



Journal of Scientific Research & Reports
3(13): 1793-1797, 2014; Article no. JSRR.2014.13.007

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A New Form of Currency: Description and Economic Principle

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Author's contribution

This whole work was carried out by the author LG.

Short Research Article

Received 2nd February 2014
Accepted 8th April 2014
Published 29th May 2014

ABSTRACT

Faced with various banking and financial crises, many works are wondering whether the money itself is the real problem or not! In 2009, a system of decentralized currency was born. This decentralized electronic money (which is known as Bitcoin), uses cryptography to perform these transactions. Free of state control (or central bank or financial authority), this new form of digital currency raises many questions. The purpose of this paper is to study the semiotics of Bitcoin, through the discussion of whether it really solves the crucial problem of trust model or not. And highlight the problems and difficulties raised by Bitcoin. Our analysis shows that the Bitcoin digital currency based on the principle of peer-to-peer certainly highlights a number of significant advantages such as minimizing the maximum transaction costs and provides freedom of transactions without but it also eludes surveillance and that, beyond the resolution of the problem of trust model, this digital currency is not immune to a bubble, real issue of all banking and financial crises.

Keywords: Electronic cash system; cryptograph; payment; digital currency.

1. INTRODUCTION

Dated precisely the invention of money is a difficult task, but the development of the latter is bound, we know the difficulties encountered with the use of barter. The list of materials or services that have been used as a means of exchange is almost infinite. Over the past 20 years, currency has dematerialized. This dematerialization of money also named bank

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money now represents over 90% of the money supply. Bank money is made up of current accounts and checks of individuals; this bank money is evidenced by entries into account. Bank money flows in electronic form and can be transformed into paper money at any time. As one can understand, scriptural money is largely electronic. Faced with repetitive economic crisis, a new form of electronic money economic crisis has emerged. In effect against various banking and financial crises, good numbers of researchers are wondering whether the money itself is the real problem or not! In 2008, Satoshi Nakamoto [1], a computer programmer whose identity still remains unknown to this day, created electronic money, Bitcoin which is exchanged via the internet beyond the "traditional" control of a Central Bank [2]. The rapid development of Bitcoin is because of its appearance libertarians but also because the cost of the transaction is minimal [3,4]. Free of state control (or central bank or financial authority) this new form of digital currency raises many questions [5]. The purpose of this paper is to study the semiotics of Bitcoin, through discussing whether it really solves the crucial problem of trust model? And highlight the problems and difficulties raised by Bitcoin.

Without pretending to say whether the bitcoin currency is a form of revolutionary character, our research aims to develop reveal different aspects of this new virtual currency and enrich the current literature which is relatively weak on this subject. Can we classify bitcoin among existing fiat currencies? What are the costs and benefits of this virtual currency? Is the regulatory framework appropriate to this new form of currency? To answer these questions our study is based on the comparison between systems of electronic money and virtual money systems. Moreover, the existing legal frameworks on online payment systems are also analyzed.

The basic idea behind this digital currency (Bitcoin) is to create a digital good that is both rare and exchangeable on the currency market by using a mathematical algorithm [3]. Nakamoto [1] emphasizes that digital currency is based on a system that allows participants to develop a peer- to-peer network to obtain bitcoins in return for their contribution to computing resources. (That is to say, the network solution of complex mathematical problems) [6]. The bitcoins earned through this contribution are exchangeable and can be used in conventional financial transactions on an exchange network online. In order to control the value of bitcoin and limit inflation, Nakamoto [1] has designed its software so that the issue of bitcoins would decrease and their total numbers won't exceed 21 million. Instead deflation is even possible as a bitcoin is never used recirculated.

2. BITCOIN AND FIAT CURRENCIES

According to Mises [7], "Money is the thing that serves as a medium of exchange generally accepted and widely used. This is its only function. All other functions attributed to money are merely particular aspects of primary and unique function, that of medium of exchange".

If this definition of money is taken into account, electronic currency Bitcoin can be considered as a form of currency since it filled the main function of medium of exchange.

Bitcoin helps us understand the nature of money. Is considered as payment whatever is generally accepted as a medium of exchange. In this sense any type of medium of exchange is considered as a currency. The rapid development of Bitcoin suggests that-it has a strong potential to become a currency in its own right [8]. In 2013, nearly 11 million Bitcoins were in

circulation and were traded on a number of virtual market in this sense we can consider that the Bitcoin is a fiat currency.

Already in 1978 Friedrich Hayek [9] considered the possibility of a private fiat currency. According to Hayek [9] last even gold has value only because people give it value. According to Hayek [9] the challenge of fiat money is to keep its value stable against inflation. The issue of Bitcoins is decreasing and according to whose programmer cannot exceed 21 million bitcoins in circulation on the web; in sum seems to solve this difficult challenge of inflation.

As Nakamoto [1] points out, “Bitcoins are mined by computers at an Increasing cost in terms of computing power, cost and that will become infinite when, in a couple of decades, the number of bitcoins approaches 21 million. Then from there, the stock of bitcoins in circulation will be forever fixed, with no possibility of monetary inflation. Creating new bitcoins will be a mathematical impossibility.”

Lee [10] claims that the popularity of Bitcoin is especially effective in countries experiencing economic problems such as inflation. On the other hand Raskin [11] suggests that Bitcoin is mostly used in countries where economic agents wish to escape any monetary sanctions.

3. VERY VOLATILE PRICE!

Combined with speculation, the low liquidity of the bitcoin market makes it very volatile prices. On a typical day, a little less than 200,000 bitcoins are traded on Mt Gox which the largest exchange platform on the internet. Between early 2013 and mid-August, the value of a bitcoin fluctuated between \$ 13 and \$ 166. In relation to this, even gold seems stable. According to Forbes [12], the volatility of Bitcoin is related to the uncertainty of its value and its long-term existence. This combined volatility which is almost nonexistent in legal framework [13] discourages good numbers of speculators to invest in bitcoin. Indeed, according to a study conducted by Rubens [4], more than half of the exchange markets studied (N=18) were finally given up the exchange of Bitcoin. This volatility is not the only obstacle to the development of Bitcoin, since China banned the purchase of goods and services via a virtual currency in 2009 [14]. Also, in the end of 2013, the People's Bank of China has outlawed all the financial transactions that Chinese financial institutions made by Bitcoin [15].

Differences between the systems of electronic money and virtual money systems.

| Money format | Electronic money schemes Digital | Virtual currency schemes Digital |
|--------------------------------|--|--|
| Unit of account | Traditional currency (euro, US dollars, pounds, etc.) with legal tender status | Invented currency (Linden Dollars, Bitcoins, etc.) without legal tender status |
| Acceptance | By undertakings other than the issuer | Usually within a specific virtual community |
| Legal status | Regulated | Unregulated |
| Issuer | Legally established electronic money | institution Non-financial private company |
| Supply of money | Fixed | Not fixed (depends on issuer's decisions) |
| Possibility of redeeming funds | Guaranteed (and at par value) | Not guaranteed |
| Supervision | Yes | No |
| Type(s) of risk | Mainly operational Legal | credit, liquidity and operational |

Source: BCE [16]

Despite the fact that it is a “virtual” currency, Bitcoin operates in a payment system as a “real” currency; therefore, it faces such typical risks associated with “traditional” payment systems as follows:

- The credit risk. Users are exposed to credit risk with respect to funds held in virtual accounts because it can be guaranteed that the Provider is able to fully meet its financial obligations when they are due or at any time in the future.
- Liquidity risk. Users are also exposed to liquidity risk if the Provider does not comply with these commitments.

In this regard, the virtual currency systems are very illiquid due to low trading volumes.

In the case of security incidents, the conversion of land user’s real money would probably turn quickly without significant loss of value of the virtual currency Bitcoin.

- Operational risk. The payer and the recipient must be accountable to the Provider and; therefore, rely on the strength of its operations and business continuity.
- The legal risk. There are many legal uncertainties about virtual currency systems such as the lack of an appropriate legal framework substantially aggravates other risks [17].
- The lack of regulation: Unlike traditional payment systems, the virtual currency Bitcoin within which are not regulated.

In addition to the risks mentioned above, the absence of any authority raised many questions. First with this currency monetary policy is non-existent, something that could be devastating in the case of a currency crisis. Secondly, it could be grounds fairly favorable exchange any illegal activities. And finally only the “exchangeable” of this nature gives it the status of “currency” other than that nothing else this legitimate virtual currency.

4. CONCLUSION

The uncertainty surrounding these plans could be a challenge for the government as the lack of regulation and the “virtual” nature of the transaction (absence of any identity check since all financial transactions are anonymous) can prove to be an opportunity for fraudsters in their attempts to money laundering and other illegal activities [18]. In addition to these very real and specific problems, the failure of the system itself could jeopardize the existence of this “experimental currency” the bitcoin. The future of bitcoin is admittedly uncertain: Is it a simple fad or is this really the beginning of a new form of currency? Without being partisan or critic of bitcoin, it seems obvious and necessary that the government should clarify and regulate the “financial innovation which has a character”.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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