Comparison of tow two cryptocurrencies: Bitcoin and Litecoin

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Abstract. The increasing daily use of virtual currency (cryptocurrency) is being adopted worldwide for many legal and illegal transactions. Cryptocurrency technology operates on a network that allows people to make payments around the world without any middleman. Since the technology was first developed, it became popular, and the price of cryptocurrencies started to rise and became unstable. In terms of the returns gained from investing in cryptocurrencies, they have been huge in recent times, but there has always been a question about their existence and reliability. A cryptocurrency is a digital process that relies on the use of an encryption system for security primarily. Despite the challenges and problems facing cryptocurrencies, the success of Bitcoin has led several companies to search for alternative digital currencies. This paper tries to compare two cryptocurrencies - Bitcoin (BTC) and Litecoin (LTC) with respect to their stability and understanding its trends in the recent period.

Keywords: Cryptocurrency, Bitcoin, Litecoin, Volatility, IOT, Blockchain.

1. Introduction

Today, through the wide uses of cryptography and the Internet, new financial instruments have emerged. One clear example is the emergence of cryptocurrencies and dealing with them. Cryptocurrencies are a decentralized pecuniary system and a digital currency that cannot be controlled by the government or authority. This provides payment to anyone anywhere in the world via the Internet. Since the inception of cryptocurrencies, they have received widespread interest and cryptocurrencies have been on the rise. Cryptocurrencies are a traditional currency like the dollar. Buy and sell transactions can be realized in any currency. Today, cryptocurrencies are used as an investment like stocks by many investors. Important advantages of cryptocurrencies include international transferability, currency convertibility, controlling stocks from inflation, solving the double payment problem [1].

Bitcoin was the first cryptocurrency to meet the public's imagination, as it was proven in 2009 by a group known under the name Satoshi Nakamoto[2]. As of late 2015, there were more than 14.6 million Bitcoins in circulation with a market value of 3.4 billion dollar.
Bitcoin can be categorized between gold and the US dollar and used in the financial markets [3]. It also concluded that investors use cryptocurrencies to benefit from the great use of this technology and to make a large short-term profit by taking advantage of sudden changes in prices. Despite the lack of regulation and the risks it faces, studies of cryptocurrencies continue very quickly in academic sciences and banking. Today, there are 5,392 cryptocurrencies on the market. Like of these Bitcoin, Litecoin, Ethereum, Ripple, EOS and Tether.

2. **Blockchain In IoT**

Since the start of Bitcoin in 2008, blockchain technology developed as the following innovative technology. Though blockchain began as a core technology of Bitcoin, its utility cases are expanding to multiple other areas including economics, Internet of Things (IoT), security, and such. Currently, many private and public sectors are jumping into technology. Apart from that, as software and hardware update, would see the beginning of IoT. And those IoT designs need to interact and synchronize with each other. But in places where more than thousands or tens of thousands of IoT devices are related, we expect that using the current model of server-client may have some limitations and subjects while in synchronization. So, the researchers propose using blockchain to build an IoT system. Using blockchain, we can control and configure IoT devices. [4]

On IoT vision, standard devices become smart and autonomous. This idea is turning into a reality thanks to advancements in technology, but there are still difficulties to discuss, especially in the security domain e.g., data reliability. Considering the predicted evolution of the IoT in the coming years, it is important to provide confidence in this huge incoming data source. Blockchain has emerged as a key technology that will transform how we share data. Building trust in distributed settings without the need for authorities is a technological advance that has the potential to change many industries, the IoT among them. Disruptive technologies such as big data and cloud computing have been leveraged by IoT to overcome its limitations since its conception, and we think blockchain will be one of the next ones. [5]

IoT devices interact with each other and their surroundings to manage, process, and share data. Security, privacy, and reliability of data are major concerns that need to be addressed for the evolution of IoT appeals. Recently, blockchain technology has pulled important interest from researchers and industry managers due to its potential for enhancing the security, privacy, and reliability of the data. Blockchain offers shared and immutable ledgers for IoT communications in the form of tamper-proof records, built-in cryptocurrency support for transactions among devices and other entities, and smart deals to execute automated programs when certain conditions are met. Although there are potential advantages of the integration of blockchain technology to IoT, the integration introduces new challenges, such as scalability, in the design of blockchains suited for IoT applications. [6]

3. **Types of Cryptocurrencies**

3.1. **Bitcoin**

Bitcoin is a cryptocurrency and is considered a global payment system. It is one of the first decentralized digital currencies, as this system works without a broker or central bank [7]. Peer-to-peer transactions between users take place directly within the network. These transactions are confirmed by network nodes relying on the use of encryption and recorded in a public ledger and distributed called blockchain. Through the mining process, Bitcoins are created, and they can be exchanged for other currencies. Research conducted by the University of Cambridge indicates there were 2.9 to 5.8 million cryptocurrency users, the majority of whom use cryptocurrency.

3.2. **Litecoin**
Litecoin is also a cryptocurrency that competes with Bitcoin, and the main purpose of its design is to process transactions of smaller value in terms of speed. Litecoin was established in late 2011 and according to its founder Charles Lee, Litecoin was considered a silver coin in exchange for bitcoin, which was considered a gold coin. The main difference between Bitcoin and Litecoin is that for Bitcoin mining, fast computing, and processing, Litecoin’s can be mined through an ordinary desktop computer with less processing power. There are about 84 million Litecoin’s in circulation compared to 21 million Bitcoins despite the processing time for Litecoin transactions by an amount of 2.5 minutes compared to Bitcoin about 10 minutes.

3.3. **Ripple**

Ripple was discovered in 2012 by Open Coin, whose founder, Chris Larsen, is a technology pioneer. Ripple is a cryptocurrency and a payment system like Bitcoin [9]. A very fast payment mechanism that allows the user to transfer money in any currency to another user within the Ripple network within seconds.

3.4. **Ethereum**

Ethereum is also called Ether, where this cryptocurrency is created on the Ethereum platform, it is a public platform that contains open source computing based on the use of blockchains [9]. Which has an advanced programming facility. It works with the modified version of Nakamoto's cryptocurrency with a transaction-based fee system. It was established in 2013 by Vitalik Buterin, who was a researcher and programmer in the world of cryptocurrencies. The process of developing the programs related to Ethereum was funded through mass sales over the Internet between July and August of 2014, where the system development was launched on July 30, 2015. The deal in this cryptocurrency was 11.9 million coins for mass sale. This sale was about 13% of the total cryptocurrency in circulation, as the price of the Ethereum currency grew by more than 29,000% from 2014 to 2019.

4. **Evaluation of Bitcoin and Litecoin**

Cryptocurrencies differ from traditional currencies, and are independent of the central bank or any other authority. Cryptocurrencies differ from traditional or online payment currencies, and are often coded with a specific, unchangeable number. Cryptocurrencies like Litecoin and Bitcoin use the decentralized peer-to-peer network without the need for a middleman or bank to transfer funds. Cryptocurrency has become a global event that many people know about. Due to the elimination of the need for a middleman, which led to the provision of cryptocurrencies to provide a more efficient and secure infrastructure to conduct the money transfer process[10]. The main advantages of cryptocurrencies over traditional currencies as they are not affected by the economic situation of any country because they are certainly not approved and are not subject to the central bank in a country. It is not possible to seize or freeze any account of the accounts opened in the encrypted digital currency, and it is not possible to know to whom it belongs and is not under the supervision of any central authority. Cryptocurrencies do not have as much value as precious metals. Determining the value depends immediately in terms of demand and supply conditions in the market, and then what is the case in traditional currencies. The cryptocurrency can be converted into the currencies of all countries through the state and other traditional currencies. Bitcoin, which can mainly affect the real economy, was established and used in a short time. Which led to the increasing use of Bitcoin and to begin as an important investment tool to the emergence of users and investors of Bitcoin [11]. A virtual wallet allows Bitcoin to be sent to anyone who has a wallet. But when buying Bitcoin, you don't have to pay any commission. The important thing is that all buying and selling transactions are
done directly, unlike waiting for a few days in the bank. Most importantly, it is difficult to break the cryptocurrency transaction program.

![Fig.1. Historical Price of Bitcoin Source: coinmarketcap.com, 12.3.2021](image1)

After the success of Bitcoin, Litecoin, which was developed with the Bitcoin open-source software, was released. It is the first example of an alternate encrypted digital coin, created by Charlie Lee. As the most famous and fastest growing cryptocurrency Litecoin all over the world relies on an open-source cryptocurrency system and does not deal with a middleman or central official. Litecoin, which is technically like Bitcoin, has close to zero trading costs, and payments transactions are four times faster than Bitcoin. So, it is the easiest, cheapest, and highest market size of Bitcoin. The price and market value of Litecoin transactions increased from about 73.9 million respectively on May 1, 2013 to the highest price of 360 and 19.5 billion in the market on December 19, 2017. Despite the potential of cryptocurrency, a limited number of consumers and companies have adopted it. This is due to the lack of regulatory authority to increase the legitimacy and credibility of cryptocurrencies, as well as the large fluctuations in their value in the market.

![Fig.2. Historical Price of Litecoin Source: coinmarketcap.com, 12.3.2021](image2)
4.1. Technology

One of the most distinctive features of Bitcoin technology is the blockchain, which is a large digital record of transactional transactions. The record is stored over a network of thousands of computers known as a node. Users can send money to each other via the Internet to all parts of the world. Without the need to use banks or worry about exchange rates and fees.

The pooling of transactions takes place in groups called blocks before they are added to the blockchain [12]. The nodes that result from the check-in blocks get a reward for the work they do. On the Bitcoin blockchain there is a new coin called the bonus, which is 12.4 new BTC. This process is like gold mining and is called mining.

Bitcoin mining is very expensive [13]. You need a computer with high specifications and powerful to do this process and consumes a lot of electrical power. Not to mention it is slow. The process of adding each new block to the blockchain takes approximately 10 minutes.

The term SHA-256 is a term for the rules that define how Bitcoin mining works. These are the rules that Charlie Lee wanted to change. Where he created new rules called scripts. Mining by using the basic program is four times faster than SHA-256, as it requires less electricity.

This means that each new block of transactions takes only a minute to be added to the Litecoin Blockchain. Each verified block will have a 25 new Litecoin (LTC) reward.

Additionally, fans do not expect Charlie Lee to make the overall change to the Bitcoin rule any better. The reason is because it makes the Litecoin platform faster and cheaper, and in terms of security, there has been no hacked of any of the blockchains.

4.2. Store of Value

A commodity can be bartered for anything if it has value. A store of value is a valuable thing. An example of this is gold is one of the most famous model stores of value. Gold has been very expensive for hundreds of years all over the world, which is why it is called a precious metal.

Currencies can be stores of value. The US dollar is a strong currency, and it is also considered better value stores than weaker and less stable countries.

Gold is of limited quantity in the world and is considered a store of value because its value is precious. The most important sign of inflation is gold. This means that its value will not rise, but rather decrease greatly, and its value can be predicted and predicted. It may also be correct for Bitcoin and Litecoin. Both are poorly supplied. There are only 21 million Bitcoins and 84 million Litecoin’s, both of which could be good stores of value [14].

Bitcoin is one of the oldest, safest, and most trusted currencies. It will reach the supply level first, and of course a third of all its coins have been mined. It is expected that its value will become reliable and predictable, just like gold in the future.

Cryptocurrencies are not storing of value. It should be able to buy. We will learn about the best currency to become money.

4.3. Money

So far, cryptocurrencies have not replaced the money. It is not possible to shop from the supermarket and pay with Litecoin. Someday it will be possible to pay with the cryptocurrency.

Lots of companies and offices use Bitcoin as a payment method. Among those companies, KFC Canada, Expedia.com. Uber is one of the companies that accepts Litecoin as a payment method.

Litecoin is not as standard as Bitcoin, but its channel may make it the best spending currency. The processing time for Litecoin is about four times faster than the processing time for Bitcoin. Companies and clients may like this knowledge and start using Litecoin as a replacement for of Bitcoin.
Reviews of Litecoin users say that Litecoin transaction time sorts it the best currency because it is very fast. Because Bitcoin takes 10 minutes for a blockchain to verify that transaction if you try to spend Bitcoin in a store.

But this is not the well-known method of spending Bitcoin. When Bitcoin is spent in a store, the store will verify your payment is legitimate with a little node on the system. Because these ten minutes is not just the blockchain consuming it to verify a transaction.

The term Zero Confirmation Transaction refers to the process of verifying a small number of nodes, the store must verify that you have enough money to pay.

We conclude that Bitcoin is winning again, because Bitcoin is more used as a means of payment in many places, and it uses zero confirmation transactions to make the purchase process faster.

We talked about technology and numbers a lot. But the most important thing is the reason to start dealing in the encrypted currency, is the invention of the cryptocurrency to serve and help people, as the originator of those cryptocurrencies wanted to seize power and dominate the market by banks and governments. And restore strength and confidence to the peoples of the world [9].

4.4. Democracy

The mining technology on each platform is the main difference between Litecoin and Bitcoin. Bitcoin mining is more expensive and more difficult than Litecoin mining. In order to make money from the Bitcoin mining process, he needs an advanced and powerful computer hardware.

Most of the cryptocurrency dealers use special computers designed for the bitcoin mining process, they are called ASIC miners. As Bitcoin's value grows increasingly, Bitcoin mining is a private industry [15]. Where special mining warehouses were established.

The risk is that a high percentage of the supply of Bitcoin will be owned by a small number of companies and individuals. It is expected that cryptocurrencies will not be the same, as the purpose of their creation is to distribute wealth in an equal manner.

We can say that the quantity of energy expended to mine Bitcoin is harmful to the system. Charlie Lee discovered all of this when he created Litecoin, which can be mined using ordinary computers. For Litecoin mining, ASIC minerals cannot be used. New coins can be accessed from a large group of users.

We can say that Litecoin is more democratic because it allows the largest number of people to participate in it.

4.5. New Developments

Together Bitcoin and Litecoin want to accelerate transaction times, each using the same knowledge to accomplish that process. Called the Lightning Network, it is a method of confirming transactions away from the main blockchain. The entire system would work quickly, and the miners would have less work to do.

Lightning Network allows users to open small networks. These networks are called payment channels. It will inquire about these transactions that take place on networks with rules called smart contracts. It is a set of conditions that must be avoided before starting the transaction.

Thousands or millions of such transactions are expected to occur this way. It will make use of this system to make intra-platform trading possible [16]. This means that Bitcoin can be changed to Litecoin without using a cryptocurrency exchange. Trading currencies on a blockchain is great because the rest of the cryptocurrency exchange platforms are not safe, and they charge fees for that process.

The procedure of exchanging Litecoin to Bitcoin requires creating a payment channel with a user on the Bitcoin network. This group of various transactions is called the atomic exchanger. Provided that both users have sufficient currency to make the swap, the change will take place. And vice versa if one of the users does not have enough currency.
Bitcoin and Litecoin both started consuming Lightning Network. Some people believe that using Bitcoin for this network will terminate Litecoin and expect that Bitcoin transaction times will render Litecoin useless.

The convergence of the two major currencies is due to their entry into the Lightning Network [17]. The Lightning Network was described by Charlie Lee as a bridge between two roads and that the Bitcoin road was full of slow-moving cars. While the Litecoin road is nearly empty, the Lightning Network Bridge will facilitate the traffic between them.

Through the competing rounds, Litecoin won two competitions, and Bitcoin won two as well. However, this is only an opinion that does not change that Bitcoin is the largest and most famous name in the cryptocurrency.

Some users think Bitcoin is the best cryptocurrency worth using. If you are one of those users, remember that Bitcoin cannot serve the world. As it is expected that Bitcoin V supports 500 million users, representing 15 percent of the population around the world. Litecoin is one of the best currencies as it has a place in the other coin market.

Usually, Bitcoin is compared to gold and Litecoin is compared to silver. Another example of this is that they are like Coca-Cola and Diet Cola. Some people like cola, while others like the taste of cola, but without sugar.

There is a quote from Charlie Lee, "Bitcoin and Litecoin will work together to solve the world's needs in the near future".

5. Conclusion

The cryptocurrency Bitcoin and Litecoin is a revolution in the world, depending on its technological infrastructure, and it is a cryptocurrency that can be used all over the world. One of the important features of this currency is its ability to convert into currencies of all countries through traditional currencies. The fact that there is no middleman or regulatory authority and the popularity that it possesses make the cryptocurrency a competitive currency in the market. Cryptocurrencies are decentralized and are not approved or subject to central bank policy. The lack of certain investment rules makes it highly volatile compared to traditional currencies.

It can be concluded that Bitcoin can benefit from the current number of users and is expected to witness further growth within five years. Litecoin could be considered as a new way to invest in the world of currencies.

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