

Do Cryptocurrencies Offer Benefits or New Challenges?

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Abstract: Cryptocurrencies have been controversial since their inception, and today there are more than a hundred types of cryptocurrencies. People can trade freely without the control of any person or organization. After a period of development, cryptocurrencies already have a large number of users. The high rate of return also makes people more accepting of cryptocurrencies. However, cryptocurrencies still have many problems. For example, there is a serious conflict between the infrastructure and philosophy of cryptocurrencies and traditional monetary systems. This article identifies the impact cryptocurrencies have on individuals, governments, and the environment. What benefits cryptocurrencies offer and what challenges they face are discussed from different perspectives. This article discusses these controversial points in detail, points out the possible future development trends of cryptocurrencies, and gives relevant recommendations in this regard.

Keywords: The cryptocurrency, finance, monetary system

1. Introduction

A cryptocurrency is a protocol for issuing digital tokens to people through digital technology within a specific range [1]. With the popularity of Bitcoin, cryptocurrencies became widely known. The emergence of cryptocurrencies will technically have varying degrees of impact on the economic system. For example, cryptocurrencies have the characteristics of decentralization and can operate without the intervention of any third party. The specific value of different economies in different contexts can be quantified, and even cryptocurrencies may become a unit of measurement in the future [2]. People have been exploring the uses of this technology and hope that it can be applied to daily work and life. In fact, the development of cryptocurrencies is still in its infancy, and its security and acceptance have yet to be improved. On top of that, cryptocurrencies can't really be fully used in people's lives right now. Most governments around the world do not recognize cryptocurrencies as having the properties of money, and most people just use it as a tool to make money [3]. Because cryptocurrency transactions are irreversible and difficult to trace, fraud or theft can be irretrievable. However, it is precisely because of this feature that the user's personal privacy is protected to a certain extent. In conclusion, whether cryptocurrencies actually advance society is still a matter of debate.

This article discusses the contributions and challenges of cryptocurrencies from three perspectives: individuals, governments and the environment. It shows that the emergence of cryptocurrencies has launched new challenges to the traditional financial system and monetary system. The government will face greater regulatory pressure. It is undeniable that although cryptocurrency investors are plagued by investment risks and security issues, the rapid growth of cryptocurrency market value still

attracts a large amount of investment. At this stage, cryptocurrencies have demonstrated their unique advantages in many ways. This paper argues that cryptocurrencies have great potential for development and can bring more economic benefits. In addition, the research depth of this paper on the operation mechanism of cryptocurrencies is limited, which is limited by the length of the paper. At the same time, the impact of cryptocurrencies is not only on the three aspects of individuals, governments and the environment, other impacts still need to be discussed in detail.

2. The impact of cryptocurrencies on people

This chapter discusses the impact of cryptocurrencies on people in terms of their market value and investment risk.

With the emergence of cryptocurrencies in recent years, more and more people have begun to pay attention to and invest in cryptocurrencies [4] [5]. Cryptocurrencies are making the financial system more advanced and efficient. The emergence of cryptocurrencies has brought people faster asset transfer capabilities, cheaper transaction costs, and no need for any third-party agency to act as an intermediary for transactions [6]. The market value of cryptocurrencies by 2021 is approximately \$625 billion, most of which comes from Bitcoin [7]. Bouri et al. even stated in a study that Bitcoin may become an alternative currency for state-issued currencies in the future [8]. However, the real market value of cryptocurrencies is less than 1% of global GDP [9]. Therefore, it is not yet certain whether cryptocurrencies can truly become an alternative currency for state-issued currencies in the future. Cryptocurrencies have shown a strong ability to grow in value, Lammer et al. stated in their research that Bitcoin's compound growth rate reached 1300% in 2017 alone [10]. A higher growth rate means more people will join the investment. According to the survey, due to the large price fluctuations of Bitcoin, most individual investors still show a conservative attitude towards the long-term holding of cryptocurrencies. However, the rapidly growing rate of return has made more and more people willing to invest in cryptocurrencies [11].

Cryptocurrencies carry higher risks for those who invest in them. There are many characteristics of cryptocurrencies, such as decentralization, irreversibility of transactions, anonymity, etc. These features seem to keep the property safe, however, there is also a huge risk involved. For example, anonymity makes investors unable to get their cryptocurrencies back after a cryptocurrency exchange goes bankrupt or is hacked, and also faces the risk of huge property losses [12]. The developers of the cryptocurrencies involved have made many security plugins to reduce the risk, which may allow the cryptocurrencies to function properly in most cases. However, Kadyrov & Prokhorov mentioned in the research report that even with the enhanced protection level, about \$200 million worth of assets are still stolen from crypto wallets every year [12]. The characteristics of blockchain technology and decentralization determine that cryptocurrencies operate completely independently, which makes cryptocurrency transactions lack legal protection [5]. At the same time, the irreversibility of the transaction will make it impossible to retrieve the defrauded cryptocurrency, which also means that the deceived crypto wallet owner will bear all economic losses. It is worth noting that although cryptocurrencies still lack legal support, there is evidence that judicial departments in some countries and regions are already trying to define cryptocurrency theft as a crime. For example, Zaytoun stated in a study that state legislatures and federal law enforcement agencies in the United States have adopted strict control measures against cybercrime, especially theft, and used the National Stolen Property Act ("NSPA") as the basic act to Address potential fraud and theft in cryptocurrency transactions [13]. While it is still uncertain whether such a bill would have an effect on reducing the risk of cryptocurrency investments, cryptocurrencies are supported to a certain extent by the law.

In fact, investing in cryptocurrencies does not necessarily mean facing higher risks. Research by Esmaeilzadeh, Hemang and Cousins shows that more respondents believe that cryptocurrencies have greater potential value than possible problems and systemic risks[14]. For example, anonymity

though there may be an issue of not being able to get back the cryptocurrency. However, in most common cryptocurrency transactions, anonymity protects the personal privacy of both parties and reduces the risk of the transaction. At the same time, a study of the population holding cryptocurrencies found that most of them are financially sound. According to Faria in a study on the cryptocurrency investment population, the majority of cryptocurrency holders are young men with relatively high incomes, who are more able to bear financial risks than those who do not hold cryptocurrencies powerful [15]. At the same time, Faria further concluded through research that good personal risk tolerance and more financial literacy increase the possibility of holding cryptocurrencies [15]. It is worth noting that the new crown epidemic has had a huge impact on the global economy, which makes the risk of personal investment in cryptocurrencies higher than before the new crown epidemic. This may make more people lose more money in the process of investing in cryptocurrencies, and it also puts forward higher requirements on the investment ability of cryptocurrency investors.

With the rapid growth of the cryptocurrency market value and more and more investors joining in, the issue of investment risk will be mentioned by more and more people. For this new investment field, most people report a cautious attitude, the higher returns and better market conditions make them still list cryptocurrencies as investable projects.

3. The impact of cryptocurrencies on government

This chapter will discuss the relationship between government and cryptocurrencies through four aspects of cryptocurrency transaction tax and traditional financial system and cryptocurrency regulation and trust issues.

Cryptocurrencies can bring benefits to governments. Increasingly government Taxing cryptocurrency transactions [16]. From this perspective, the government does not resist cryptocurrencies. According to Thiemann, the EU's total capital gains income from Bitcoin reached 12.7 billion euros, and the EU's potential tax revenue in 2020 alone should be 850 million euros [17]. Opening up new tax avenues is what many countries and regions prefer to see. More taxation is important to the EU at the moment, and 850 million euros is not a small income. If this part of the potential revenue is used to solve Europe's energy crisis, it may help the EU relieve some of the pressure from funding. In addition, the United States, Canada, Indonesia and other countries are also taxing cryptocurrencies [18]. It is worth noting that the way the government calculates the tax is questionable, because currently cryptocurrency transactions carry no information about anyone, which makes it difficult for the government to track revenue from cryptocurrencies [19]. To this end, the government needs an effective tax management policy, and at the same time, it needs to clarify the scope of tax payment. For example, in the scope of taxation, should the transaction tax generated in the process of trading cryptocurrencies and the income tax generated by individuals and businesses profiting from cryptocurrencies should be included? And how to judge the generation of these taxes is something that governments should consider next, and taxing cryptocurrencies is impractical until these issues are addressed.

However, cryptocurrencies have not necessarily brought more benefits to governments. The government is losing the traditional financial system while gaining more tax revenue. According to research by Kubát, governments should distance themselves from cryptocurrencies, for example: the Czech Central Bank stated that cryptocurrencies are not regulated by it, and also warned that the decentralized nature of cryptocurrencies could negatively affect fiat currencies [20]. The decentralization and anonymity of cryptocurrencies have created challenges that the law may not be able to address today [21]. In addition, Aggarwal et al. claim that market manipulation is likely to occur in the process of cryptocurrency transactions, which may easily make people lose their money. Because the cryptocurrency market is free and unregulated [22]. In fact, this is what the government

does not want to see, and it is not conducive to social governance. China has completely banned the circulation and buying and selling of cryptocurrencies and stipulated that the RMB is the only 'legally enforced currency' [21]. Nonetheless, there is no complete guarantee that cryptocurrencies will not have an impact on the yuan, which is unrealistic.

In fact, cryptocurrencies are not the only reason for the destruction of the traditional financial system. The shock of the financial crisis also makes the traditional financial system very vulnerable [23]. For example, after the 2008 financial crisis, many institutions like Lehman Brothers went bankrupt one after another, and even affected financial giants like Bank of America, JPMorgan Chase, and Citibank [24]. People gradually began to less trust in traditional banks, and there was a crisis of trust to varying degrees. However, the emergence of cryptocurrencies has largely solved people's trust anxiety. A more plausible approach is for governments to start trying to regulate cryptocurrencies, for example: the United States classifies some cryptocurrencies under the Securities Act, while both the U.S. Securities and Exchange Commission (SEC) and the Financial Crimes Enforcement Network (FinCEN) regulate cryptocurrencies. Incorporate regulation and treat cryptocurrency transactions as monetary businesses [21]. There is evidence that government regulation of cryptocurrencies has the potential to enhance institutional and consumer trust in cryptocurrency transactions [25], which can tax fiat currencies without threatening them. Of course, this idea still needs a lot of time to verify. While this approach seems feasible, it is worth noting that regulating cryptocurrencies is a very large and complex project, which may impose additional regulatory costs on governments [26].

Cryptocurrency and the government are not completely opposite. Cryptocurrency may bring more benefits to the government. For example, the legislation and control of cryptocurrencies can bring more tax to the government. However, a perfect solution is still needed. Regulatory system to operate, and even the government will add more additional costs.

4. The impact of cryptocurrencies on environment

This chapter discusses the impact of cryptocurrencies on the environment by analyzing the energy consumption and sustainable development capabilities of cryptocurrencies in the process of development.

Cryptocurrencies use energy efficiently. In the traditional impression, cryptocurrencies are not environmentally friendly. In fact, the vast majority of electricity used in crypto mining comes from renewable energy sources such as hydroelectric power [27]. From this perspective, cryptocurrency is a relatively environmentally friendly industry. While causing a small emission burden on the environment, the growing market value provides a steady stream of impetus for economic development. According to a research report by Stonberg, crypto mining plays an important role in saving energy by using excess electricity to prevent wastage of energy [28]. However, because crypto mining is working all day, this can put a lot of pressure on the local grid during peak electricity consumption. At the same time, after the excess electricity is used up, crypto mining still needs electricity to keep running, it will consume the extra electricity.

Cryptocurrencies are consuming a lot of energy. Cryptocurrencies do not appear to be contributing enough in terms of environmental protection, even though the vast majority of crypto mining uses renewable energy. However, there is still a part of crypto mining that still uses non-renewable energy, which has a certain impact on the environment, which may also become a bottleneck for the development of cryptocurrencies. More carbon emissions accelerate the rate of global warming, which largely goes against the idea of sustainable development. Egiyi and Ofoegbu stated that if the massive consumption of electricity by cryptocurrency cannot be reduced in the future, it may face the risk of global warming of 2 degrees Celsius [29]. From the perspective of energy consumption, many countries are skeptical of cryptocurrencies, and the high energy consumption characteristics of cryptocurrencies are out of tune with the current theme of green development. In a study on the

environmental impact of cryptocurrencies, Mohsin stated that the energy consumption of cryptocurrencies will even exceed the energy consumption of entire countries like Sweden and Malaysia [30]. In the future, if the market value of cryptocurrencies continues to grow rapidly, more energy will be used for cryptocurrencies. According to data, in just a few years, Bitcoin mining consumes 1% of global energy consumption, which is about 5 billion watts [30]. Excessive energy consumption will only make environmental problems worse.

In the short term, the development of cryptocurrencies may put considerable pressure on the environment. However, in the long run, cryptocurrencies may support sustainable development under high market enthusiasm. This has contributed to the growth of the economy in part as more and more people invest in cryptocurrencies. Economic benefits translate into environmental sustainability, while also driving social development [31]. Whether cryptocurrencies can bring greater help to the development of society is still an issue that most researchers are currently debating. The advantages of Bitcoin in energy consumption and environmental protection are obviously insufficient, whether Bitcoin can make up for these deficiencies in other aspects. Whether cryptocurrencies have the ability to create more value far beyond the cost of energy consumption is quite difficult to judge, and still needs more time to prove.

The impact of cryptocurrencies on the environment seems to be very worrying at present, which may not be in line with the concept of green development. How to maintain the sustainable development of cryptocurrencies is an issue that needs to be seriously considered. However, having a larger market and mature users is the future trend of cryptocurrencies, and more economic benefits will be transformed into a driving force for sustainable development.

5. Conclusion

To conclusion, the rapid growth in the value of the cryptocurrency market and the new decentralized transaction model have made people gradually realize that this is likely to be the next more efficient economic model. In the research of this paper, it is found that cryptocurrencies stimulate the development of the economy to varying degrees, bring additional taxes to the government and have the advantage of rational use of excess electricity. This shows that cryptocurrencies have great potential for development. However, the emergence of cryptocurrencies has also brought more new challenges. For example, issues such as transaction security, investment risk, excessive energy consumption, and even challenges to the traditional financial system. Evidence shows that there is still a lot of uncertainty in cryptocurrencies, and a lot of research is still needed. In this paper, the research on the operation mechanism of cryptocurrency is very limited, and more research processes are presented in the way of its impact. This article argues that the increasing use of cryptocurrencies means that more and more people are beginning to recognize its value. Since it is impossible to completely deny the value that cryptocurrencies provide, what can be done is to make them better regulated. What is uncertain is whether people will continue to use cryptocurrencies if they start to be regulated in the future. The correct use of cryptocurrencies enables them to promote economic development and even human development.

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