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## RESEARCH ARTICLE

### COMPARATIVE STUDY ON CRYPTOCURRENCY AND FIAT CURRENCY

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#### ABSTRACT

Cryptocurrency is the breakthrough for this era, the new way of making electronic transaction in a fast and a secure way using the block chain technology, the technology that is adopted in most of the financial institutions because of its surety. Cryptocurrencies can be traded with fiat currency in the exchange market, these currencies follow a decentralized method of monetary management that makes no human interface with the currency to manipulate or to hold. This study mainly focuses on educating the investors and the coming generation about the advantages of cryptocurrency over fiat currency and it answers the questions on how it will be beneficial to our economy if it is adopted.

## INTRODUCTION

Cryptocurrency was first introduced to the mass in 2009, it gets the name 'cryptocurrency' as it works on the principle of strong cryptography (it refers to storing data in the form of cipher text that can be read only by those for whom it is intended) to ensure security. Cryptocurrency uses block-chain technology to trade the digital currency for other assets such as fiat money. Bitcoin was the first ever cryptocurrency that was developed by Satoshi Nakamoto in 2009 which uses SHA256 (cryptographic algorithm) after the rise of bitcoin several other cryptocurrencies with different algorithms were created by blockchain experts. Cryptocurrency is not backed with any physical asset, it is completely decentralized which means nobody can manipulate or counterfeit. The value of the cryptocurrency is pegged by the exchange markets. In addition to this cryptocurrencies values rise and fall just like giffen goods. In 2017, bitcoin was the most googled word around the globe and also we can call it an outstanding year for cryptocurrencies which grew at an exponential rate. The estimated total market capitalization grew from \$17.4 billion in January to reach over \$512 billion in early December. One of the estimate shows that there is an annual growth rate of 35.2% during the forecast period of 2016-2022. Fiat money or fiat currency is a medium of exchange which ruled out the

barter system that was in practice. This currency has an intrinsic value which is regulated by the government and maintains the value. Before 1000AD commodity exchange was in practice (exchange of gold and silver coins) later this gave rise to representative money also known as fiat money. The value of fiat money changes from country to country and this change in values depends on the economy of that particular country. Each country has its own fiat currency, for example dollars in the U.S.A, Pounds in UK, Euros in Europe, Rupee in India etc. The government is the only body which involves in the printing and distribution of fiat money to all the local banks of the country. As it is not a fixed resource, they have the authority to control economic variables such as credit supply, liquidity, interest rates and money velocity. Cryptocurrency created a positive notion among people when they understood that it follows a decentralized system of management. This prevents hyperinflation (monetary inflation occurring at a high rate) countries like Argentina, Zimbabwe, Venezuela, South Sudan faced hyperinflation on their economy which created major depression. For countries like these cryptocurrency was a boon and they started accepting them as it stabilized their economy. Cryptocurrency provides the gateway for anyone in the world to invest in the world's most exciting technologies, this particular gateway drew the attention of all the major investors around the world.

Many countries like Japan, U.S, South Africa, Argentina, Brazil, Chile etc have made cryptocurrency as a legal tender and many start-ups also utilize the opportunity of ICO( initial coin offerings) as investments to their firm. There is a slight possibility of cryptocurrency taking over Fiat currency.

**Review of literature:** According to ‘Economic analysis of cryptocurrencies backed by money laundering’ paper published by (Christein Brenig, Rafael Accorsi) whether cryptocurrency is a driver for money laundering. It also covers money laundering processes and anti money laundering controls are introduced. This study was conducted in the year 2016. Understanding platform based digital currencies report dated (2017 august, Ben Fung and Hana halaburda) talks about the various emerged digital currencies and also discusses the policy issues raised during the wide usage of cryptocurrencies.

‘The rise of money’ by (Kevin hasker and Ahmet Tahmilci, 2009) focuses on how people started exchanging worthless paper money for valuable goods. ‘Currency substitution’ paper by (Alberto Giovannini and Jerome.A) from Chazen institute graduate of Business school gives us explanation on theoretical and empirical literature on currency substitution and also effects on currency substitutability on exchange rates, international adjustment and inflation of tax is discussed. The fall of the golden and silver standard and the foundation of a bimetallic dollar which is convertible either into gold or silver came rise is covered in a discussion paper dated 2005 ‘The rise and fall of golden standard in the United states’ by (George Selgin). Common Currency a working paper by (Alessandra Casella and Jonathan Feinstein) presents the simple equilibrium model of two currencies printing the same currency autonomously and also explains how taxes influences each country which again varies the inflation rates.

**Need for the study:** Technology is being implemented in every field lately, cryptocurrency is the upcoming and driving use of technology that is partially adapted and accepted in the monetary system. This study helps one to understand how cryptocurrency works and its benefits over current fiat currency system which is the medium of exchange worldwide, in addition to this it helps one understand the benefits of having a decentralized system of monetary management.

**Statement of the problem:** The usage of cryptocurrency as the medium of monetary exchange will be evident among the individuals in the coming years as it is observed the number of users switching to electronic means of exchange results in a safe, faster and secure transaction. Currently, countries like China, Russia, India and most of the developing countries have banned the usage of cryptocurrency because of its untraceable character, making it difficult for the government to track the money and also leading to problems like drug trafficking, money laundering and other illegal activities which overall affects a country’s economy. Though, recent developments by the Russians have made it possible to track a handful of cryptocurrency. This procedure can be followed, tested and can be implemented by all the countries which, in turn helps to curb hyperinflation caused by the traditional economic practices.

### Objectives of the study

The following are the objectives of this study

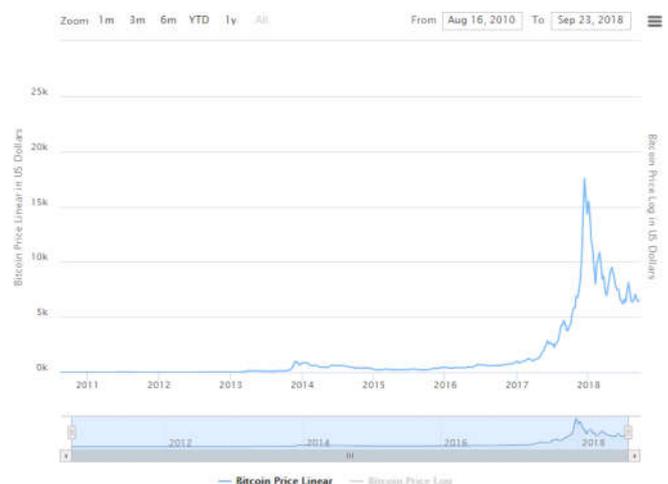
- To analyze the prices of cryptocurrency chronologically

- To analyze the assurance of a cryptocurrency transaction
- To provide suggestions on a decentralized system of monetary management and inturn how it helps the economy.
- To report the drawbacks of fiat currency and how it influences the society.

## MATERIALS AND METHODS

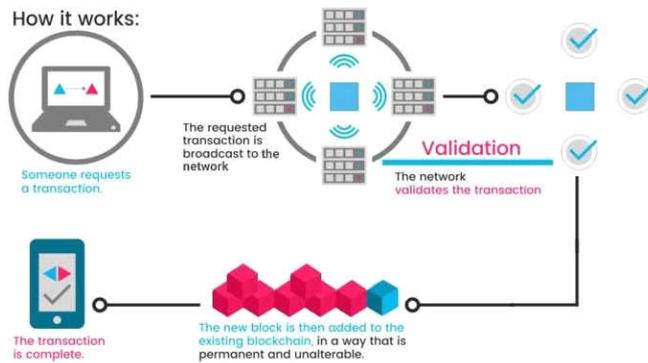
This study is based on findings of secondary data from various e-sources to make the society understand the benefits of cryptocurrency and how it helps the economy. The study also educates about the cryptographic transaction and the perks of a decentralized system of monetary management. The data collected is interpreted with a graph and analyzed to meet the objectives of the study.

**Analysis and interpretation:** Bitcoin price history chart source: buybitcoinworldwide.com Bitcoin price varies with supply and demand just like giffen goods, this was inspired and developed on the concept of rarity of gold.



The total maximum supply of bitcoin is 21 million coins, value of this is measured with fiat currency like american dollar, chinese yuan and others. Initially when it was launched it was as low as 0.07\$, through the years people started getting to know more about it and its functionalities which gave them the confidence to make transactions. There was a rise in the price of bitcoin in 2014 which can see observed in the graph and costed 989\$ which drew most of the investors attention, later was misunderstood due to the allegations made by the FBI against bitcoin amplifying the illegal activities around the world. This allegation created a tentative thought in people’s head whether this was created just to cater illegal activities. 2017 is called the year of bitcoin, the word was hyped up so much around the world, just like giffen demand and supply the price of a single bitcoin rose to be 17549\$, highest it has traded till date.

**The work-flow of a cryptocurrency transaction:** Source: Blockgeeks.com The above chart is a workflow of cryptocurrency. The first step starts from a user requesting for a transaction to be sent to another user. This information is sent to the broadcast network, where the miner validates the transaction and thus creating a new block in the blockchain of a public ledger and thus the transaction gets complete and the other user receives the cryptocurrency in his wallet.



Every wallet will have a unique address which is used to send or receive money from other users. This method also prevents double spending where the transaction becomes unconfirmed if the crypto is used to double spend. This blockchain technology hopes to address multiple challenges associated with digital transactions such as double spending, data security, cross border transactions, chargebacks, frauds, and currency reproductions. Employing blockchain shrinks the costs associated with online transactions, all while concurrently increasing legitimacy and security.

**Decentralized system of monetary management:** The transactions of a decentralized system of monetary management is active and functional since it was launched and \$7 bln worth of Bitcoin was traded on a single day. Regardless of holidays and weekends, users of Bitcoin and other cryptocurrencies like Ether can freely transact on a peer- to-peer basis, through the utilization of wallets. The noncustodial nature of cryptocurrency wallets enable users to remain in full control over their funds, by only allowing users to gain access to their private keys and no other centralized entity or platform. It gives the financial freedom for users operating a business in other countries where the government controls the banks and financial institution. In addition to this, it also helps to stop hyperinflation in a country because the coins are not produced once it reaches its maximum market supply. This system of currencies are immune to inflation or deflation. The only requirement for using decentralized currencies is the ability to obtain and use a wallet. This it attractive to the under banked/unbanked populations. they are not subject to geographically- based exchange rates, meaning that goods and services bought with decentralized currency will not be devalued due to tariffs or unfavorable changes in national monetary values. This is a real- world demonstration of block chain technology, fueling further development of decentralized applications.

**The drawbacks of the Fiat currencies:** Centralized system of monetary management gives the ability for the government to print up money whenever they want. This gives the government the ability to steal resources from the people even when they refuse to be taxed. They just inflate the currency slightly and buy what they want before the prices go up. Every year, a bunch of new money is printed in order to replace all the bills that have been taken out of circulation due to the bills having been destroyed or lost, but they usually will print more than what is actually needed, and thus the available currency constantly expands.

It has the potential to drop to zero value. Since the paper has no value in itself, the paper can and inevitably will lose all value. This means that if you save up money for retirement, the purchasing power of that many will have decreased significantly by the time your retire, forcing you to invest, even if you have little or no experience in the field. Once the currency drops to little or zero value, the economy, and everyone in it, will be completely ruined.

## Conclusion

From this study we can conclude that bit coin was developed under the concept of precious metals and was made sure about its surety by introducing block chain technology for the process of transactions. This study also shows the statistics of how users influence in the supply and demand of crypto currency and also points out the perks of a decentralized system of monetary management. In addition to this it also solves the problem of hyperinflation which is caused by the centralized system of monetary management. It also stresses on the drawbacks of the old fiat currency system and how crypto currency can make a difference in the economy if it is adopted worldwide. The primary reason this is not being done is because of its untraceable character and also it is being misused by the criminals and drug traffickers which is making hard for the government and other financial institutions to regulate it.

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