



Bitcoin: A Digital Currency

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Abstract: *There was a time when internet and online banking brought revolution in the economy which gave a chance to the customer to use banking functions with just a click of mouse sitting anywhere. Then came the visa, debit and the credit card which further enhanced the level of banking sector so forth. And now to improve more and to remove the discrepancies and the left-out demand by all these technologies, a new concept is there to bring a change in everyone's life, known as BITCOIN. It is a new concept in India, but it is frequently being used in the European and some American countries for the past few months. This paper elaborates on the meaning, objectives, history, changes in price of bitcoin in the recent years. It is an attempt to review Bitcoin as a medium of exchange from the economic perspective. It also elaborates the pros & cons of using Bitcoins as a digital currency.*

Keywords: *Bitcoin, Medium of exchange, Economic perspective.*

I. INTRODUCTION

With the change in the current scenario, it is seen that the customer has become more demanding and the level of expectation has also increased many fold, which further has led to the introduction of latest technology as a routine in the market. Visa, debit and credit card which further enhanced the level of banking sector so forth. And now to improve more and to remove the discrepancies and the left-out demand by all these technologies, a new concept is there to bring a change in everyone's life, known as Bitcoin. It is though a new concept in India, but it is frequently being used in the European and some American countries for the past few months.

Talking about bitcoin, it is a peer-to-peer payment system and digital currency which was introduced as open source software in 2009. Bitcoin refers to the combination of technology with the network whereas lowercase "bitcoin" refers to the currency itself. Basically, bitcoins are created when computer network participants or the users who provide their computing power, verify and record payments into a public ledger in exchange for transaction fees, this process is known as "Mining". Users send and receive bitcoins using wallet software on a personal computer, mobile device, or a web application.

II. OBJECTIVES

1. To know the concept of bitcoin.
2. To study the working of bitcoin.
3. To examine Bitcoin from economic perspective as a Medium of exchange.
4. To examine the prices of Bitcoin in recent year.

III. WHAT IS BITCOIN?

Bitcoin is an electronic peer-to-peer (i.e. with no third party being involved) payment network and a digital currency. It started in 2009. Its main feature is decentralisation –not being backed by or tied to any government or central bank. Bitcoins can be used to buy and sell items and services. They can also be exchanged for fiat money. The price of bitcoins is set purely by market demand and supply.

IV. HISTORY OF BITCOIN

Attempts to create a virtual currency have been linked to the creation of online communities. A way of overcoming double-spending problem was first mentioned in the 2008 paper by Satoshi Nakamoto who published it on 31st October 2008 in a research paper called "Bitcoin: A peer to peer Electronic Cash System". It was implemented as an Open source and released on 3rd January 2009.

The Bitcoin system relies on complicated mathematical-based cryptography (encoding) to secure its data and money creation, and prevent communication among members from being accessible to third parties. All bitcoins and users have their own unique identity and each transaction is recorded in a public ledger (which acts as a digital financial record book with a record of all



Bitcoin transactions in chronological order). This ledger, called the "blockchain" in Bitcoin terminology, is visible to all computers on the network, but does not disclose personal information about the parties involved in transactions.

V. AN OVERVIEW

- ✓ Bitcoin started circulating in the world in the year of 2009.
- ✓ It was used by 13 lacs people in 2013.
- ✓ Around 1 lacs traders used this digital currency in their business in 2015.
- ✓ Around 58 lacs people use it now.
- ✓ It is being used for selling and buying in many countries and markets.
- ✓ Bitcoin is the most reliable crypto currency for its users.

LIST OF OTHER CRYPTOCURRENCIES WITH YEARS

YEAS	VARIOUS CRYPTOCURRENCIES
2009	Bitcoin
2011	Namecoin, Litecoin
2013	Dogecoin, Ripple, Primecoin, Omnilayer
2014	Dashcoin, NEM, Potcoin, Titcoin, Coiney
2015	Ethereum, Ethereum Classic
2017	Bitcoin in cash

It can be seen from the above table that there are many crypto currencies in the world, but Bitcoin is the most reliable currency and popular in their users.

PRICES OF BITCOIN IN THE YEAR OF 2017

MONTH	PRICE IN DOLLAR
January 2017	800-1,150
March 2017	1,290 plus
April 2017	1210-1,250
May 2017	2,000
May-June 2017	2,000-3,200
August 2017	4,400
September 2017	5,000
October 2017	6,180
12 November 2017	5,519-6,595
25 November 2017	9000
28 November 2017	10,000
29 November 2017	11,000
5 December 2017	12,000
7 December 2017	16,000
8 December 2017	17,000

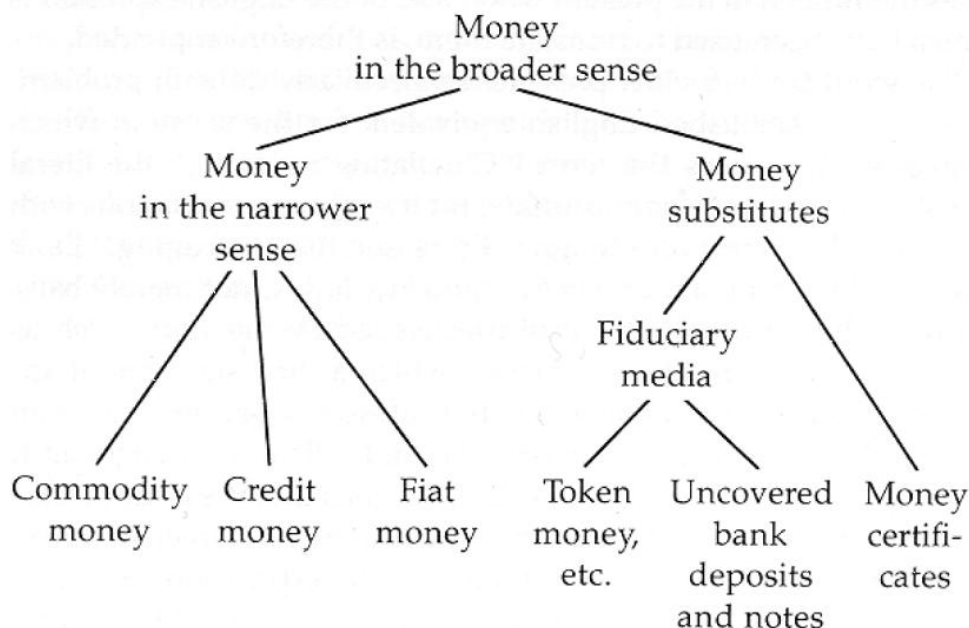
It can be seen in table that price of bitcoin is 800-1150 in January 2017 and has increased continuously to 17000, in 8 December 2017. The increasing trend in prices of bitcoin shows that it is the most reliable crypto currency for its users in the world.

VI. ECONOMICS OF BITCOIN

Historically, money has been defined through its functionality, the three main functions being Krugman (1984): "Money, the classical economists argued, serves three functions: it is a medium of exchange, a unit of account and a store of value".

The Austrain School however uses more precise definition: Money is the most universal medium of exchange, the most liquid good. According to Austrain School Bitcoin is not universally accepted medium of exchange but it is a secondary medium of exchange.

Figure 3.2: Classification of money according to the the Austrian School. Source: Mises (1912)



VII. ECONOMIC COSTS OF RUNNING THE BITCOIN NETWORK

The mining cycle is difficult to interpret since it depends on the market price of Bitcoin. Like large gold miners, when market price of the underlying asset drops, miners tend to hold their assets to restrict supply, causing an eventual increase in price. Miners who can't afford to do this typically shutoff their equipment, and exit the mining game.

When market price increases, this draws more miners into the game, increasing network hash rate and difficulty, which requires further capital expenditure from incumbent miners, which also leads to higher operating costs. So long as market price exceeds mining cost, miners will enter the market, and so long as mining costs exceed the market price, miners will either leave the game, or withhold supply— just as physical commodity miners do.

VIII. SOCIAL COSTS OF BITCOIN

Transactional Fraud

Because Bitcoin is resistant to transactional fraud and can be traced through its public ledger, there are no adverse social externalities or costs arising directly or indirectly from Bitcoin mining. Even though Bitcoin addresses are pseudonymous, a good team of detectives will be able to catch a criminal who has not been professionally meticulous in concealing their steps, which is very difficult to do on public ledger.

Institutional Fraud / Theft

As is the case with any business or industry where money is involved, especially unregulated industries, there is a large scope for scam institutions and fraudsters. There is also potential for institutional incompetence which makes the job of thieves much easier.

It should be noted that the only thing involved in Bitcoin mining is electricity use, and as the world moves towards clean and renewable energy, Bitcoin will have even less of an impact on the environment.



Comparison of Socioeconomic Costs

	Gold	Fiat Currency	Bitcoin
Worker Deaths	Over 50,000 historically recorded & Over 100 per year	0	0
Corruption	USD\$600m	USD\$1.60 trillion	Negligible
Money Laundering		USD\$2.65 trillion	
Black Markets		USD\$1.80 trillion	
Institutional Fraud / Theft	USD\$21 billion across two single events & several billion historically recorded	USD\$3800 billion/year & several trillion historically recorded	< USD\$0.5 billion ever recorded
Transactional Fraud	N/A	\$190 billion	\$0
Inflation	Deflationary (Long-term)	3.9% per year (<i>time to loss of 50% loss of value: 17.5 years</i>)	Deflationary (Long-term)

IX. ADVANTAGES & DISADVANTAGES OF BITCOIN

Advantages:

Freedom in Payment

- ✓ With Bitcoin it is very possible to be able to send and get money anywhere in the world at any given time.
- ✓ You don't have to worry about crossing borders, rescheduling for bank holidays, or any other limitations one might think will occur when transferring money.

Control and Security

- ✓ Allowing users to be in control of their transactions help keep Bitcoin safe for the network. Payments in Bitcoin can be made and finalized without one's personal information being tied to the transactions.
- ✓ Since personal information is kept hidden from prying eyes, Bitcoin protects against identity theft.
- ✓ Bitcoin can be backed up and encrypted to ensure the safety of your money

Information is Transparent

- ✓ With the block chain, all finalized transactions are available for everyone to see, however personal information is hidden.
- ✓ Your public address is what is visible; however, your personal information is not tied to this.
- ✓ Anyone at any time can verify transactions in the Bitcoin block chain.
- ✓ Bitcoin protocol cannot be manipulated by any person, organization, or government. This is due to Bitcoin being cryptographically secure.

Very Low Fees

- ✓ Currently there are either no fees, or very low fees within Bitcoin payments.
- ✓ These services generally have lower fees than credit cards and PayPal.

Fewer Risks for Merchants

- ✓ Since Bitcoin transactions cannot be reversed, do not carry with them personal information, and are secure, merchants are protected from potential losses that might occur from fraud.

Disadvantage:

Lack of Awareness & Understanding

- ✓ Fact is many people are still unaware of digital currencies and Bitcoin.
- ✓ People need to be educated about Bitcoin to be able to apply it to their lives.
- ✓ Networking is a must to spread the word on Bitcoin.

Risk and Volatility



- ✓ Bitcoin has volatility mainly since there is a limited amount of coins and the demand for them increases by each passing day.
- ✓ As more businesses, medias, and trading centres begin to accept Bitcoin, its' price will eventually settle down.
- ✓ Currently, Bitcoin's price bounces everyday mainly due to current events that are related to digital currencies.

Still Developing

- ✓ Bitcoin is still at its infancy stage with incomplete features that are in development.
- ✓ To make the digital currency more secure and accessible, new features, tools, and services are currently being developed.

X. SECURITY MEASURES

The following security measures were proposed in an article published online in the Forbes magazine:

- Evaluate the type of wallet you want to use. Wallets can be operated either on a computer, mobile device or offline. Maintaining your account offline is the most preferred and only go online when you need to transact.
- Use file and folder encryption to protect your wallet. The bitcoin wallet can be encrypted to provide an extra layer of protection.
- Update your bitcoin wallet software just like any other software. wallet and get the latest bug fixes and security updates
- Use a secure password, or two factor authentications. Use a long password which is not easy to guess. A combination of letters and numbers is encouraged.
- Keep your Bitcoins backed up off system.

XI. BITCOIN AND RESERVE BANK OF INDIA (RBI):

RBI has not legalized bitcoins and declared them unauthorized currency as of now. RBI is examining the risk associated with the usage holding and trading of this currency under the extent legal & regulatory framework of India. In January 2014 a man named Venugopal Badaravada made a representation to RBI urging them to clarify their policy regarding

XII. FINDINGS

It is being used for selling and buying in many countries and markets. Bitcoin is the most reliable crypto currency for its users. The increasing trend in prices of bitcoin shows that it is the most reliable crypto currency for its users in the world. Fact is many people are still unaware of digital currencies and Bitcoin. People need to be educated about Bitcoin to be able to apply it to their lives. Networking is a must to spread the word on Bitcoin.

XIII. SUGGESTIONS

To make the digital currency more secure and accessible, new features, tools, and services should be developed. People should have knowledge of all crypto currencies and other currencies and then use this currency as a medium of exchange.

XIV. CONCLUSION

The Bitcoin is the first known successful implementation of concept known as crypto currency, but it is still in immature state and the developers are continuously putting their efforts to reduce the vulnerability of the Bitcoin. The main threats for Bitcoin are its vulnerability in the mining process and transactions and lack of security during the storage of the coins on the online pools. The recent research efforts are going on to reduce the threats that come forward during the mining process.

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