

The Progress of Cryptocurrency Assets Investment from Financial Perspectives: Risks, Comparisons and Impacts

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ABSTRACT

Cryptocurrencies have become increasingly popular in recent years. As cryptocurrency prices have soared a lot since 2008, plenty of investors choose to invest in cryptocurrencies driven by speculative motives. With the development of cryptocurrencies, the feasibility to act as a medium of exchange them is also explored by some companies. Starting from cryptocurrencies' current role as speculative products, this paper discusses the possible risks existing in the investment process and methods to prevent them. To explain their possibility of being the trading medium, we take Bitcoin, a widely held cryptocurrency, as the subject to compare it with other kinds of currencies, e.g., Dogecoin, Ethereum, Central Bank Digital Currency and traditional currencies. Among the greatest affecting affairs of virtual capital, we choose the cases of Tesla and Tencent to explain their impacts on our daily lives from the micro perspective. As for the macro perspective, we concentrate on its impacts on accounting methods and financial order development. This paper aims to enhance a comprehensive understanding of Bitcoin through multi-dimensional analysis, which sheds light on cryptocurrency and blockchain investing.

Keywords: Cryptocurrencies, financial risks, blockchain.

1. INTRODUCTION

When it comes to the origins of cryptocurrencies, it starts with cryptography. To better protect personal information, human beings began to advocate using technology to maintain privacy, and cryptography is one of them. Based on cryptography, people have the right to choose to publish their personal information or not [1]. Consequently, cryptocurrency was born. It is a medium of exchange that uses cryptographic principles to secure transactions and control the creation of exchange units, a type of digital currency. Bitcoin became the first decentralized cryptocurrency in 2009. The term cryptocurrency has since been used to refer to such designs. Afterwards, several similar cryptocurrencies have been created, often referred to as Altcoins. Cryptocurrencies give consensus mechanisms for decentralization. The decentralized nature stems from blockchain technology, which uses a distributed

ledger instead of the financial banking system that relies on the centralized regulatory system.

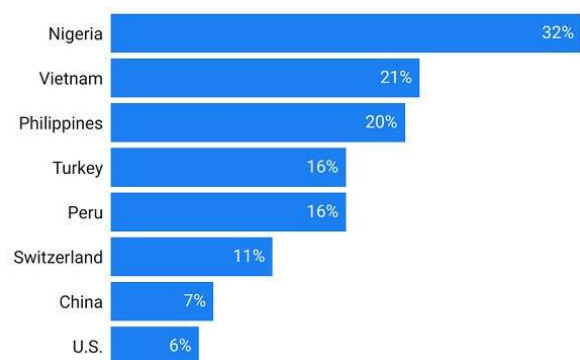


Figure 1. Share of respondents who said they used or owned crypto for different nationalities [2]

Currently, cryptocurrencies are widely used and popular around the world. As shown in Fig. 1, cryptocurrencies are particularly popular in places like

Nigeria, Vietnam and the Philippines [2]. It can be applied to any level or field. For example, retailers such as Overstock and Bic Camera have also made it clear that customers may use bitcoin for transactions. Even some luxury goods and luxury real estate are gradually accepting cryptocurrency payments like Bitcoin as a new form of payment for young investors [3].

As more and more people are tempted by its advantages and benefits as well as blindly want to participate in the speculation but do not understand the harms, we will briefly introduce several common risks of cryptocurrency in the first part of the passage and give some suggestions (e.g., avoid them in a limited scope). In part two, other digital currencies and traditional currencies are compared with cryptocurrencies to demonstrate their strengths and weaknesses, i.e., help understand some of the unique features and properties of cryptocurrencies. In the third part, we discuss the impacts of cryptocurrencies on people from the perspective of our life, economy and finance. Finally, a brief summary is given.

2. RISKS

Generally, there are several large problems in the process of cryptocurrency speculation, whether from the security, technical or policy aspects. Table 1 lists some of the common risks and their corresponding solutions. These risks are essentially impossible to eradicate. However, we could adopt different methods to mitigate them one by one and avoid some unnecessary ones to minimize their harms.

Table 1. Common risks and solutions for crypto

#	Risk	Solutions
1	Credit risk	Never be greedy, learn to see through conspiracies
2	Technical failure & hacker attack	Cold wallet
3	Fluctuation risk	Hedge fund
4	Regulatory policy risk	\
5	Lack of legal protection	\

2.1 Credit risk of trading platforms

People like to trade digital currencies on exchanges; however, many exchanges have credit problems. Some may have taken advantage of their access to large amounts of cryptocurrency and primary transaction data to manipulate parts of the cryptocurrency market. They

would even try to find the right time to run away with the money in some cases. Especially in the case of the global economic downturn, currency market fraud has become more frequent. According to the news, only in 2019 there were nearly 20 incidents of exchanges escaped from the coin circle [4]. For example, the AT exchange that left in February 2019 has involved about 2 billion yuan. At first, AT announced that it had been hacked, but there were no words after three months of searching. Until now, the website is still not open, and users have no way to withdraw their money. The investigation proved that this exchange's claims were all excuses that they were simply trying to get away with the money [5].

There is no absolute way to avoid such risks. The only thing one can do is keep a clear head and learn to see the plot when it comes. The escaping platform is not much clever. Generally, they build the platform in a short period and then begin to attract users through high revenue. When users invested the money, they will take the money and run away. To put it bluntly, all the evil is because of greed. As long as not to be tricked by the lure ways in the name of capital preservation and high income in the guise, it is difficult to fall into the well-designed traps or pitfalls. After all, there are plenty of reliable digital currency exchanges. Besides, there is no need to take greater risks for those so-called high-interest rates.

2.2 Technical failure & Hacker attack

The trading platform's technical glitches include website downgrades, trading outages etc. In May 2017, a system failure at Coinbase caused bitcoin's biggest drop of more than 20%.

With a large number of digital assets and traffic channels, cryptocurrency trading platforms are a natural choice for hackers to attack. There are lots of "dark nets" in virtual cyberspace, which has brought uncontrollable factors to cryptocurrency transactions and social security. For example, in the case of ETC and ETH hard fork [6], hackers took advantage of the flaws in the DAO Plan fund to transfer \$50 million worth of Ether. Therefore, everyone voted to have the Ethereum hard fork in Block 1920,000 to roll back all the stolen Ether. But in fact, most of the cryptocurrencies can't be recovered after being stolen.

A relatively effective way to solve the above problem is to convert digital money into a physical form, commonly known as a "cold wallet". In this way, the protection of keys would become a simple way of protecting the physical entity printed with the digital currency key. This offline system has never been connected to an Internet system. Additionally, storing digital money more securely in different wallets might

help spread the risk and reduce some of the uncertainties created by the Internet.

2.3 Fluctuation risk

One of the attributes of cryptocurrencies is known to be “variability”. The price of cryptocurrencies is often affected by daily fluctuations. This effect is something that most people cannot predict. For instance, the SHIB shown below experienced numerous fluctuations of varying degrees over only two days on March 13-14, 2021 [7].

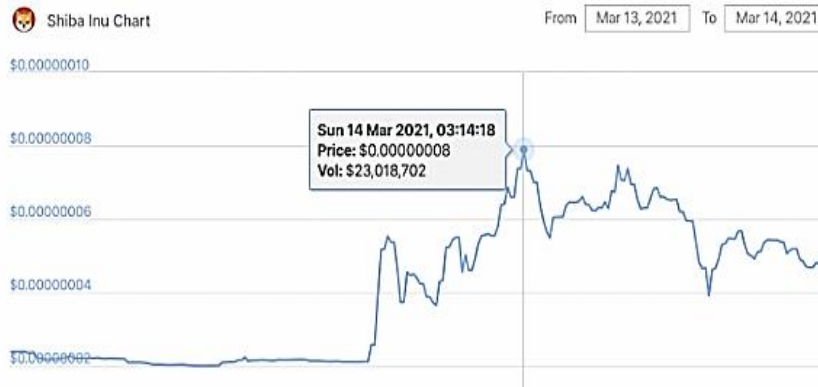


Figure 2. The price variation of Shiba on Mar 13 2021 [7]

For this, the financial services industry is also offering measures. Some cryptocurrency-specific hedge funds, e.g., hedge their risk across multiple cryptocurrencies through fund investments to avoid losing too much money in the event a cryptocurrency price falls out of bed. In addition to the above mentioned, there are some inevitable systemic risks of cryptocurrencies, such as policy risks of supervision and the consequences of lack of legal protection.

2.4 Regulatory policy risk

Due to their speculative nature and volatile price, cryptocurrencies have been closely watched by regulators worldwide. For instance, in China, digital currency issuance is defined as illegal fund-raising, and financial institutions are prohibited from processing or providing virtual currency services and settlements for any individual or institution. In 2017, Chinese trading platforms were subject to a massive clean-up and rectification, leading to the closure of most platforms and a downturn in the market [8]. Additionally, in 2021, the American FBI issued a serious warning about individuals not getting involved in cryptocurrencies like Bitcoin [9].

2.5 Lack of legal protection

Moreover, as some countries have not effectively guaranteed the digital currency trading system, there are huge risks in transaction security. Many people lost their money because of the fraud and have no recourse to the police or specific agencies for legal protection. For example, in the Plustoken case from 2018 to 2020, even though the law finally punished the main perpetrators,

the victims still had no way to get reasonable and effective compensation through legal channels [10].

Therefore, looking for opportunities to invest in crypto assets requires keeping a clear mind and having an explicit investment objective, risk tolerance, reasonable investment expectations, and learning to use legitimate financial means to mitigate the crisis.

3. COMPARISONS

Bitcoin and Dogecoin are two kinds of famous cryptocurrencies, and there're differences between them. Firstly, they have different algorithms for mining. Dogecoin is based on the scrypt algorithm, while Bitcoin is based on the SHA-256 algorithm [11]. Secondly, their maximum supply is different. Dogecoin has an unlimited supply, though the original assumption of Dogecoin is 100 million. However, the maximum supply of Bitcoin is 21 million. Thirdly, Dogecoin doesn't own an independent algorithm, Litecoin, and it is merging, but Bitcoin does. In addition, Bitcoin has been another popular way of payment, and more and more companies start to accept it. Although, Dogecoin developed behind and has not reached such a popular extent yet. Apart from these, Bitcoin and Dogecoin are all decentralized, and since Dogecoin is merging with Litecoin i.e., Dogecoin is much more decentralized [11]. As for Bitcoin and Ethereum are also issued by individuals, but Ethereum appeared around July 2015. Moreover, Ethereum is more like a platform, which allows transaction and lets people develop applications and smart contracts [12]. However, for Bitcoin it aims to become a substitution of countries' traditional currency. Besides, the supply of Ethereum is unlimited, and it

supplies 18 million each year [12]. Additionally, Ethereum takes less time to add one block to the blockchain, and it only needs about 12 seconds which is much faster than Bitcoin [12].

Comparison with these cryptocurrencies and Central Bank Digital Currency (CBDC). Obviously, Central Bank Digital Currency is issued by the central bank, i.e., it is monitored by the central bank and centralized. Nevertheless, cryptocurrencies like Bitcoin are issued by an individual, i.e., it is decentralized. In addition, CBDC is legal digital currency while Bitcoin is not. As mentioned before, the maximum supply of Bitcoin is 21 million. Whereas CBDC has an unlimited supply theoretically [13]. Moreover, we can see the price of BTC can be changing over time, and it can be used to sell and buy. However, CBDC is legal tender, so that its value is fixed. If its face value is \$100, then it's just \$100. What's more, it is anonymous for Bitcoin transactions, i.e., it hides private information very well, and traders don't know each other. Nobody knows who each BTC account belongs to whom except those owners. While Central Bank Digital Currency is real-named. Therefore, everything is transparent, and the central bank can easily query account information. Thus, it can decrease money crime to some extent [13].

Bitcoin can be the representative of these cryptocurrencies. Then we compare Bitcoin with traditional currency. First of all, the traditional currency is issued by the country, i.e., it is monitored by the country organization, and there have related laws to

protect it. Actually, it has an unlimited supply, i.e., we have inflation. However, Bitcoin is not legal tender, i.e., it is not monitored by country. In addition, it only has 21 million that is limited, indicating that it does not have inflation [14]. Then the important thing is that traditional currency has a government credits guarantee. While Bitcoin is decentralized, and it does not have a government credits guarantee. In addition, as mentioned before, BTC is anonymous, and owners do not need to pay tax which can reduce transaction costs [14]. Besides, BTC is based on the algorithm and technology of P2P, and it is safer since it can't be forged compared with traditional currency. Apart from these, when during international trading, BTC is more convenient because anyone can sell or buy it everywhere. We don't need to worry about exchange rate problems [14]. Also, in our opinion, cryptocurrency is easy to carry. However, it needs lots of electricity to generate Bitcoin, and the process will destroy the environment. For this aspect, the traditional currency is more environmentally friendly. Additionally, cryptocurrency can reduce people's exposure, which is safer during a special situation like COVID.

4. IMPACTS

More and more people choose to invest in Bitcoins, and Bitcoin has greatly impacted our daily lives and the economy. Fig. 3 depicts Bitcoin price fluctuation and shows the total volume in the past 24 hours (CST 9.51 p.m., 10th August 2021).



Figure 3. Price chart of Bitcoin

In Figure 3, the market cap is the current price of BTC multiplied by its current circulating supply. Volume is the total dollar value of all BTC transactions over the past 24 hours. Includes data from all exchanges, not just Coinbase. Circulating supply is the total dollar value of all BTC transactions over the past 24 hours. Includes data from all exchanges, not just Coinbase.

Here are some cases about using Bitcoin to trade. On March 24, 2021, Tesla's official website announced that it would support Bitcoin payment, but only American

customers could buy cars using Bitcoin. As for the overseas markets, Bitcoin payment may be allowed in the future. However, on May 12, 2021, Elon Musk, the CEO of Tesla, stated that on Twitter that Tesla had suspended the use of Bitcoin to buy cars due to the concerns that Bitcoin mining would damage the environment. For instance, 58 per cent of Bitcoin mining around the world was located in China in 2018. It is mainly concentrated in regions that rely on coal-generated power, which caused many carbon emissions

[15]. At an online event named 'The Word', which aims to advance the institutional acceptance of cryptocurrencies, Elon Musk mentioned that if the proportion of renewable energy used in Bitcoin mining reaches or exceeds 50%, and there exists a trend that the percentage is increasing, Tesla will eventually return to accept Bitcoin as a means of payment for the car.

In China, Tencent company issued a kind of virtual currency called Q coin in 2002. Q coin shares some similarities with Bitcoin, e.g., they are both decentralized currencies. Q coin is still under the control of Tencent, while any third party does not control Bitcoin. Q coin can be used in QQ related websites and online activities. As it growing popular, some offline exchange places appeared, and some people used it to buy goods in reality. The value of it is determined by Tencent company, i.e., the value is unstable and out of the control of the government. Because of the fear that it may impact the status of the RMB and distort the financial order, the Chinese government regulated the application scope of virtual currency. To conclude, it is not easy to accept decentralized currencies to act as a medium of exchange in reality. Comparing with virtual currencies, cryptocurrencies can be applied in transactions from a technique perspective. However, many other difficulties, e.g., environmental problems and regulatory issues, need to be addressed if people want to use cryptocurrencies to trade in their daily lives.

From the accounting perspective, the accounting mode reflected by blockchain technology provides a new direction for the development of accounting in the future. Most companies adopt the double-entry bookkeeping method, which is private to the company, and only the company's internal financial personnel can have the company's accounting rights. When there is no need for auditing, only the finance department personnel and managers have access to the content. On the one hand, it is relatively easy for clever counterfeiters to make fake accounts. On the other hand, it is quite difficult for other companies to get financial data. Nevertheless, decentralized cryptocurrencies adopt blockchain technology to keep accounts. If a transaction happens, everyone will record the deal in their own books. Because everyone keeps accounts and knows related information, the transaction can be confirmed by bookkeeping. All the people investing in Bitcoin do the accounting process, i.e., it is difficult to cheat. It is also considered that Bitcoin realizes peer-to-peer transactions separated from third parties by using distributed ledgers, not a single central ledger kept by a third party. As for the fraud costs, Bitcoin is extremely high because fraud detection occurs in real-time [16].

Considering the potentially serious financial threat to national security, Bitcoin is risky and dangerous because criminals and terroristic organizations abuse the Bitcoin system to raise money for their illegal activities

or do money laundering. As some counter-terrorist finance programs have made progress, terrorists have to look for other ways to finance their activities, namely the growing cryptocurrency market [17].

Here are three reasons for their choice. Firstly, the 'pseudo-anonymous' nature that Bitcoin has is favored by criminals. 'Pseudo-anonymous' nature means that if someone wants to get the relevant information about a Bitcoin transaction, he or she can only track to a certain computer or identify a certain public key associated with a user without knowing the sellers' or buyers' names in the real world. Secondly, Bitcoin transactions supported by Blockchain technology are peer-to-peer so that they can bypass the regulation sector. Besides, the Bitcoin transactions could happen across the countries nearly instantaneously and irreversibly, making criminals' raising more secretive. Last but not least, the current circumstance is that the creation and application of cryptocurrencies develop so rapidly that relevant policies, regulations, and law enforcement initiatives can not keep up with it. These characteristics and the fact interweave each other, which 'encourage' terroristic organizations and organized crime groups to exploit Bitcoin for terrorist financing, money laundering, and other criminal activities [18, 19].

5. CONCLUSION

In summary, cryptocurrency can hide user's private information very well, and it is hard to forge, which is safer than traditional currency. They are anonymous and convenient though they also have risks. Cryptocurrency has its own advantages and disadvantages, but the government monitors it, and many crimes use them for trading. Thus, we think countries can control them or absorb these cryptocurrency strengths and develop such a currency. As it is known to all, China has developed Central Bank Digital Currency, which is a good try. Based on the investigation of cryptocurrency, one can learn from its strengths and apply those strengths to ourself CBDC, making it much better. Since with the development of society, everything is internet-based, i.e., the development of currency is also very important. It can make our financial and monetary system stronger. In addition, this measure can reduce financial crime to some extent. These results offer a guideline for the understanding of Bitcoin.

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