

The Existing Deficiencies of Virtual Currency and Its Possible Development Direction

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Abstract. The virtual currency market born from the blockchain is developing rapidly, and the market has reached a scale of hundreds of billions of dollars. Even some countries are trying to use virtual currency as the official currency. However, due to the limitations of virtual currency itself such as decentralization, the current virtual currency is not a good substitute for existing currency, and there are also illegal activities such as using virtual currency to launder money. This article will focus on explaining the main shortcomings of virtual currencies, the inadequacy of the trading market and its regulation, and the possible negative impact on the economy. And explore the possibility of future virtual currency development from two aspects: virtual currency adapts to the existing market and new market adapts to virtual currency. And finally came to two conclusions, large international companies or central banks can also develop virtual currency, so that virtual currency can adapt to the existing market to some extent. At the same time, the constantly developing virtual reality technology and the possible virtual world in the future may also provide a broad application space for virtual currency.

Keywords: Virtual market, Currency, Trading location, Credit guarantee

1. Introduction

A virtual currency, or virtual currency, is a digital currency that is largely unregulated and issued, usually controlled by its developers, and used and accepted electronically among members of a particular virtual community. At present, virtual currency has evolved into an increasingly important currency and commodity. The first and second bitcoin and ether have a market value of 160 billion and 20 billion US dollars respectively. And quite a few countries have begun to try to regulate and use virtual currencies, such as the encrypted tokens used in Estonia. However, a considerable part of virtual currency is still used for money laundering, tax evasion and other illegal activities, and it is even illegal to use and trade virtual currency in some countries. There are still many scams and falsehoods in the virtual currency market. Therefore, virtual currency and its related markets still need urgent research and planning.

Shin shows subjective norm is a key behavioral premise for the use of virtual currency through research on the intention and attitude of customers in Web 2.0 [1]. The overview of Abboushi shows that Bitcoin is the most prominent virtual currency. Virtual currencies are issued and exchanged without the backing of a sovereign government and without the need for a central registry. However, this special property makes virtual currency possible to help illegal users to carry out money laundering and other illegal purposes [2]. Irwin et al. proposed a self-refilling virtual currency model, which is used in Cereus, a computing marketplace for community resource sharing. The offline third-party auditing in Cereus can correct cheating, so participants can autonomously top-up and transfer currency without engaging in trusted banking services [3].

The research of Wang and Mainwaring shows how virtual currency is perceived, acquired, and used can significantly affect the behavior and experience of users. Virtual and real money can interact in complex ways to promote, expand or interfere the features and value of the virtual world [4]. Kevin and Meredith consider that relying only on existing laws creates a flawed regulatory system. The government should accept the characteristics of virtual currency, think globally about the problems caused by virtual currency and involve stakeholders to take part in [5]. Research by Kirillova et al.

explores the legal nature of virtual currencies, that is, there is no single understanding of the legal nature of virtual currencies around the world. Therefore there is no official fix for the legal status of such currencies and no official exchange rate. The study also recommends that by identifying customers when buying and selling virtual currencies, introducing special verification procedures for users, providing licenses for cryptocurrency mining and transactions at the international level to prevent the misuse of virtual currencies for money laundering and terrorist financing [6].

The research of Reddy surfaced that implementing uniform regulations would be more conducive to regulating virtual currencies, making it clearer for both service providers and users how to comply with the law. And clear regulation would provide much-needed protection for consumers [7]. Research by Wu et al. demonstrates that shared values and satisfaction among virtual community members can put positive influence on relationship commitment and trust, while privacy policies can significantly increase trust levels [8]. Research by Castronova et al. demonstrates that virtual economic behavior follows real-world patterns and that macroeconomic outcomes in virtual worlds may be largely explained by design structures [9]. Research of Park proves that perception of virtuality of consumers varies by transaction method, and when they have virtual currency for services, they will feel more virtual [10].

The second part of this article will revolve around virtual currencies and their current state. Then the third part will discuss the problem of virtual currency, that is, the disadvantages and limitations of virtual currency itself, loopholes in the existing credit and supervision mechanism, and the negative impact that virtual currency may bring to the real economy. The fourth part will discuss the possible development direction of virtual currency and its corresponding market, that is, virtual currency adapting to the existing market or existing market adapting to virtual currency. Finally, the fifth part will present the conclusion of this paper.

2. Characteristics of virtual currency

2.1 Main features of virtual currency

The generation and transaction of virtual currency represented by Bitcoin have three main characteristics. First, the chief press is decentralized, no country can control the transaction of virtual currency, that is to say, the free exchange of various currencies can be realized through virtual currency, and the transaction of virtual currency can easily avoid supervision. Secondly, because the virtual currency is not issued with the credit pledge of the country or the bank, the value is not guaranteed. Therefore, most virtual currencies are restricted from issuance to protect their value. Third, in order for virtual currency to have value, it needs to have a purpose.

2.2 The current application and market of virtual currency

At present, the main purpose of most virtual currencies is not to pay, but to participate in illegal transactions or to help exchange currencies in countries where currencies are not freely convertible. Because virtual currency has many advantages, such as no expensive manufacturing and physical storage costs, transactions can be completed +automatically, funds can be held and released without human intervention, etc. There are also some countries that try to incorporate virtual currency into the trading system and try to regulate it. For example, El Salvador designated Bitcoin as legal tender. In the process of using virtual currency and transacting in virtual markets, users use their private keys to control multiple addresses, or accounts, on the blockchain ledger. In each account, there will be digital assets belonging to the user.

2.3 Decentralized virtual market

Similarly, transactions in virtual markets are also evolving towards decentralization. With concepts such as the Metaverse and Web 3.0 being proposed, there are quite a few views that in the future there will be an advanced digital community that transcends reality, and that everyone can edit and build. Those who participate in these processes will also gain the ownership and rights of a part

of the community. In this way, the trading currency and trading community are decentralized and no longer rely on some individual institutions or governments. In the context of such transactions, everyone will have an address as a unique identifier. The value created by the individual in the community, the assets owned, and even all behaviors will be recorded in this unique address, so encrypted assets will be used to redefine and distribute the world's wealth.

3. Problems with virtual transactions

3.1 Disadvantages and limitation of virtual currency

First of all, if virtual currency is used as a medium for commodity transaction and circulation, the cost is too high. Take Bitcoin as an example. Because mining Bitcoin is too power-intensive, the cost of Bitcoin is far higher than other payment methods such as mobile payment and bank card payment. And as there are more and more bitcoins in existence, the marginal cost of mining new bitcoins will be higher and the mining time will be longer and longer. This will lead to a longer transaction time using Bitcoin, further increasing the time cost of the transaction.

Secondly, as a bookkeeping tool, the value of virtual currency fluctuates too quickly. In the process of world trade, especially the transaction of bulk commodities, the settlement currency must be stable in value. However, the virtual currency often fluctuates by 10% in one day, which makes the virtual currency cannot completely replace physical currency and perform all settlement functions.

Third, the liquidity of virtual currency also has great problems and limitations. Any currency that wants to be a medium of commerce in an economy must be liquid and have a supply commensurate with the size of the economy. But the supply of cryptocurrencies is limited, for example, there are only 21 million bitcoins. This will greatly limit economic growth.

3.2 Loopholes in the existing credit and supervision mechanism

First of all, encrypted digital transaction currency is anonymous, and each person's account is only a series of numbers generated by an algorithm, so the information of who holds the account and the holder cannot be known. This will lead to personal assets that cannot be recovered once stolen, and more seriously, some illegal institutions will use the anonymity of virtual currency to engage in illegal activities such as money laundering.

Moreover, the quality of the existing virtual currency in the market is also mixed. Not all virtual currencies have the same high quality and reputation guarantees as Bitcoin. Instead, most virtual currencies are just a cover used by scammers or are abandoned before they are issued.

3.3 The possible negative effects of the use of virtual currencies on the economy

Virtual currencies cannot regulate the economy. Central banks can help countries and other economies to regulate and control the macro economy. But if more countries or even the whole world use an encrypted virtual currency, Jinan will save it once the economy has problems. The central bank can not only regulate the financial crisis, but also control inflation, and even depreciate the currency to increase export competitiveness, all of which cannot be accomplished by the current encrypted virtual currency.

Virtual currencies can also pose a number of risks. As a decentralized currency, encrypted digital currency has no central regulatory agency. Once there is a problem with the system, or personal property is stolen, the loss is completely irreparable, because there is a lack of a strong central system to regulate. In order to limit the amount of currency to ensure value, the issuance of virtual currency tends to decrease, which will lead to people who provide computing in the early stage can easily obtain a lot of virtual currency, while those in the later stage are often difficult to obtain. As a result, most of the virtual currency is in the hands of very few people.

4. Solution

There are two possible directions for the development of virtual currency: let the virtual currency change and gradually adapt to the existing market or develop a new new market that meets the requirements for the use of the existing virtual currency.

First of all, if virtual currency is to adapt to the current market, it is necessary to solve a series of existing deficiencies of virtual currency. Virtual currency and its core technology blockchain are not necessarily decentralized, and centralization is also necessary. There is a fairly effective way to solve virtual currency delivery time, transaction costs and the security of trading venues, which is to issue centralized, non-decentralized encrypted digital currency by banks or large multinational companies, and transactions are directly in their cloud. computing center. The issuance of virtual currency by the central bank is most likely to solve the liquidity problem of virtual currency, and realize exchange rate regulation and even economic regulation through virtual currency. At present, a considerable part of banknotes are already virtual and electronic, which is similar to virtual currency. This may mean that the currency issued by the central bank does not conflict with the virtual currency issued by the algorithm. The virtual currency may not be to challenge the status of other currencies, and the central bank can also issue virtual currency by itself.

Another way to promote and improve virtual currency transactions is to innovate technology and create new markets. At present, the core technology blockchain of virtual currency has developed for three generations. The result of the first generation is Bitcoin, but there are also problems such as high cost and long time consumption. And the second generation of blockchain technology gave birth to Ethereum, people only need to verify the virtual currency without snatch, which reduces the transaction time. At the same time, the technology in this area has also upgraded the protocol model of virtual currency to make currency development easier. The third generation gave birth to new wealth distribution methods and new production relations. With concepts such as the Metaverse and Web 3.0 being proposed, there are quite a few views that in the future there will be an advanced digital community that transcends reality, and that everyone can edit and build. Those who participate in these processes will also gain the ownership and rights of a part of the community. In this way, the trading currency and trading community are decentralized and no longer rely on some individual institutions or governments. In the context of such transactions, everyone will have an address as a unique identifier. The value created by the individual in the community, the assets owned, and even all behaviors will be recorded in this unique address, so encrypted assets will be used to redefine and distribute the world's wealth.

5. Conclusion

This paper introduces the new currency virtual currency developed based on blockchain technology and its current situation. Although virtual currency is developing rapidly, it still brings some limitations and problems due to its decentralization and lack of effective supervision. The three most important points are that the existing currency cannot be completely replaced, and a large amount of virtual currency will be used for illegal activities and may have a negative impact on the economy.

But virtual currencies and markets are also adapting to each other, and there are currently two main directions. The first direction is to adapt virtual currencies to existing markets, such as virtual currencies issued by central banks and large corporations. The second direction is that the newly developed market will adapt to virtual currency in the future, such as the virtual reality market.

Future research can explore the main details along these two directions, such as what kind of virtual currency the central bank should issue, what kind of company is suitable for issuing virtual currency, and whether game currency is considered virtual currency. Or how virtual currency can be used through virtual reality.

References

- [1] Abboushi, S. (2017). Global Virtual Currency–Brief Overview. *Journal of Applied Business & Economics*, 19(6).
- [2] Castronova, E., Williams, D., Shen, C., Ratan, R., Xiong, L., Huang, Y., & Keegan, B. (2009). As real as real? Macroeconomic behavior in a large-scale virtual world. *New Media & Society*, 11(5), 685-707.
- [3] Irwin, D., Chase, J., Grit, L., & Yumerefendi, A. (2005). Self-recharging virtual currency. In *Proceedings of the 2005 ACM SIGCOMM workshop on Economics of peer-to-peer systems* (pp. 93-98).
- [4] Kirillova, E. A., Pavlyuk, A. V., Mikhaylova, I. A., Zulfugarzade, T. E., & Zenin, S. S. (2018). Bitcoin, lifecoin, namecoin: The legal nature of virtual currency. *J. Advanced Res. L. & Econ.*, 9, 119.
- [5] Park, D. H. (2019). Virtuality changes consumer preference: The effect of transaction virtuality as psychological distance on consumer purchase behavior. *Sustainability*, 11(23), 6618.
- [6] Reddy, A. (2018). Coinsensus: The Need for Uniform National Virtual Currency Regulations. *Dickinson L. Rev.*, 123, 251.
- [7] Shin, D. H. (2008). Understanding purchasing behaviors in a virtual economy: Consumer behavior involving virtual currency in Web 2.0 communities. *Interacting with computers*, 20(4-5), 433-446.
- [8] Tu, K. V., & Meredith, M. W. (2015). Rethinking virtual currency regulation in the Bitcoin age. *Wash. L. Rev.*, 90, 271.
- [9] Wang, Y., & Mainwaring, S. D. (2008). Human-Currency Interaction: learning from virtual currency use in China. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 25-28).
- [10] Wu, J. J., Chen, Y. H., & Chung, Y. S. (2010). Trust factors influencing virtual community members: A study of transaction communities. *Journal of Business Research*, 63(9-10), 1025-1032.