context digital asset is being referred to national currency which is used as a medium of exchange. This transaction is secured using cryptography. Crypto currency acts as digital token that uses cryptography for exchanging digital signatures of token transfer, peer-to-peer networking and decentralization. Some of the popular crypto currencies available for trade in online market are Bitcoin, Namecoin, Litecoin, Peercoin, etc. The present study will further help in understanding the pros and cons of digital money and how it can be made more secure. The paper explores many aspects of Crypto currency platforms attempting to answer the main questions of this research which are "Will Crypto currency be the next currency platform? Are virtual currency platforms safe enough to be used?" It investigates different Crypto currency platforms in order to provide deep insight about mechanisms of implementing, controlling, issuing, spending and exchanging Crypto currencies alongwith studying the impact of demonetisation on Cryptocurrency*

## 1. INTRODUCTION

The term "virtual currency" refers to a medium of exchange existing entirely in intangible form that is not a legal tender but can be substituted for legal tenders. Older forms of "currency" that are not "legal tender" include paper-based currency substitutes, such as military scrip and depression scrip. In recent times, the term "virtual currency" has developed an added connotation that it exists only in an electronic or digital form and is used only as a medium of exchange between members of an online or virtual currency community. Virtual currencies may be used for online games, social media, or corporate loyalty programs for buying virtual goods or redeem prizes. A subset of virtual currency is "cryptocurrency," by which we mean an internet-based virtual currency in which the

ownership of a particular unit of value is validated using cryptography. Its value varies by its movement in the market. The paper explores many aspects of Cryptocurrency platforms attempting to answer the main questions of this research which are "Will Cryptocurrency be the next currency platform? Are virtual currency platforms safe enough to be used?" It investigates different Cryptocurrency platforms in order to provide deep insight about mechanisms of implementing, controlling, issuing, spending and exchanging Cryptocurrencies.

## 2. LITERATURE REVIEW

(Raymaekers, 2014) in his research article states Bitcoin to be a cryptocurrency which was introduced in 2009 to be first decentralized digital

currency. Bitcoin allows online payments to be made by sending money via banks, buying goods and services online to be done from one party to the other without going through a financial institution (Raymaekers, 2014). There are many advantages of using bitcoin currency such as the speed of transaction, security of transaction, cost and convenience (Raymaekers, 2014). The technology that supports bitcoin is blockchain technology. Over US\$1.2 billion has already been invested in blockchain start-ups (Shin, 2016). Blockchain technology increases the efficiency and transparency of governance, financial and security settlements, and financial clearing processes. Hence, blockchain is of great interest to businesses legitimately involved in the bitcoin eco space (Robb, 2017). With its origins in distributed databases, the blockchain's data is partitioned into blocks, continuously adding new sequential blocks of data (Swan, 2015). Cretarola and Figà-Talamanca (2017) are economics researchers and academic professionals that analyzed and developed a model of Bitcoin pricing derived from consumer confidence. The authors state "one of the main issues about Bitcoin is whether it should be considered a currency, a commodity or a stock". They arrive at the conclusion that the speculative nature of Bitcoin drives the high market volatility and that Bitcoin's volatility is more like a stock than a currency.

Low and Teo (2017) agree that Bitcoin and other cryptocurrencies are a financial instrument, but conclude that it may not exactly fit existing models of financial instruments despite the similarities among them feasibly as a form of property. The authors find in their conclusion that Bitcoin may be a new form of property that is sustained by

consumer faith and trust in the decentralized system itself, which may be bolstered by legal recognition and further sustained via regulation. Manta and Pop (2017) discuss the difficulties and risk of Bitcoin and other virtual/digital currency payments due to the lack of legal enforcement inherent in internet transactions that are not legally binding because of limited divergent opinions on applicable regulations. They find virtual currency to be highly volatile due to the lack of established regulatory accountability. This presents great risk to those that use virtual coins as a means of payment as well as commodity investments. The authors used traditional scientific research, utilizing measurements, documentation, statistics, data analysis, and peer rigor to draw conclusions from their results regarding the sustainability of the trends they observe. The authors find that the United States of America is one of the most advanced in terms of the regulation of virtual currency. Additionally, they authors suggest that regulation is important to mainstream appreciation and adoption in mainstream financial institutions as part of future financial services, particularly its distributed, trust-less, system ledger, "blockchain". Wales (2015) is an entrepreneur and advocate for crowdfunding and the democratization of funding agencies, i.e banking and lending in capital markets. The author posits that a fundamental shift in lending, made possible due to peer-to-peer technologies, may empower and enable disenfranchised markets in undeveloped countries that lack traditional banking services and improve existing wealth inequality.

Bitcoin only very recently became a subject of research in economics. The topic has been of interest for longer in computer science. A small

number of theoretical papers written by computer scientists address incentives. (Eyal, 2013) show that mining is not incentive-compatible and that the so-called "selfish mining" can lead to higher revenue for miners who collude against others. The threshold for selfish mining to be profitable is lower than for double-spending attacks.

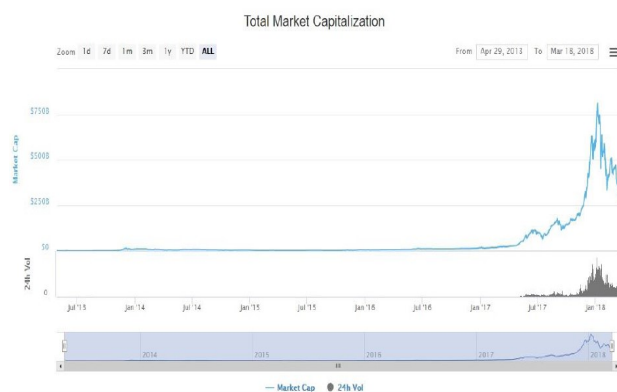
### 3. OBJECTIVES OF THE REPORT

- To study the origin of crypto currency.
- To study the current economic scenario of Crypto Currency globally and in Indian context.
- To study the impact of cryptocurrency on economy, banking and finance.

### 4. THE CRYPTOCURRENCY MARKET

#### *Global Landscape*

As of March 18, 2018 there are 1564 Cryptocurrencies available & traded in about 9422 exchanges. The market capitalization of all the cryptocurrencies is \$275,797,435,861 i.e. \$275 Billions. & 24-hour volume was \$ 18,207,953,654 i.e.\$18 Billions.The Bitcoin has maximum dominance in the cryptocurrency market with around 45% of market share & market capitalization of \$142.2 Billions (Rs 9.25 Trillion). Its market price is \$ 8254.8 i.e Rs 5,35,767.



Source: The growth of Cryptocurrency in India

#### *B. Its Rise in India:*

As early as 2012, small scale Bitcoin transactions were already taking place within the country. These were still early days in the development of Bitcoin when only crypto hobbyists were interested in Bitcoin. By 2013, Bitcoin was beginning to gain a level of popularity that was spreading across many countries. That year, a few businesses began to accept Bitcoin payment. A vintage era pizza shop called Kolonial in the Worli area of Mumbai became the first restaurant service in India to accept Bitcoin payments.

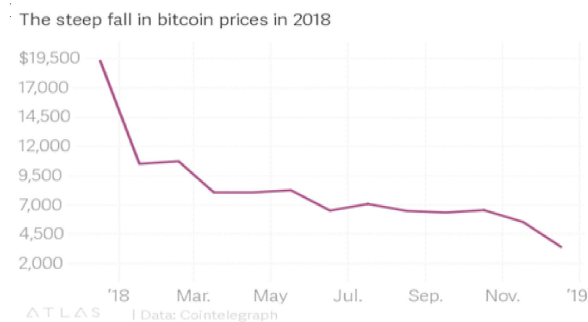
In a short space of time, cryptocurrency exchanges began to spring up within the country. Pioneers like BtcxIndia, Unocoin, and Coinsecure began offering cryptocurrency exchange and trading services in India. Over time, others like Zebpay, Koinex, and Bitcoin-India were added to the list. With the proliferation of crypto trading and exchange platforms, the crypto market in India has grown from its modest level in 2013 to what it is today. Apart from these online exchanges, there are also a number of over-the-counter (OTC) crypto shops in the country.

The 2016 demonetization policy may have spurred the adoption of cryptocurrencies among a considerable portion of the population but realities soon began to emerge that have stifled the growth of the market in the country. Despite its vast population, India only contributes 2 percent of the total global cryptocurrency market. capitalization. The small role being played by such a large economy can be attributed to the high cryptocurrency prices & the RBI-led government crackdown. The general level of prices of cryptocurrencies in India is on the high side.

Market rates are relatively higher by as much as 5 to 10 percent compared to the global average.

*Perils and promises of trading in cryptoassets in India:*

The year 2018 was a decisive one for India's cryptocurrency ecosystem. From a central bank diktat prohibiting banks from dealing in cryptocurrencies, to the country's biggest exchange, Zebpay, downing its shutters, investors and traders believe they've seen it all in the past year. In December 2017, the price of bitcoin was at an all-time high of nearly \$20,000, and investors in India were making a beeline for cryptocurrencies. This year, however, prices plummeted and currently a bitcoin



In order to stay afloat, exchanges have experimented with peer-to-peer (P2P) and crypto-to-crypto trading. This allows traders and the exchanges to circumvent the RBI ban as transactions are not routed through the exchanges' bank accounts.

## 5. FEATURES OF CRYPTOCURRENCIES

**Convertible to Fiat Currency:** By using cryptocurrency exchanges, users may buy and sell cryptocurrencies in exchange for the fiat currency of their choice (subject to the availability at the exchange), much like a foreign currency exchange. Exchanges in the U.S. are subject to state regulations as money transmitters/money services businesses and to Know Your Customer

regulations under the Bank Secrecy Act. Cryptocurrency exchanges offer a variety of different services which may resemble retail banking services and merchant payment processing services in addition to cryptocurrency/ fiat currency exchange.

**Irreversible:** A transaction cannot be reversed by either party after it is confirmed. No cryptocurrency currently provides a mechanism to reverse transactions even in the situation where someone may have fallen victim to malicious actors. Cryptocurrencies which support multi-signature transactions (where M of N signatures are required to access the output of a given transaction) and time locks (where the output of a transaction is unspendable until a future time) allow the construction of transactions which are effectively reversible or escrowed.

**Transparent Transaction Information:** Similar to varying degrees of customer information, cryptocurrencies record varying levels of transaction information (i.e., physical location of transaction endpoints, value of the transaction, time of the transaction, etc.). The degree of transaction information provided by cryptocurrencies may discourage ecosystems participants from adoption as it prevents those participants from being able to conduct activity that is available in the traditional financial system.

**Rapid Settlement (Scaling):** The cryptocurrency technology should enable rapid settlement of transactions as increasing users join the network in order to prevent unconfirmed transactions and maintain low transaction fees. Due to their limited scale and acceptance, the number of transactions cryptocurrencies can process is orders of magnitude smaller than those currently handled

by retail payment systems. It remains to be seen if and to what extent cryptocurrencies would be able to evolve in order to process a significantly higher number of transactions.

**Permissionless:** Users can download and install the software necessary to receive and send Bitcoins and other cryptocurrencies for free on their own. Anyone may submit transactions to the network without any authentication other than the ability to put valid signatures on transactions, demonstrating ownership of the funds being spent.

**Secure:** Cryptocurrency funds are locked using a public key cryptography system. Only the owner of the private key can send cryptocurrency. This use of cryptography and current computational limitations to break this cryptography bolster the security of cryptocurrency transactions. The acceptance of cryptocurrencies can be affected if differing versions of the ledger coexist during extended periods of time, or if the procedures to achieve consensus are flawed.

## 6. CRYPTOCURRENCIES THAT CLOSELY ALIGN TO DESIRED FEATURES

**Bitcoin:** The Bitcoin blockchain is a distributed and decentralized digital money system. It is decentralized in the sense that there is no central authority responsible for regulating or taxing the money system. As Bitcoins are mined and transactions are verified via peer-to-peer cryptographic proof-of-work, there is no need for such an authority. The Bitcoin blockchain is also distributed - meaning every node on the network retains a complete copy of the digital ledger, which prevents tampering, while ensuring full transparency.

**Ethereum:** Ethereum is an open-source, public, blockchain-based distributed computing platform featuring smart contracts. Ethereum's focus on smart contracts - contracts able to self-verify their own conditions using both blockchain and external data - utilizes a tamper resistant means for criminals to expand the crime-as-a-service model.

**Monero:** Monero is an open-source, freely available, secure, private, and untraceable cryptocurrency. Originally created in April 2014, Monero adoption has increased significantly over the last few years, with its value reportedly increasing by 2,760 percent in 2016. (15) While many new cryptocurrencies are viewed as derivatives of Bitcoin, Monero is hailed as a new form of cryptocurrency, possessing unique privacy and decentralization properties.

**Zcash:** Zcash is marketed as a permissionless cryptocurrency that can fully protect the privacy of transactions using zero-knowledge cryptography. Zcash also enables users to send public payments similar to Bitcoin. With the support for both shielded and transparent addresses, users can choose to send Zcash privately or publicly. Zcash payments sent from a shielded address to a transparent address reveal the received balance, while payments from a transparent address to a shielded address hide the value received.

## 7. MAJOR EXCHANGES OPERATING IN INDIA

India has seen a positive growth in the cryptocurrency market vis-à-vis other countries. In line with recent growth in the global markets, bitcoin exchanges in India are very much operational and successful. Their business models

range from basic trading platforms to comprehensive service providers. The type of services being offered in the current market is listed in one of the above sub-topics (supra).

Listed below are some of these exchanges that have made it big in the industry

Name of the Exchange	Name of the Company promoting the platform	Brief of Company Structure	Date of Set-up of Exchange	Date of formation of Company	Website	Location(s)
Coinsecure	Secure Bitcoin Traders Pvt Ltd	company set up as a private company in India	N/a	2014	<a href="https://coinsecure.in">https://coinsecure.in</a>	Delhi, India
Bitxoxo	Bitxoxo Bitcoins Online Pvt Ltd	company set up as a private company in India	N/a	2016	<a href="https://www.bitxoxo.com">https://www.bitxoxo.com</a>	Warangal, Telangana, India
Unocoin	Unocoin Technologies Pvt Ltd	company set up as a private company	2013	2015	<a href="https://www.unocoin.com">https://www.unocoin.com</a>	Bengaluru, Karnataka, India

### Volumes of Trading in Bitcoins

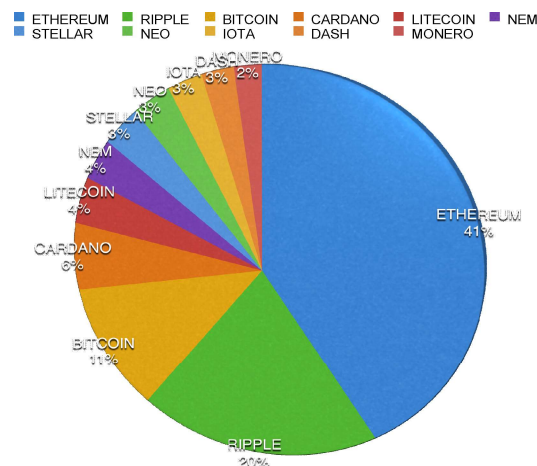


Local Bitcoins is an internationally renowned bitcoin exchange, primarily used for trading purposes by users round the globe. Presented in chart 6.2 above is data showcasing volume of trading in bitcoin in Indian Rupee (INR) in the given exchange since the beginning till June 27, 2017. As on the date, the aggregate volume in trades is equivalent to almost INR 2.5 million. Evidently, high trading volumes can be ascertained in late 2015 compared to pre 2015, however the numbers reduce and then move on a normal pace while gradually increasing up to the beginning of the year 2017, where excessive trading is evident. Trading came up abnormally in the year 2017 in India and everywhere else too.

CRYPTOCURRENCY	MARKET CAPITALISATION	PERCENTAGE SHARE	PRICE	NO. OF UNITS
ETHEREUM	\$ 95 BILLION	41%	\$ 973.84	97551959
RIPPLE	\$ 47 BILLION	20%	\$ 1.21	38842975207
BITCOIN	\$26.9 BILLION	11%	\$ 15.92	168969849
CARDANO	\$ 14 BILLION	6%	\$ 0.54	25925925926
LITECOIN	\$ 9.6 BILLION	4%	\$ 175.47	5471021
NEM	\$ 8.4 BILLION	4%	\$ 0.93	903225806
STELLAR	\$ 8.1 BILLION	3%	\$ 0.45	1800000000
NEO	\$ 7.7 BILLION	3%	\$ 118.62	6491317
IOTA	\$ 6.6 BILLION	3%	\$ 2.39	276150628
DASH	\$ 5.9 BILLION	3%	\$ 749.8	786877
MONERO	\$ 4.9 BILLION	2%	\$ 312.77	1566646

Table 1: Market Capitalisation of Crypto Currency

Source: <https://coinmarketcap.com/>



Graph 1: Cryptocurrency In Terms Of Market Capitalisation

## 8. USING BITCOINS IN THE CORPORATE WORLD

People use virtual currencies everyday so the concept is not a brand new phenomenon. Examples range from credit card reward points and airline miles to online video game currencies. It is the decentralized peer-to-peer function of Bitcoin that gives it unique properties. Businesses and corporations are continuously looking for new ways and innovations to increase sales. Bitcoins have some advantages and disadvantages in the

corporate world. Bitcoin does, in a way, protect itself from a country's economic instability.

Bitcoins are digital and float against other currencies and as such are protected against economic instability or issues such as political unrest. Despite this, the price of Bitcoins is very volatile which comes from speculations, media coverage and uncertainties as the currency is still in its infancy. For corporations, this amount of volatility is unacceptable. Virtual currencies also lack liquidity to the point that it would be very hard to use it as an alternative to fiat currencies. If most corporations decided to actively use Bitcoins in their daily business, the demand for virtual currency would create an imbalance in supply and demand, further increasing price volatility. However this is quite appealing to those who are wary of high inflation from badly run monetary policies of central banks. The supply that miners can add into the circulation is too limited for widespread use. The currency also lacks a formalized market.

## 9. ADVANTAGES OF CRYPTOCURRENCY

The benefits of digital currency are a plethora. Not only is it good for the business or the business owner but the buyer themselves. Of course if you purchased a specific crypto and it has shot up in price, you're buying using pennies on the dollar. In the long term, it definitely pays off. That is definitely one of the benefits of bitcoin.

- **Easy access** - Cryptocurrency is readily available to the general public. Almost anyone can make use of it. It is a decentralized operation and investors from all over the world have easy access to them.

- **Quick and Easy Payments** - Making payments using cryptocurrency is very easy. You can do it in just a matter of a few seconds. It is very fast because you don't require to feed many details, you don't even need to enter your credit/debit card details. All you need is the address of the wallet of the person or enterprise to whom you wish to make the payment too.
- **Fast Settlements** - With cryptos, you don't need to wait a couple days for your business to receive the money. Due to the technology cryptocurrencies are based on, the blockchain, it removes delays, payment of fees and a host of other third party approval that might have been present.
- **Lower Fees** - We've all been there and sometimes it could be painful just to view your monthly account statements from your bank. You'll often be shocked at the number of fees chalked up. Transferring money by using any other online forum or bank gateway is expensive as they levy considerable fees for the transaction. Credit card processing companies charge hefty fees. But it is not the case with cryptocurrency as the costs are nil or negligible. With credit cards or debit cards, the seller is the one paying a fee but for crypto's, it is the buyer paying the small fee.
- **Private**- You don't need to share your identity or whereabouts or the details of the transactions made between you and the beneficiary. No information is required to share with the government and the bank regarding the deal. It is truly decentralized.
- **Identity Theft** - Nobody can steal your personal information from merchants, which

ensures the privacy of your sensitive data. By creating a proxy ID, you can make sure that no one knows anything about you. Among the benefits that come from using cryptocurrency is the protection of your online identity.

- **No chargebacks** - Once you made the payment, you cannot chargeback. This considerably depletes the chances of a fraud. Once the transfer has completed, it cannot reverse. Nobody can file chargeback like you can on credit cards. It has its cons but can be an benefit also.

## 10. DISADVANTAGES OF CRYPTOCURRENCY

All the advantages do not mean that there are no risks involved in investing in cryptocurrencies. Just like anything else financially, they are not perfect and there are drawbacks of Bitcoin. Here we will discuss the disadvantages of cryptocurrencies:

- **Difficult to Understand** - Cryptocurrencies are relatively new and come with a learning curve. People end up investing without proper knowledge and lose money to something they did not learn about.
- **Lack of Knowledge** - People are not aware of how to use cryptocurrency and hence open themselves to hacker. The technology is somewhat complex and therefore one needs to be mindful of it before investing.
- **Not Accepted Widely** - Not many websites and companies accept digital currencies yet. Very few countries have legalized the use of cryptocurrencies. It makes it impractical for everyday use. Due to lack of acceptance, before buying or investing online or offline, you need

to make sure that it's accepted at that place where you want to use it.

- **Can Lose Your Wallet** - There is a possibility of losing your wallet. If you have stored the money in the form of digital currency on your phone or computer, you better remember your password and not lose those devices. Losing your coins means you won't be able to retrieve it, even with the help of legal assistance so that is just one of Bitcoins flaws.
- **No Way to Reverse the Payment** - If you mistakenly pay someone by using cryptocurrency, then there is no way to get a refund of the amount paid. All you can do is to ask the person for a refund and if your request is turned down, then just forget about the money.
- **Uncertainty & Volatility** - Since cryptocurrencies are so new, they are also very volatile. Many corporations don't want to deal with a form of money that is going to go through huge swings in volatility.
- **Scaling** - Based on the way smart contracts are designed, there is a limit to the speed and number of transactions it can process at a time which has hindered the widespread adoption of digital currencies. With the introduction of Lightning Networks, the crypto community has put a foot in the right direction which breathes hope into the idea that cryptocurrency could one day replace conventional credit card transactions.

## 11. LEGAL STATUS OF BITCOINS CURRENCY

Currency is generally defined as tokens used as money in a country. In addition to metal coins and



paper bank notes, money orders, traveler's checks, it also includes electronic money or digital cash.

To fit in this definition, this is not exhaustive,

"Currency" includes all currency notes, postal notes, postal orders, money orders, cheques, drafts, travellers cheques, letters of credit, bills of exchange and promissory notes, credit cards or such other similar instruments, as may be notified by the Reserve Bank, as per Section 2(h) of Foreign Exchange Management Act, 1999 5

As is evident from the above definition, bitcoin doesn't fit in any of the illustrative names, however if RBI wants, it can certainly notify it to be included in the above definition.

RBI hasn't notified bitcoin as legal tender in India and therefore it couldn't be termed as real currency for the time being.

Coins in India are governed by the Coinage Act, 2011.

Section 2 (a): "coin" means any coin which is made of any metal or any other material stamped by the Government or any other authority empowered by the Government in this behalf and which is a legal tender including commemorative coin and Government of India one rupee note.

On study of above, bitcoin is certainly not metal or even any other material for that matter. Moreover, it's not legal tender. If it was to become e-money in the near future, still it could not be coin as per the Coinage Act, since e-money is specifically excluded from the above definition. Consequently, bitcoins cannot be considered as coins now or in the days to come.

## 12. THE 2016 DEMONETIZATION

On November 8, 2016, Prime Minister Narendra Modi announced the commencement of a

demonetization policy. The move was aimed at effecting the withdrawal of the Rs 1,000 and Rs 500 currency notes from circulation. Announcing the move, the Prime Minister described the move as part of the government's effort to curb counterfeiting of currency. He also declared that the move would fight against the circulation of black money while significantly reducing the level of inflation in the country's economy. This was only the third time that the Indian government had demonetized the economy. The other two occasions were in 1949 and 1978, with the former happening a year before the country's independence.

### *Impact on Cryptocurrencies*

The move by the government to demonetize approximately 86 percent of the country's paper currency sent shockwaves all across the subcontinent of India. People with large cash holdings required a new means of holding such wealth without incurring significant tax burdens and sundry government scrutiny. It became common practice for some to buy large orders of Bitcoin or other cryptocurrencies and then sell them at a later date. This meant that they were effectively circumventing what would have been considerable taxes if they had tried to circulate their wealth through the banking system.

The demonetization policy also led to widespread criticism of the mainstream financial scene in the country. In the space of 24 hours, 86 percent of the country's paper currency in circulation had been rendered valueless by virtue of a single government proclamation. Realizing that fiat money isn't exactly "real" money since it isn't backed up by anything, Indians began to seek alternative currency models. Many Indians,

especially those in the 40 percent bracket with access to the Internet began to take up Bitcoin and other cryptocurrency investments.

### 13. NOTABLE CHALLENGES

The 2016 demonetization policy may have spurred the adoption of cryptocurrencies among a considerable portion of the population but realities soon began to emerge that have stifled the growth of the market in the country. Despite its vast population, India only contributes 2 percent of the total global cryptocurrency market capitalization.

**Security threats:** Hackers and malicious users can create as much as they want from virtual currency if they break the system and know the method of virtual currency creations. This will lead to the ability to create fake virtual currency or steal virtual currency by just changing the account balances.

**Collapse concerns in cryptocurrency systems:** Unlimited issuing of virtual currency in the variety virtual communities will lead to economic problems since its issuing is not based on the demand and supply. It is possible for some providers such as Second Life to issue unlimited Linden Dollars and increase their virtual items prices in order to gain more real revenues.

**Impact on real monetary systems:** Since some virtual currency systems are connected with real world monetary systems, they may affect the demands and supply facilities of real world money. For example, enabling users to purchase virtual and real goods and services with virtual currency in some platforms may reduce the demands on real money. Users will no longer depend on real money to buy what they want and they will use virtual money instead.

**Gold Farming Risks:** Gold farming term is very popular in China and developing countries. Gold farmers are players who play in social games such as World of Warcraft in order to gain gold, which is virtual currency of the game, and then sell it for real money. The targeted buyers are the players who do not have enough time to play and compete for gaining virtual currency.

**Fluctuation in Virtual Currency Value:** According to Chow and Guo study, it is observed that when the popularity of a virtual community drops, the value of its virtual currency will be devalued. For example, users who own 1000 units of virtual currency can buy from variety of 100 items. In case the provider of that virtual currency drops, users can only buy from 10 items with their 1000 units since dropping will be reflected in fewer goods and services especially in closed virtual communities.

**Money Laundering:** Money laundering is one risk that is very likely to rise with the use of VC especially with platforms that enable users to exchange virtual currency with real money. In practical case occurred in Korea in 2008, the police arrested a group of 14 persons for laundering \$38 million obtained from selling virtual currency.

**Unknown Identity Risks:** Since creating an account in most of virtual currency platforms such as social games and social networks is not authenticated, financial transactions cannot be monitored very well. Gamers and users can create more than one account with unknown identities and use them for illegal transactions. There is no way to recognize the source of creating or cashing out the virtual currencies.

**Black Market for Cryptocurrency:** The financial position of some social games such as

Second Life and World of Warcraft are mature enough to create black market for buying and selling their virtual currency. The increasing popularity of virtual currency in online environment has led to a thriving black market for trading virtual currency with real money. By observing several social games' forums, some fraud cases have been raised and discussed between users.

#### 14. STATUS OF GOVERNMENTS ON CRYPTOCURRENCY AROUND THE WORLD

Exchanging virtual currency with real currency is a hot topic in E-business and E-commerce industries. Trading cryptocurrency for cash is banned and prohibited in some countries where in other countries, it is either allowed or not regulated yet. If 2017 was the year of the Initial Coin Offerings (ICO), it seems as if 2018 is destined to become the year of regulatory reckoning. Things have already begun to heat up as countries around the world grapple with cryptocurrencies and try to determine how they are going to treat them. Some are welcoming, others are cautious. And some countries are downright antagonistic. This section gives a brief overview of some of countries treating cryptocurrency regulations:

**United States (Friendly):** The U.S. has been taking an approach to foster innovation and growth of blockchain and cryptocurrency while protecting investors from high risks and fraud. In December 2017, the SEC took the position that Initial Coin Offerings (ICOs) are subject to U.S. Securities regulations, meaning only accredited investors may participate in ICOs that are not (and almost never are) registered with the SEC

**China (Hostile):** China is notorious for some of the world's largest bitcoin mines. In 2017, China banned cryptocurrency trading on Chinese exchanges and made ICO fundraising illegal, curving market demand, and causing a large overall downtrend in the cryptocurrency markets. Chinese cryptocurrency bans would have, but it could possibly continue to fuel negativity in the market. The People's Republic of China appears to be the most stringent cryptocurrency regulator of the major economies regarding cryptocurrencies.

**South Korea (Neutral):** The cryptocurrency market's all-time highs in January 2018 were quickly silenced, in part from fears that South Korea may ban cryptocurrency trading in a manner similar to China. News sites published articles mistakenly claiming there would be a total trading Ban in Korea, causing havoc in the cryptocurrency markets. Later in January, South Korea proposed new rules to prevent anonymous trading and impose penalties for failing to comply.

**Singapore (Friendly):** Singapore is often considered one of the more hospitable governments toward cryptocurrencies. In October 2017, the Monetary Authority of Singapore (MAS) published a clarifying document on cryptocurrency regulation. The document states that MAS does not directly regulate cryptocurrency, but regulates fraudulent and dangerous financial activities such as money laundering and terrorism.

**Iran (Friendly):** Iran is developing a state-run cryptocurrency. On February 21, 2018, MJ Azari Jahromi, the Iranian Minister of Information and Communications Technology announced discussing cryptocurrency and blockchain at a

meeting with the Iranian central bank's board of directors .

**Britain (Neutral):** On February 22, 2018, the U.K. Treasury announced that it will begin looking into issues surrounding cryptocurrency and blockchain technology. The investigation will look into the role of cryptocurrencies in Britain, including both opportunities and risks for consumers, businesses, and government. The Treasury Committee will look at the potential risks that cryptocurrency could pose, such as price volatility, money laundering, and cybercrimes.

**Germany (Friendly/Neutral):** Joachim Wuermeling, the Director of German's Central Bank (Bundesbank), is pushing for bitcoin and cryptocurrency to be regulated through an international set of rules, rather than solely national rules. He believes cryptocurrencies are difficult to regulate within a specific region or country. At the G20 summit this March, Germany and France are planning to release a joint statement proposing regulations, and analyzing the risks linked to bitcoin and cryptocurrency

**Brazil (Hostile):** In May 2017, Brazil set up a commission to discuss regulation of cryptocurrency. It has since held seven public hearings. In December, Brazil announced it would take the stance to prohibit the issuance of cryptocurrency in national territory, prevent its commercialization, intermediation, and acceptance as a means of payments and settlement of debts. The CVM and Central Bank of Brazil also announced that "The Bitcoin is a financial asset with no ballast that people buy because they believe it will appreciate."

## 15. THE FUTURE OF CRYPTOCURRENCY

The future of cryptocurrency is open for interpretation. In an age of credit cards, debit cards and online bank accounts the prospect of digital currency is not as jarring as it might sound. Transferring money digitally is very convenient, instantaneous and cheap. However, Bitcoin seems to be too complicated and unsafe for mainstream use. There is not much demand for a decentralized currency from the average consumer. For it to work as an established currency, there would inevitably need to be an increase in regulation and consumer protection.

There are also not many applications for the use of Bitcoins in the corporate world. Decentralization increases the risk of bankruptcy and so does the volatility in its price. Bitcoin can be used to bypass capital controls but only to a limited extent. Bitcoins in an investment portfolio increase returns and lower risk but are too risky to act as a core asset - they are useful for diversifying a portfolio. Bitcoin also lacks the liquidity that other fiat currencies have, it is vulnerable to code-based attacks and untraceable theft.

It is thus unlikely that much demand for Bitcoin will come from anyone apart from investors looking to diversify their portfolio, customers with an interest in cryptocurrencies and customers looking to transact anonymously on the black market. The lack of demand is evident in the rapid fall of Bitcoin's price. It is unlikely that many stores will accept Bitcoin and that it will garner any widespread application. There is however plenty of room to expand within the field of cryptocurrency as its technology is very promising. The year 2017 was a bull market for bitcoin and other cryptocurrencies, while in 2018 they were

in the throes of a bear hug. As 2019 is approached, the industry is hoping that once again the tide will turn.

The transfer is instantaneous and money once sent is sent. It's impossible to reverse a transaction the way a bank can.

- 1) It's an extremely volatile market that dips every time a government (China, South Korea, etc) bans cryptocurrency per se or a by-product of cryptocurrency i.e. Initial Coin Offerings (which are basically the IPO version of cryptocurrency).
- 2) Unlike other investment avenues, cryptocurrencies are not regulated by government entities or banks. If you get ripped off in a bitcoin transaction, it is impossible to get the money back, even the police officials are unable to help as it is not recognised as currency.
- 3) One major hurdle in the path of Indian investors, who are interested in investing in cryptocurrency, is the confusion about its legal status. While they haven't been declared illegal, cryptocurrencies are not recognised by the Reserve Bank of India (RBI) or any other authority in India, as a 'currency'.
- 4) It is much more difficult to track illegal activities in the cryptocurrency space, such as increased chances of money laundering and financing of terrorism. This risk also lowers the chances of cryptocurrencies becoming mainstream in India, leaving the future of the market mired in uncertainty.
- 5) The GST tax regime is struggling in its own implementation and addressing the area of cryptocurrency dealing or mining operations

looks farfetched but the authorities do not take a minute to impose duties and penalties even if no tax regime to deal with such subjects are there.

## 16. CONCLUSION

Money is one of the most valuable and sought after commodities in the world, affecting people in almost every facet of their life. One of the most controversial new innovations in this field are cryptocurrencies. It is a currency that is not protected by governmental regulations or law, making it impervious to government interference. The currency is fully decentralized, and unlike fiat money the government cannot affect its value. The first cryptocurrency created, and the most widely used, is Bitcoin.

The demand for Bitcoin comes mainly from its decentralization and anonymity, low transaction costs, use for illegal transactions and as a financial instrument to profit from its price volatility or to diversify a portfolio. Other possible uses for Bitcoin include measures to avoid currency controls or other sources of governmental interference and for tax evasion. There are however many disadvantages associated with the currency.

As it stands, Bitcoin is unlikely to catch on as an official currency for the general public as it has too many faults and has too many risks whereas its strengths are necessarily not something that the general public desires in an established currency. For an innovation in currency to be successful it needs to improve on what the debit card and credit card has to offer. It has to be more convenient, safer and accepted by merchants worldwide. An example of a possibly more successful payment method is Apple pay.

The technologies that come with Bitcoin have many mainstream applications and it is very possible that some kind of implementation of cryptocurrency's technology and mobile-based payment system with cryptocurrency integration could be the future of mainstream payment systems. It will be very exciting to see the future technological innovations in currency and payment systems and although Bitcoin will most likely not be a largely popular established currency in the future, its technology will surely have widespread future implications.

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