

BARTER TO CRYPTOCURRENCY – ISSUES AND CHALLENGES FOR THE WORLD ECONOMY

Abstract

Global residents are undergoing a cutting-edge and inventive technological revolution that is putting our current systems to the test and altering the way individuals do a range of jobs. Global residents have experienced various developments that have had a significant impact on their everyday lives, ranging from the barter system to the invention of information, communication, and technology (ICT).

In today's environment, people employ smart phones, cloud computing, artificial intelligence, machine learning, big data, the internet of things (IoT), and other technologies. These innovations are not just replacing previous technologies, but also transforming our economy into one that is more computerised and centric on innovation.

Governments create fiat currencies and regulate their value, but they have no authority over their worth. Cryptocurrencies, on the other hand, are essentially decentralised. Members of the cryptocurrency community, miners, and the general public who participate in transactions manage cryptocurrency.

Cryptocurrency miners process, confirm, and verify transactions, and successful transactions are recorded on the blockchain, a public and distributed ledger. Bitcoin is one of the highly known examples of the same.

INTRODUCTION

In ancient times, the barter system was used to meet everyone's basic wants and requirements for goods, commodities, and services. Later, as society's needs grew, the barter system became unworkable, resulting in the creation of particularly allotted coins made of precious metals, as well as currency in the form of paper, to support society as a whole. The monetary policy of the country has been formed through the Central Bank of the country, e.g., known as the Federal Bank, Reserve Bank, and so on, to manage coinage and currency.

In the final two decades of the twentieth century, the development of state-of-the-art technologies of information and computer technologies (ICT) has resulted in the emergence of currency in the form of electronic forms. These are sometimes referred to as "digital currency," and they are based on the concept and operation of cryptography. Cryptocurrency was born as a result of this.

As a result of digital currency, the use of new technology has increased. Today's disruptive technologies are rapidly evolving and increasing all around the world. Doing business via the internet has resulted in a significant reduction in



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transaction costs, stimulating the development of new electronic payment systems and increasing demand for them. Traditional payment methods, such as digital money or digital currency, have grown more effective as a result of the current electronic payment revolution.

As a result of their ability to support the reorganised supply of digital products and services, financial institutions have

been considerably influenced by client behaviour, tastes, and preferences. Customers currently expect quick, cost-effective, and convenient financial services. Mobile payments, PayPal, Bitcoin, and Blockchain, among other digital currencies, have ushered in a new imaginative manner of trading, utilising, and upgrading online transactions in the financial industry as a means of increasing liquidity.

CASH

A physical object, such as a coin or a banknote, is used to represent cash currencies. When this item is given to someone else, its unit of value is also transferred, without the need for a third party. There is no credit link between the buyer and the seller. The main advantage of physical cash is that whoever owns the physical object also owns the unit of value. This eliminates the need for a central authority to maintain track of property rights to circulating units of value. Cash, on the other hand, has a number of disadvantages. Buyers and sellers must be physically present at the same area in order to trade, which is difficult in many cases.

DIGITAL CASH

Digital currencies have caused a drastic evolution in the payment system with their main aim being *to improve the efficiency of the traditional payment methods* (Tatjana, 2018).

The ideal payment system would allow for the electronic transmission of monetary value through currency data files. These monetary data files would have all of the advantages of real money while also being able to move freely across technical networks. Email or social media could be used to disseminate this type of data packet. The advantage of electronic data is that it may be copied indefinitely at a minimal cost.

This function is highly undesirable in terms of money. If cash data files

can be copied and the duplicates utilized as currency, they cannot be used as a payment instrument. We may separate the huge number of electronic payment methods into two groups because credit and currency are such essential notions. On the internet today, credit card transactions are the most popular method of payment.

CREDIT CARDS AND E-BANKING

You're probably familiar with the process if you've ever bought something from an online retailer like Amazon. You give Amazon your credit card information, which it uses to communicate with a financial system that comprises processors, banks, credit card companies, and other middlemen.

You're dealing with an intermediary infrastructure when you use something like PayPal, on the other hand. You give your credit card information to a company that acts as a middleman between you and the vendor, and this company confirms the transaction and informs the seller. The middleman will settle its account with the seller at the conclusion of each day.

ELECTRONIC PAYMENT SYSTEM

To tackle the problem of duplicate spending, traditional electronic payment systems rely on a central authority that verifies the legitimacy of payments and keeps track of the current status of ownership. In such arrangements, the accounts of buyers and sellers are maintained by a central authority (usually a bank). The buyer initiates the payment procedure by submitting an order.

Following that, the central authority checks that the buyer has sufficient funds and makes the necessary adjustments to the accounts. Centralised payment systems eliminate the problem of duplicate expenditure, but they require trust.

Agents must trust that the central

authority will not abuse its delegated authority and that correct records will be kept in any location throughout the world—that is, that the banker will not flee with the money. Furthermore, centralized systems are vulnerable to cyber-attacks, technical failures, and malicious Governments with the ability to intervene and grab funds. This is being worked out via credit card and net banking a well.

VIRTUAL CURRENCY

On Yap Island, large millstone-like stones were used as a form of commerce. The stones were mined on Palau's island and brought to Yap in small boats across a distance of 280 miles. Every inhabitant could contribute more stone money units to the system. The costs of money manufacture, which included labour and equipment such as boats, prevented the economy from inflating.

Instead of moving the up to 13-foot-diameter stones by hand, ownership rights were practically transferred from a buyer's front yard to a seller's front yard with each transaction. A stone could be detached from it and circulated regardless of where it was found and the unit of value could be detached from it and distributed regardless of where it was found.

Everyone in the village knew who owned each stone, so that was enough. The distinction between the unit of value and the stone expanded to the point where the lost-at-sea unit of value was still used. The Yap system was based on a distributed ledger, in which each citizen kept track of who owned whose stones. As a result, Yap's stone money can be classified as a quasi-virtual currency, with each unit of value only tenuously linked to a physical object.

When a buyer concluded a transaction, he or she told his or her neighbours that the stone had now been transferred to the seller. Neighbors then spread the word until all of the island's occupants were aware of the change in ownership.

Because of this communication, every islander knew exactly which unit of value belonged to whom at any given time. Knowing how many monetary units exist at any one time, as well as how many new units have been created, is crucial for a virtual currency. To ensure that all participants agree on the ownership rights to the virtual currency units, a consensus mechanism must be in place.

CRYPTOGRAPHY

The earliest ideas about applying cryptography to cash came from David Chaum in 1983. This concept is based on a physical analogy. For instance, a piece of paper that I wrote states:

“By submitting this note to me, the bearer of this note may redeem it for one dollar.”

with my signature on it. People can pass these pieces of paper around like banknotes if they believe I will honour my word and believe my signature is unforgeable.

Commercial banks were the first to issue promissory notes, which eventually became banknotes. Governments have only lately interfered in the money supply to concentrate it and legally compel banks to repay notes.

CRYPTOCURRENCY

Cryptography is a means of embedding the rules of a cryptocurrency system securely within the system. It can be used by members of society to prevent fraud and ambiguity, as well as to encapsulate the rules for creating new currency units in a mathematical protocol.

A digital signature is intended to be the electronic version of a paper signature. It looks for two features in digital signatures that are similar to handwritten signatures. It can be signed by the person who is concerned, but everyone who sees it can verify that it is real. Second,

Cryptocurrency is an example of such innovation and technology that is changing the way people do banking in our globalised, internet-powered world

the individual concerned wants the signature to be connected to a specific document so that it cannot be used to imply agreement or endorsement of another.

Cryptocurrency is a type of digital currency that is stored on a blockchain and may be exchanged for goods or services. Cryptocurrency is a type of digital currency that is cryptographically signed, has a virtual origin, and is difficult to forge due to its strong encryption. Cryptocurrency and fiat money are not the same thing. Governments issue fiat currencies and manage their value; governments, on the other hand, have no power over cryptocurrency, which is essentially decentralized.

The currency is controlled by cryptocurrency community members, miners, and public transaction participants. Successful transactions are recorded on the Blockchain, a public and distributed ledger, by cryptocurrency miners who process, confirm, and verify transactions. Cryptocurrency is an example of such innovation and technology that is changing the way people do banking in our globalised, internet-powered world.

BLOCKCHAIN

Blockchain is the second most valuable technology after the internet, and it is a widely used, non-controversial technology in the bitcoin business that works flawlessly and safely. A public ledger, which is a central yet distributed record of all successful events or transactions, is maintained in Blockchain networks.

After a transaction has been

recorded in Blockchain, it is impossible to remove or reverse it. Each transaction in this public ledger is confirmed by a majority of Blockchain contributors agreeing on it. Fake entries may be avoided since the ownership of blocks in the Blockchain can be verified.

Someone must verify transactions in order for the Blockchain network to function, which involves the usage of hashing algorithms as well as a significant amount of CPU time and electricity. A new coin is created and delivered to the supporting node, also known as the miner, to compensate the supporting node in the Blockchain network.

Transaction fees can also be used as an incentive or mining reward. Blockchain, Ether, Binance coin, Solana, Dogecoin, and Cardano are among of the promising cryptocurrencies that utilise Blockchain as an essential underlying technology (<https://cryptocurrencynews.com/>).

There are, however, certain differences in terms of validation times, processing techniques, and services available. Bitcoin Cash is identical to Bitcoin; however, its block size is different. Bitcoin Cash has a higher block size than Bitcoin and processes transactions faster. Dash has two types of nodes: master nodes and validation nodes. Both Ethereum and Dash are built on virtual machines. On the other hand, Ethereum is a decentralised Blockchain application platform that allows users to run smart contracts. Ethereum allows programmers to build and issue their own cryptocurrency. Ether is the cryptocurrency that powers the Ethereum platform. Litecoin is comparable to Bitcoin, except it is faster thanks to its block generation time is 2.5 minutes shorter.

STRENGTHS OF BLOCKCHAIN

Following is the illustrative list of strengths of blockchain.

1. No third party or central bank stands between the sender and the recipient because Blockchain is based on peer-to-peer concepts. It's impossible to spend two currencies at the same time. Transactions are recorded in a single, unchangeable public ledger.
2. Traditional banking takes days to settle international transactions, whereas Blockchain takes only minutes. Transaction fees are incredibly minimal because the blockchain eliminates the need for third parties.
3. Users have complete control over their data and transactions, and they are empowered.
4. Because Blockchain is founded on the decentralisation principle, users can perform secure transactions at any moment.
5. International transactions take days to settle in traditional banking, but only a few minutes with Blockchain. Because the blockchain eliminates the need for third parties, transaction fees are extremely low.
6. The Blockchain reduces the risks of identity theft and fraud, which are the most serious issues in the old banking system.
7. Blockchain tolerates unauthorized transactions while avoiding malicious attacks.

WEAKNESSES OF BLOCKCHAIN

Following is the illustrative list of weaknesses of Blockchain.

1. The Government cannot manage or regulate Blockchain since users can conduct transactions anonymously.
2. Blockchain consumes

considerable electricity. To keep the Blockchain network running substantial electricity is necessary.

3. The status of different Government Blockchain rules is unknown. Legal adoption is a challenge when it comes to Blockchain for cryptocurrency.
4. Cyber security is a major worry because Blockchain-related technologies are still being reviewed.
5. Because of the transaction's anonymity, it can be abused by a number of criminals.
6. Integrating Blockchain into existing financial and banking systems will require a large investment of time and money.
7. Customer protection is another issue with Blockchain; once a transaction is committed, it cannot be undone unless the new token owner agrees.
8. The most serious issue with Blockchain is the growing block size.
9. Online Initial Coin Offering (ICO) fraud is common in the Blockchain space; thus, investors should exercise extreme caution. Due to an ambiguous regularity framework, the future of Blockchain-related projects is in peril.
10. Currently, mining a single Bitcoin needs extremely large and expensive equipment.

BITCOIN

Satoshi Nakamoto is the pseudonym used by Bitcoin's founder. Satoshi claims that he began coding Bitcoin in May of 2007. In August 2008, he registered the domain bitcoin.org. Bitcoin (BTC) is referred to as cryptocurrency since it is a cryptographic-based type of electronic cash. It has risen to prominence since its establishment in early 2009, not least in terms of market value.

Bitcoin does not have set denominations like US dollar bills, and there is no such thing as a "1 bitcoin" designation. Bitcoins are merely transaction outputs, and under the current rules, they can have any value up to eight decimal places. The smallest potential value of 1 Satoshi is 0.00000001 BTC (bitcoins).

The Bitcoin protocol does not necessitate the use of real-world identities. Transactions are instructions to move bitcoin from one address to another, using these pseudonymous key pairs as identities, that are broadcast to the Bitcoin peer-to-peer network. Bitcoins are nothing more than the outcomes of transactions. The goal of the Bitcoin peer-to-peer network is to ensure that all new transactions and blocks reach all Bitcoin peer nodes. Due to the network's inherent flaws, it makes a best-effort to communicate this information. The security of the system is not reliant on the peer-to-peer network's flawlessness.

Instead, security is provided by the Blockchain and consensus process, which have been created and dedicated. Orphan blocks (blocks that are not included in the consensus chain) are common. It's not unusual for problems to arise that do not make it into the consensus chain. For a variety of causes, a block may become orphaned. In the block, there could be an invalid transaction or a double-spend attempt. Network latency can potentially result in orphaning. As a result, two miners could discover new blocks within seconds of each other. As both blocks were virtually simultaneously broadcast on the network, one of them will probably be orphaned.

BENEFITS OF CRYPTOCURRENCIES

Following is the illustrative list of benefits of Cryptocurrencies:

1. *Autonomy*: Ordinary money is maintained in a bank or in the form of cash. These are

stored in a virtual wallet with cryptocurrency and do not require the involvement of a bank or Government.

2. *Confidentiality:* Because transactions are anonymous, it's difficult to relate them to specific users. There is no one to approve and record transactions in the ledger for you.
3. *Bank charges are reduced:* Bitcoin does not charge account maintenance, minimum balance fees, or overdraft fees, while there is still 'maker' and 'taker' fees, as well as the occasional deposit and withdrawal costs.
4. *Accessibility:* Anyone with an internet connection can send and receive bitcoin payments, allowing those who do not have access to traditional banking institutions to do so.

NEGATIVITIES OF CRYPTOCURRENCIES

Following is the illustrative list of negativities of Cryptocurrencies:

1. *Scalability:* While the number of cryptocurrency coins that may be mined each day is unlimited, the number of transactions that can be made each day is limited. Because blockchain process transactions one by one, these transactions can take many hours to complete.
2. *Cybersecurity:* Cryptocurrency can be stored in a digital wallet connected to a hard drive or in an online trading database. These, like anything else on the internet, can be hacked and forwarded to a third party without a trace.
3. *Lack of inherent value:* Gone are the days when currency was backed by gold, but in the past, the New Zealand dollar was indirectly backed by the

New Zealand Government, which had the power to control its value for the good of the country.

4. Cryptocurrencies, on the other hand, have no direct connection to any physical or immaterial object.
5. *Price Volatility:* Cryptocurrency prices are highly volatile when compared to traditional currencies. Bitcoin, for example, started the year at roughly \$9,500 US \$ and ended it at little under \$40,000 US \$. Cryptocurrencies have become more of an investment than a currency as a result of this volatility.

CRITICS OF CRYPTOCURRENCY

There have been various critics of bitcoin, with one questioning if it is a form of asset currency and able to perform monetary transactions in their current form. As a result, bitcoin and other cryptocurrencies are increasingly resembling currency and satisfying the criteria.

Challenges

Despite the fact that cryptocurrencies do not match all of the criteria for money's three fundamental characteristics, namely storage value, unit of account, and transaction mechanism, they do possess the majority of them. Despite the opportunities, Bitcoin faces various hurdles.

Because of the risks and challenges associated with trading and investing in cryptocurrencies, watchers and new investors have adopted a cautious approach to selecting whether or not to participate extensively. When it comes to bitcoin, anyone can open as many accounts as they want for free. There are no centralised vetting procedures in place, and they are not obligated to use their true names. This process is a little murky, and the

notion of illegal conduct underpinning all bitcoin registration and trade could be a hoax in some form.

Being anonymous on the internet allows thieves and fraudsters to carry out their plans in a safe environment. Cybercriminals would use this trade platform to carry out their illicit actions, such as scamming and cheating. According to *Kethineni et al. (2017)*, cryptocurrency is more likely to be utilised by criminals in money laundering and drug trafficking schemes.

Despite the fact that Blockchain technology was created to make life easier for users all around the world, criminals will always find a way to profit. An efficient market, according to *Fama (1970)*, is one in which prior information is accessible that can fully reflect the prices of the market's history. Cryptocurrency is considered a weak kind of commodity because investors are unable to foresee future prospects due to the lack of historical data (*Urquhart, 2016*).

This is especially true given that Bitcoin was first introduced in 2009, over a decade ago. An investment made in such a short period of time is unlikely to have a track record, and investors cannot rely on it to be lucrative.

According to *Fry and Cheah (2015)* and *Urquhart (2016)*, cryptocurrency would be less volatile if it had a real form of account and a way to store value. For example, there is a possibility of crashes and bubbles. It is expected that Bitcoin will soon hit the peak of its bubble.

CONCLUSION:

There had been no actual bubble that would cause Bitcoin or any other cryptocurrency to lose value. While it has been projected that bitcoin will eventually replace traditional currencies, analysts believe this will take a long time and will impact the future scenario for global citizens' social, commercial, and economic lives. This would undoubtedly result

in the formation of the Global village, which would govern all monetary, financial, and societal activities.

Although there are obvious benefits of replacing traditional banks with digital currencies, this is not currently practical until the global economy has the necessary legislation and technology in place. **MA**

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