RESEARCH ON THE EFFICIENCY OF AN INVESTMENT IN VIRTUAL CURRENCIES

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ABSTRACT: Virtual currencies, also known as cryptocurrencies, are digital assets used as a means of exchange and storage of value that use cryptography to secure transactions and control the creation of new units. These currencies are created and transferred through a decentralised network, without being controlled by a central authority or bank. This distinguishes them from traditional currencies, which are issued by central banks and controlled by governments or other authorities. One of the key features of virtual currencies is that transactions are recorded on a public ledger, known as the blockchain. This makes transactions transparent and verifiable, but also impossible to forge or alter after registration.

KEYWORDS: virtual currency, cryptocurrency, Bitcoin.

1. Introduction

Virtual currencies, also known as cryptocurrencies, are digital assets used as a means of exchange and storage of value that use cryptography to secure transactions and control the creation of new units. These currencies are created and transferred through a decentralised network, without being controlled by a central authority or bank. This distinguishes them from traditional currencies, which are issued by central banks and controlled by governments or other authorities. One of the key features of virtual currencies is that transactions are recorded on a public ledger, known as the blockchain. This makes transactions transparent and verifiable, but also impossible to forge or alter after registration.

2. Cryptocurrency

Bitcoin - Since its initial introduction in 2008, Bitcoin has grown to become a peer-to-peer digital currency that is traded on open markets and can be transferred instantly between two people, anywhere in the world, at the speed of an email and at a significantly lower cost than transactions made through the established financial system.

Peer-to-peer is a form of crowdfunding, where a group of people lend money to a business on the condition that they are "paid" interest on the money they borrow. They are similar to conventional loans from a bank, with the difference that peer-to-peer loans involve borrowing from several investors. [1]

Through the creative application of public-private key cryptography and a peer-to-peer network system, Bitcoin has created a method of transferring digital assets. Bitcoin provides a public record of all transactions in chronological order in the form of a distributed ledger known as a blockchain. Instead of being maintained by a single entity, the blockchain is automated, using the combined computing power of the network to validate balances and secure transactions. When blocks are formed from valid requests and verified, the chain is extended linearly (on average every 10 minutes). Only the party holding the access code (private key) linked to an account has the right to request transactions (public key). Each node updates its copy of the blockchain immediately after each block has been confirmed.

How can nodes ensure that a new blockchain update is genuine when they receive it? Or how can distributed parties that don't trust each other come to an agreement about the current state of the blockchain?

Nodes in the network, known as miners, are those that contribute computing power to gather legitimate transaction requests and compose blocks that are added to the blockchain. They receive all transactions and attempt to assemble a valid block [2].

The Secure Hash Algorithm (SHA)-256 standard describes hashing as a random "guessing game" that involves more than 100,000 attempts with an acceptable digital string that matches a suitable pattern.

2.1 Bitcoin Mining

In the competitive Bitcoin mining industry, miners receive new Bitcoins for every block correctly mined and accepted into the blockchain. This defines how new coins are created and gives rise to the term "mining". Getting a good block is never guaranteed because hashing is random.

The process of creating a blockchain, making transactions and creating bitcoin is shown visually in Figure 1.

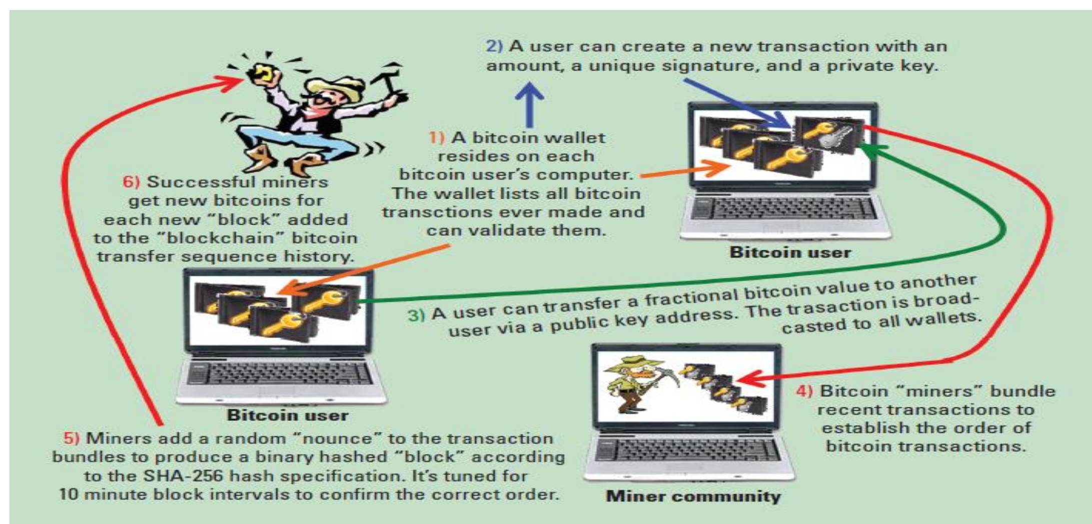

Fig. 1 How bitcoins are mined, sent, stored and created.
Source: Bitcoin: Benefit or Curse?

To make the mathematical puzzle more difficult and to keep the production of new blocks under control, it is occasionally modified. The maximum number of bitcoins that can be created will be 21 million, which will not happen until around 2140[3].

2.2 Why does Bitcoin have a rigid capitalization limit?

The total number of Bitcoins that will ever exist is limited to 21 million due to the way the Bitcoin protocol was designed. This limit was set in the original Bitcoin document published in 2008 by its anonymous creator (or creators), who goes by the name of Satoshi Nakamoto.

The 21 million limit was chosen for several reasons. One of the main reasons is to ensure that Bitcoin remains rare and retains its value over time. This is because, unlike traditional currencies such as the US dollar or euro, which can be printed by central banks, the number of bitcoins is fixed and cannot be more than 21 million [4].

Efficiency of investing in virtual currencies

Investing in virtual currencies can be an effective investment strategy for some people, but they also come with risks and uncertainties.

One of the advantages of investing in virtual currencies is the potential for high returns. The value of cryptocurrencies can be very volatile, and this volatility can lead to large price movements in a short time, allowing investors to profit from their investments if they time their trades correctly. However, investing in virtual currencies also comes with significant risks.

The cryptocurrency market is largely unregulated, which means investors may not have the same legal protections as other types of investments. It is heavily influenced by the supply/demand factor of the market, which can lead to sudden and dramatic price swings.

Investing in virtual currencies can be an effective investment strategy for some individuals, but it is important to carefully consider the risks and potential rewards before making any investment. It is important to do your own research and never invest more than you can afford to lose.

2.3 Investing in cryptocurrencies for long-term gains

Investing in cryptocurrencies for long-term gains requires a different approach than short-term trading strategies. The steps to consider when investing in cryptocurrencies for the long term are:

1. **Market analysis:** It is important to thoroughly research the cryptocurrency you are interested in before investing. It is recommended to look in detail at the underlying technology, use cases, adoption rates and community support. Factors such as the size and growth potential of the market and competition in the space should be considered.
2. **Portfolio diversification:** As with any investment, it is important to diversify the portfolio to minimise risk. Consider investing in a mix of different cryptocurrencies to spread the risk across multiple assets.
3. **Long-term investment:** Cryptocurrencies can be very volatile, so it is important to invest for the long term to cope with market fluctuations. Instead of trying to time yourself with the market, focus on investing in solid projects that have long-term growth potential.
4. **Asset diversification:** Instead of investing a large amount of money at once, most investors allocate fixed amounts of money at regular intervals, such as monthly or quarterly. This can help smooth out market fluctuations and reduce the impact of short-term price movements.
5. **Keeping investments safe:** Although stock market portfolios are generally safe, keeping assets online involves risk that can be reduced relatively easily. Storing assets offline is significantly safer and fairly simple to set up, whether using a backup phone or a specialized hardware wallet[5].

2.4 What could happen if you invest $100 in Bitcoin (BTC) today?

Almost the only predictable aspect of the highly volatile crypto market is the existence of FOMO (Fear Of Missing Out). Every time a coin or token goes up, the community splits into two groups: those who have managed to make money from the price increase and others who wish they had.

Many people are influenced by FOMO when they make rash decisions, such as buying a shitcoin that might crash shortly after they buy it. Bitcoin is significantly more stable and has firms and institutional investors backing it, so it is not as dangerous as standard coins and tokens. What might have happened if I had bought bitcoin yesterday, last month or three years ago? It's another question many people are thinking about as a result.

So what could happen if you invested $100 in Bitcoin today? You could get lucky and quickly make a 100% profit, or you could sell the coins at the wrong time and lose your $100 investment. The amount of profit (or loss) will depend on both your ability as an investor and the volatility of the cryptocurrency market and BTC price.

We might be entering a period of optimism if we look at the history of bitcoin prices over the last few months. In 2023, cryptocurrency markets look set to recover from their 2022 decline, so they could once again become a profitable investment option.

Fig. 2 Graph of Bitcoin evolution. Source: Trading View

Circumstances could, however, change at any time. It is essential to know that trying to anticipate and beat the market will always be a gamble. In general, it is advisable to invest gradually, over a longer period of time, and control your FOMO when it comes to investing in Bitcoin.

Is $100 enough to invest in Bitcoin?

The end goal will determine whether $100 is adequate or not. It may not be enough of an investment if one wants to make significant profits. However, it is more than enough if the only goal is to make some money.

Can you get rich investing $100 in Bitcoin?

It all depends on when you plan to sell Bitcoin and how much it will increase in value in the future.

If you had invested $100 12 years ago in Bitcoin, which was worth between 0.14 and 0.30 cents per unit at the time, you would now have $28 million.

It would be worth investing that $100 if it is going to be used to buy Bitcoin as part of a larger investment strategy or if the buyer intends to keep it for the foreseeable future. The best alternative, if massive immediate gains are desired, is to choose another smaller cryptocurrency (Ethereum, Binance Coin, Solana, Elrond, Chainlink, etc.) that has more pronounced price fluctuations[6].

3. Ethereum (ETH)

Due to the fact that Ethereum is the second largest blockchain, it is the first cryptocurrency that many people turn to when thinking about investing in crypto. When it launched,in 2015, Ether had a price of just $0.42 per coin, a price that hovered slightly below $1 by March 2016, surpassing the $10.03 mark.

In 2017, Ether increased significantly and in May of that year, it surpassed the $100 threshold. Ether had a value of $774.69 at the end of 2017, and in the first week of 2018 it exceeded $1000.

After this unprecedented rise, Ether was destroyed by the 2018 cryptocurrency crash, also known as the Bitcoin crash, and by the end of the year, its price had fallen to just $100 per unit.

The cryptocurrency's price rose again between 2019 and 2021, peaking at $4,815 on November 9, 2021.

The coin's value declined in the first six months of 2022, losing 66% of its market value over the year.

According to the chart, the beginning of 2023 looks fruitful for investors, with a continuous price increase.

Fig.3 Graph of Ethereum evolution. Source: Trading View

Ethereum has great potential for significant price growth. By 2030, experts and business analysts predict that Ethereum will reach an all-time high price of $87,487.98.

It is anticipated that Ethereum's value will continue to rise as shortages tend to drive up prices.

It is important to note that investing in cryptocurrencies, including Ethereum, is speculative and can be risky. The decision to invest in Ethereum depends on several factors, including an individual's goals and comfort level with financial risk.

If I had invested $100 in ETH at its launch in 2015, today when the currency is worth $1,889.1 ,today I would have a profit of $68,188.19. [7]

4. Binance Coin (BNB)

Binance Coin (BNB) was originally developed as an ERC20 token on the Ethereum platform. Binance Coin buys and burns coins, destroying them entirely, using 20% of its revenue and will continue to perform quarterly burns until it buys in and destroys 100 million coins, 50% of its total supply. The procedure ensures that the supply of Binance coins is limited, which increases their rarity and value. [8]

Fig. 4. Graph of the evolution of the Binance Coin (BNB). Source: Coingecko

We can see that Binance Coin had an increase between the year 2017-2021 from 3 cents per coin to $686.31, which means that it brought investors from the year 2017 in a period of 4 years fabulous gains. An investment of $100 in the year 2017, an investor would have reached a profit of over $2,000,000 in the year 2021, when the coin price crossed the $600 threshold.

5. Conclusions

The effectiveness of an investment in virtual currencies, or cryptocurrencies, depends on several factors, including the investor's objectives and comfort level with financial risk.

In the short term, cryptocurrency prices can be volatile and can vary significantly depending on factors such as technology adoption, global economic developments or geopolitical events. In this sense, investing in cryptocurrencies can be considered risky. In the long term, some investors believe that cryptocurrencies have significant potential to increase in value.

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