



**Peer Reviewed Referred
and UGC Listed Journal**



**AN INTERNATIONAL MULTIDISCIPLINARY
HALF YEARLY RESEARCH JOURNAL**

GENIUS

Volume - VI, Issue - II, FEBRUARY - JULY - 2018

ISSN - 2279 - 0489

Impact Factor - 4.954 (www.sjifactor.com)

PART - II

AJANTA PRAKASHAN

ISSN 2279 - 0489
AN INTERNATIONAL MULTIDISCIPLINARY
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Volume - VI

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February - July - 2018

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Journal No. 47100



ज्ञान-विज्ञान विमुक्तये

IMPACT FACTOR / INDEXING

2017 - 4.954

www.sjifactor.com

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Ajanta Prakashan
Aurangabad. (M.S.)



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Bitcoin Transactions: A Digital Decentralised Currency

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Abstract

In the knowledge society, when there is a rapidly evolving information technology, the virtual markets, namely the online transactions, have created the premises emergence and development of new technologies of using of finances, namely virtual coin (Bitcoin). Bitcoin can be use to buy different product and services over the internet. Bitcoins are limit in numbers and that is the reason why the value of bitcoin reaches to its highest level i.e. \$17900 per bitcoin in December 2017. Bitcoin is used as alternative to the traditional currencies to complete transactions anonymously over the Internet. Investors and speculators buy the bitcoins as investment. Bitcoin transactions are not under control of any country or government. There are no any regulations to regulate bitcoin transactions. Many countries including India has denied to accept it as a currency. Recently, bitcoins are used in some illegal and criminal activities as this transactions are not traceable. Coin is completely depends on the demand for and supply of bitcoins. No any regulatory system determines the value of bitcoin. The value of bitcoin fluctuated strongly and it attracting the more user and gaining buyers confidence but it also led to cyber attack and there is no any government system to protect the buyers from fraud.

Keywords: Bitcoin, Virtual Currency, Cryptocurrency, Software, Wallet, blockchain

Methodology

The study is based on secondary data / information collected from different books, journals, newspapers and websites.

Objectives Of The Study

The study aims at,

1. To study the pros and cons of bitcoin

2. To study the working of bitcoin
3. To study the future challenges in front of bitcoin

Introduction

Bitcoin is a digital currency that can be used to make payment anonymously over the internet. It is the first decentralized digital currency. There is no control of any authority or government over this currency. For the first time in history, bitcoin can exchange value without any intermediaries. "Satoshi Nakamoto" is presumed to be the person who designed the original bitcoin protocol in 2008 and launched the network in 2009. Satoshi Nakamoto is responsible for creating bitcoin software and was active in making modifications and providing technical information on the bitcoin forum. Bitcoin is gaining popularity because of many reasons like anonymous payment, faster, secure, less expensive, acceptance by corporate etc. Bitcoin is a form of a non-centralized digital currency, *i.e.*, purchased data mining process via P2P networks. Since there is no central bank to regulate the value of individual coins and their price depends merely on the supply and demand, large fluctuations of the bitcoin value can be observed. The value of bitcoin is not determined by any central bank or any regulatory system but determined on the basis of demand for and supply of bitcoins. Bitcoin payments can be made between anybody at any part of the world having requisite software on their computer, smartphone or tablet. This software is called a *wallet*. A Bitcoin is not a digital note or coin and should not be compared to regular notes and coins. Rather, Bitcoin should be viewed as funds in an account.

How Bitcoin Works

In a bitcoin transaction, the buyer and seller use encryption keys to complete the transaction. Encryption keys are public key and private key. Public keys are known to everyone. Private key is known to that particular user only. Private key is used by the user to decrypt messages sent by other users. Assume that 'A' wants to pay 1 bitcoin to 'B'. 'A' and 'B' both have a bitcoin wallet on their computer or smartphone or a tablet. Every wallet is associated with a public encryption key, which serves as an address or an account number. 'A' and 'B' both communicate with each other through a bitcoin wallet. Transactions start when 'B' sends his public key (account number) to 'A'. After getting the account number, 'A' issues a payment order for 1 Bitcoin to 'B' and signs it with his own (A's) private key. The proposed payment order is issued to the network for verification and to confirm validity. After every ten

minutes a certain type of participant in the network of bitcoin gathers the all transaction of last ten minutes period. This occurs automatically, and round of gathering all ten minutes transactions is called as “Block” and the special participant in the network called as “Miners”. They have the task of verifying the transaction by adding the new block (the transactions) to what is known as the blockchain, which is the official list or register of verified Bitcoin transactions. All confirmed transactions are included in the block chain. After verification, the proposed transactions are now added to the blockchain, which becomes one block longer. Now that the transaction between A and B has been accepted, the B’s wallet will be credited with 1 bitcoin whereas A’s wallet will be debited by 1 bitcoin.

Advantages Of Using Bitcoin

- **Anonymous and Private**

Bitcoin transactions cannot be tracked and cannot be identified. Transactions are completely anonymous and private. Only the bitcoin address need to know complete the transaction. But to whom addresses belongs cannot be identified. In traditional banking transactions can be tracked and identified.

- **Payment Freedom**

Bitcoin provide utmost freedom for making payment worldwide. Bitcoins can be sent to any person in any part of the country. There is no any geographical boundary to sent bitcoins. It works for 24 x 7. One can sent amount of their wish without any payment limit.

- **Minimal Fees**

Making payment through bitcoin has very minimal fees or sometimes transaction fees at all. Fees is depends on urgency and priority of person. If person wish to process their transaction quickly, he has to pay some fees but amount of fees is very less as compare to other digital wallets.

- **Fewer risks for merchants**

Bitcoin transactions are secure, irreversible, and does not contain any customers’ sensitive or personal information. This protects merchants from losses caused by fraud or fraudulent charge backs.

- **Faster Transaction**

Bitcoin transactions are faster as compare to other various banking channels. "Zero confirmations" bitcoin transactions are processed instantly. On the other hand confirmed transactions take some time i.e. 10 minutes.

- **No control of Central government**

As bitcoin is decentralized and not under the control of any government agency, government cannot take back your bitcoin. The government can ban it but even though it will carry value in market/region/places where it is legal.

- **Secure payment information**

In bitcoin transactions, the buyer does not require to submit any secret information like card number, CVC, name etc. Instead they need to use two keys i.e. public key and private key. When person sent bitcoins, you 'sign' the transactions by combining public key and private key together.

- **Non-Inflationary**

The bitcoins in circulation are limited in number i.e. 21 billion only. It means new bitcoins will not come into circulation and therefore it will not contribute to the inflation in the economy.

Disadvantages of Bitcoins

- **Lower Acceptance Rate**

Bitcoin acceptance rate is very less as compare to traditional currency. Many people are not aware about the bitcoin transactions. Many countries have not accepted bitcoin as mode of payment. But in future, the acceptance rate is likely to be increase due to acceptance by many big organizations like Microsoft.

- **Highly Fluctuating**

The bitcoin value is fluctuating highly over a period. Speculators trying to take advantage of the it but genuine investors think of it as too risky and therefore genuine investors does not invest in bitcoin.

- **Software Security**

As bitcoin is decentralized digital currency having no control of any agency, its software is highly targeted by cyber hackers. Its software is still in beta version and many features are under development.

- **Possible Government Interference**

Government cannot take back yours bitcoin but government can ban it in the country. If it get banned in country, it will force all bitcoin wallets and companies to shut down.

- **Lack of security**

Bitcoins are stored in software called wallet. If person lose their wallet in which bitcoins stored, he will lost all bitcoin stored in that wallet.

- **No Reverse Transaction**

There is possibility of mistake while making online transactions. In case of bitcoin transaction, once person conduct the transaction it cannot be reversed or cancelled.

- **Use in criminal Activities**

Bitcoins are highly used by peoples involved in criminal and illegal activities. Cyber hackers also demand money in form of bitcoins.

Bitcoin Price History

Date	USD : BTC	Notes
Jan 2009 – Mar 2010	basically nothing	No exchanges or market, users were mainly cryptography fans who were sending bitcoins for hobby purposes representing low or no value. In March 2010, user "SmokeTooMuch" auctioned 10,000 BTC for \$50 (cumulatively), but no buyer was found.
Mar 2010	\$0.003	On 17 Mar 2010, the now-defunct BitcoinMarket.com exchange is the first one that starts operating.
May 2010	less than \$0.01	On 22 May 2010, Laszlo Hanyecz made the first real-world transaction by buying two pizzas in Jacksonville, Florida for 10,000 BTC.
July 2010	\$0.08▲	In five days, the price grew 900%, rising from \$0.008 to \$0.08 for 1 bitcoin.
Feb 2011 – April 2011	\$1.00▲	Bitcoin takes parity with US dollar.
8 July 2011	\$31.00▲	top of first "bubble", followed by the first price drop
Dec 2011	\$2.00▼	minimum after few months

Dec 2012	\$13.00	slowly rising for a year
11 April 2013	\$266 ▲	top of a price rally, during which the value was growing by 5-10% daily.
Dec 2013	\$600-\$1,000 ▼	Price crashed to \$600, rebounded to \$1,000, crashed again to the \$500 range. Stabilized to the ~ \$650-\$800 range.
Jan 2014	\$750-\$1,000 ▲	Price spiked to \$1000 briefly, then settled in the \$800-\$900 range for the rest of the month.
May 2014	\$440-\$630 ▲	The downtrend first slow down and then reverse, increasing over 30% in the last days of May.
Early Nov 2015	\$395-\$504 ▲	Large spike in value from \$225-\$250 at the start of October to the 2015 record high of \$504.
May-June 2016	\$450-\$750 ▲	Large spike in value starting from \$450 and reaching a maximum of \$750.
October-November 2016	\$600-\$780 ▲	As the Chinese Renminbi depreciated against the US Dollar, bitcoin rose to the upper \$700s.
5-12 January 2017	\$750-\$920 ▼	Price fell 30% in a week, reaching a multi-month low of \$750.
August 2017	\$4,400 ▲	On 5 August 2017, the price of one BTC passed US\$3,000 for the first time. On 12 August 2017, the price of one BTC passed US\$4,000 for the first time. Two days later, the price of one BTC passed US\$4,400 for the first time.
17-20 November 2017	\$7,600-8,100 ▲	Briefly topped at USD \$8004.59/BTC at 01:14:11 UTC before retreating from highs. At 05:35 UTC on 20 November 2017 it stood at USD\$7,988.23/BTC according to CoinDesk. This surge in bitcoin may be related to developments in the 2017 Zimbabwean coup d'état. The market reaction in one bitcoin exchange is alarming as 1 BTC topped nearly US\$13,500, just shy of 2 times the value of the International market.
15 December 2017	17,900 ▲	Bitcoin price reached \$17,900
22 December 2017	13,800 ▼	Bitcoin price loses one third of its value in 24 hours, dropping below \$14,000. ^[159]

Source : https://en.wikipedia.org/wiki/History_of_bitcoin

Countries Saying Yes To Bitcoin

- **The United States**

The United States has taken a generally positive approach towards bitcoin. Businesses like Dish Network, Dell, and Overstock.com welcome payment in bitcoin. Bitcoin is categorized as property for taxation purposes by the Internal Revenue Service (IRS).

- **Canada**

Canada also has positive approach towards bitcoin. Bitcoin is viewed as a commodity by the Canada Revenue Agency (CRA). This means that bitcoin transactions are viewed as barter transactions, and the income generated is considered as business income.

- **Australia**

Australia allows sell or buy bitcoin. The Australian Taxation Office (ATO) considers bitcoin transactions as barter transactions. Tax on bitcoin is depends upon the use and user.

- **The European Union**

As there is no central guidance, individual EU countries have developed their own bitcoin stances. A few nations of EU are allowing bitcoin while others are either undecided or issuing warnings.

Countries That Say No To Bitcoin

- **India**

Reserve Bank of India (RBI), the country's central bank, has not issued any licenses to operate with cryptocurrencies like bitcoin in the country. However, the Indian Supreme Court pushed the government to respond to calls to regulate bitcoin

- **Iceland**

Iceland seeks to protect the outflow of Icelandic currency from the country. Therefore, foreign exchange trading with bitcoin is banned in Iceland as the cryptocurrency is not compatible with the country's Foreign Exchange Act.

- **Vietnam**

From the beginning, Vietnam's government and its state bank have maintained that bitcoin is a not a legitimate payment method. After a few initial rounds of public rejoinders against the use of bitcoin, Vietnam made it illegal for both financial institutions and citizens to deal in bitcoin. It links the cryptocurrency to criminal activities such as money laundering.

- **Bolivia**

Bolivia has banned the use of cryptocurrencies and bitcoin.

- **Kyrgyzstan**

Bitcoin transactions are considered illegal in Kyrgyzstan.

- **Ecuador**

Bitcoin and other cryptocurrencies were banned in Ecuador. However, the nation has plans to create its own cryptocurrency in the future.

- **Russia**

The legality of bitcoin in Russia is disputed. Russia's Ministry of Finance is hoping to pass a law to ban bitcoin sometime this year.

- **China**

Financial institutions and all banks are prohibited from dealing in bitcoin. However, general people are free to deal in bitcoin between themselves.

Future Challenges in The Growth Of Bitcoin

- The main factor that might restrict the Bitcoin to grow is no supervision and absence of consumer protection. Lack of protection makes the investment in bitcoin more risky as compare to making investment in traditional instruments.
- Now a days, people prefer to faster mode of payment, but bitcoin transaction takes 10 minute to get confirm the transaction it means bitcoin payments not occurring in real time. It is obstacle in using bitcoin by the masses. The use of bitcoin may be limited to people wish to make investment, money laundering, etc. Using bitcoin for online shopping at large is likely to be difficult due to its time consuming confirmation process. Bitcoin
- Bitcoin's transactions are verified by the miners. Miners get incentives for the same in form of new bitcoin. Everyone knows that, the number of bitcoins are limited to 21 millions. What if all bitcoins are mined? Is miners will remain active even after mining of all bitcoins? If not then entire system of bitcoin transaction will collapse.
- Bitcoin's are virtual digital currencies limited in number at present. As it is digital, creation of new bitcoins is possible. What if 21 millions bitcons suddenly turns into 42 millions bitcoins? If it happens, it will adversely affect the value of bitcoin and prices of bitcoin may go down suddenly.

- Currently bitcoin transactions are preferred to maintain privacy and anonymity. Criminals also use bitcoin to complete their illegal activities. Therefore, government may ban or may setup any system to regulate bitcoin transactions. If so, people will again move toward the traditional well known payment system.
- The success of bitcoin gives rise to creation of other cryptocurrencies like bitcoin in near future. New cryptocurrencies may throw bitcoin out of market.

Conclusions

Virtual currency is need of the day. Bitcoin is first decentralized virtual currency in the history. Bitcoin is cryptocurrency not under the control of any regulatory system or government. The value of bitcoin is not determine by any authority but depends upon the demand and supply of the bitcoins. The The bitcoin are popular recently due to its important feature i.e. anonymity. People use it because these transactions are non-traceable. Many countries have positive approach towards bitcoin but some countries have issued warning to their citizens to take care while investing in bitcoin. The value of bitcoin reaches to \$17900 per bitcoin in December 2017 but value reduced again suddenly. Effective steps need to be taken to protect the interest of user of bitcoin.

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