

The issue of competing currencies. Case study – Bitcoin

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Abstract. *The complexity and interdependence of the economies of various geographical and political entities have one generic binder - money. The economic history of the last century, replicated in the first decade of our century, can be “written” with money. Indeed, money, a multiple discovery of the civilization in its historical way, was and still is the guardian of hope for prosperity. The disputes about money clearly indicate the need, opportunity and the possibility of monetary competition, which would provide, from the point of view of entrepreneurs, the most suitable production of money based on expectations of their economic preferences. Increasingly more, theorists, practitioners and analysts bring to the fore the issue of simultaneously using the official currency and the digital one. Thus, the issue of the public debate regarding the private money is still of interest. Based on these considerations, this paper aims to highlight how the digital currency Bitcoin can meet the challenges of the economic environment, taking into account both the opportunities and the threats to which it is subject, and the records emphasized by the history of economic thought and adapted to the current reality.*

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1. Introduction

Throughout the centuries, the currency has been a topic of interest for both academia and the policy makers. The currency issue goes beyond time, it being the subject of numerous studies and regulations since the earliest times. In antiquity philosophers such as Xenophon, Plato and Aristotle tried to unravel the key issues concerning the value, the shape, the functions and the way currency circulates on the market; studies have advanced with the times (Dobrescu and Paicu, 2012), and economists have refined their theories, but the issue regarding the currency is far from being finally answered.

Nowadays, we are talking more and more in different geographical areas about using a new currency called Bitcoin, a few economists bringing again to the fore an essay that seemed long forgotten, *“Denationalization of Money-The Argument Refined: An Analysis of the Theory and Practice of Concurrent Currencies”*, written by Friedrich August von Hayek, Nobel Laureate in Economics in 1974.

In 1976, Friedrich August von Hayek started from an idea that emphasized the excess/deficit existing on the monetary market, showing that inflation and its socio-economic consequences are usually presented as being the result of the excess due to market, where the economic recovery measures require corrective intervention of the government. At that time, Hayek’s approach has given rise to heated disputes in academia and beyond, starting from the statements he made from the very beginning of the introduction: *“The further pursuit of the suggestion that government should be deprived of its monopoly of the issue of money opened the most fascinating theoretical vistas and showed the possibility of arrangements which have never been considered.”* (Hayek, 2006, p.7) Hayek argued that, in fact, it is a market gap created by the monopoly of the state over money, thus the solution would be the denationalization of money.

About the solution offered by Hayek there were a lot of discussions both within the Austrian School of Economics and beyond. Speaking about the essay of Hayek, Murray Rothbard argued that: *“The best known proposal to separate money from the state is that of F.A. Hayek and his followers. Hayek’s “denationalization of money” would eliminate legal tender laws, and allow every individual and organization to issue its own currency, as paper tickets with its own names and marks attached.”* (Rothbard, 2003)

The belief of Hayek that free competition between private producers of currency is the best way to achieve a healthy currency has generated a number of critics both outside and inside the Austrian School of Economics. Murray Rothbard himself claimed that: *“Hayek’s plan would have merit if the thing – the commodity – we call “money” were similar to all other goods and services. [...] There is a crucial difference, however, between money and all other goods*

*and services. All other goods, whether they be postal service or candy bars or personal computers, are desired for their own sake, for the utility and value that they yield to consumers. Consumers are therefore able to weigh these utilities against one another on their own personal scales of value. Money, however, is desired not for its own sake, but precisely because it **already** functions as money, so that everyone is confident that the money commodity will be readily accepted by any and all in exchange. People eagerly accept paper tickets marked “dollars” not for their aesthetic value, but because they are sure that they will be able to sell those tickets for the goods and services they desire. They can only be sure in that way when the particular name, “dollar,” is already in use as money. Hayek is surely correct that a free market economy and a devotion to the right of private property requires that everyone be permitted to issue whatever proposed currency names and tickets they wish. Hayek should be free to issue Hayeks or Ducats, and I to issue Rothbards or whatever. But issuance and **acceptance** are two very different matters. No one will accept new currency tickets, as they well might new postal organizations or new computers. These names will not be chosen as currencies precisely because they have not been used as money, or for any other purpose, before.” (Rothbard, 2003)*

Although it has long been criticized Hayek's view, considered a utopia, it has complied with stated belief to lead to the final task of the economist theorist: “...I strongly feel that the chief task of the economic theorist or political philosopher should be to operate on public opinion to make politically possible what today may be politically impossible, and that in consequence the objection that my proposals are at present impracticable does not in the least deter me from developing them.” (Hayek, 2006, p. 11)

Based on the controversies concerning the competition between the official and centralized currency and other private currency (regardless of how much trust would enjoy and regardless the favorable public perception), the financial and banking institutions, experienced users of the common currency, will not willingly accept to trade a virtual currency with zero transaction costs, but they cannot prevent people to prefer another method of making payments. Over time, an alternative currency made its place on the market, both in developed economies and emerging economies. The alternative currency circulated in different time periods in different geographic, physical or virtual areas. Below are listed a few such attempts.

- QQ – Chinese currency launched in a network on the Internet. After the advent and use of this currency in China was born a black market where the virtual currency was exchanged for the real one. In 2007 there were approximated transaction amounting of nearly 6.8 billion Yuan (one billion

dollars) realized with QQ. The Chinese government has intervened and in 2008 there were withdrawn large amounts of cash of the QQ market (*Business Magazin*, 2009).

- M-PESA used by Kenyans to change minutes into cash. The payment for an economic good is done by transferring a number of minutes to the phone of the cash register. Every day, through the M-PESA system there were made transactions totaling 10 million dollars, which means about \$ 3.6 billion annually (*Business Magazin*, 2009).
- Tem - a currency used from 2010 in Volos, a Greek port city. The established system implies people to use Tem units in order to exchange products, goods and services - cleaning, cooking, repairs, teaching, baby-sitting and technical assistance. The system has been improved, and the rate of exchange Tem/ Euro is at parity, as has always been since the beginning (Dumitru, 2013).
- Sano ('a currency for barter in Siros' worth an hour of work) - the inhabitants of the Greek island of Siros realize mutual exchange of services or products and digitally record the transactions (*The EpochTimes Romania*, 2012).
- "Peaches" - from the end of November 2013 in Montreuil, France, people are discussing about a new currency, which is a French way of ensuring that "transactions are not lost in the banking system" and the currency is meant "to promote the local trade". (Dumitru, 2013).
- "Bees" – in Villeneuve sur Lot they are used since January 2010, when a bee had the same value as an euro. Every six months, "the bee" was depreciated by 2%. (Dumitru, 2013).
- In Toulouse, beside euro it is used a currency called metaphorically "soil" (Dumitru, 2013).
- In Vaucluse, euro circulates alongside the "wheel" (Dumitru, 2013).
- In Romans-sur-Isere the French are using "the measure", in Angers - "the muse" and in Brittany there have been introduced "the Heol" (Dumitru, 2013).
- In Barcelona there are issued checks in "hours", used subsequently in order to purchase goods or services. The model called "time bank" has spread to other Spanish regions. "In Malaga, the system functions exclusively online. In Vilanova i la Geltru, the locals use a variety of credit card made of paper, which uses an alternative currency, accepted by just a few stores. Some cities have begun to accept the peseta again, these being the national currency before joining the euro zone; in the present context, the central bank in Madrid estimates that Spanish people still own pesetas amounting \$ 2.4 billion that they have not surrendered before the introduction of the euro." (Dumitru, 2013)
- In Mataelpino city and 10 other towns in the Sierra Norte region, people are paying with "moras" (blackberries). In the capital city of Madrid are also accepted "boniatos" (sweet potatoes) and "bivs"; in Bilbao "gitas" and in

Valladolid “neighbors”. In Sevilla were issued “jaras” and “cougars”, in Catalonia “the echoes” have spread and the Basque Country uses “eusko”. (Dumitru, 2013)

A special category of alternative currencies is the crypto-currency, which represents a digital currency being peer-to-peer, decentralized, whose circulation is based on the principles of cryptography to validate transactions and currency generation itself. Among the crypto-currencies currently used there are: Bitcoin, Litecoin, Peercoin, Namecoin, Novacoin etc. One of the most recent publicized such currency is the Bitcoin, which will be presented in the following sections.

2. What is the Bitcoin?

The digital currency called Bitcoin falls into the pattern of the private currency described by FA von Hayek, except the cyberspace in which it circulates. The Bitcoin was issued in the beginning of 2009 by an anonymous entity, working under the name “Satoshi Nakamoto” after the same entity in 2008 introduced the concept in a study.

Bitcoin uses a database, relying on 20,000 nodes of a network of peer-to-peer with the purpose of the inventory of transactions. Cryptography is used, so that the currency is very often called a crypto-currency. The goal of using cryptography is to provide the core of the security functions - Bitcoins can be spent only by the one who owns them and this thing can be done only once (Hall, 2013). The relationship between Bitcoin and a traditional currency is still not regulated; therefore, the responsibility for the way Bitcoins are circulating on the market lies to the economic agents who use Bitcoin.

The digital currency can be obtained by:

- The operation called “mining” - the personal computer is programmed to “dig” for Bitcoins. After the computer solves several problems, the owner will compete with other users to generate the number that the Bitcoin network is looking for. If the computer of the concerned person finds the number, then it will receive 25 at 10-minute period is generated every 25 Bitcoin. It should be noted the terminology used, which refers to the mining practiced in the heyday of the gold coin for its extraction. Also important to mentioning that the “mining” is quite expensive and involves the use of high performance computers, which use a lot of energy.
- Exchanging Bitcoins with real money, on the assumption that the rate of exchange is set based on the free meeting of demand and supply (Plassaras, 2013, p. 386). It should be noted that although Bitcoin does not have intrinsic value, over time, the exchange rate reached highs. Thus, in January 2013, one

Bitcoin was changed to \$ 20; on 10 April, the exchange rate reached 266 dollars and after three days it dropped to \$ 54 (Husler et al., 2012, p. 305).

- Exchanging goods Bitcoin newly generated (Hall, 2013). Currently/services for Bitcoin (Plassaras, 2013, p. 386).

The novelty that comes with the use of Bitcoin is a decentralized system, in other words there is no involvement of any central bank or of any government. The system was programmed so as to provide a limited number of coins in a certain time. It is expected, based on the generation algorithm of the Bitcoin that the total amount (21 million) provided by the system to be reached in 2025 according to some authors (Plassaras, 2013, p. 387), or in 2140, according to others (Hall, 2013).

In order to store the Bitcoins, a personal computer can be used, which will include a “wallet file” or the storage can be done using a service of the type “wallet” belonging to a third party. In both cases the money can be sent via the Internet to anyone with a Bitcoin address. In other words, Bitcoin is a smart scheme to make payments on the Internet without paying fees (for example, if you pay by card over the Internet, in our country the issuing bank charges the dealer with a commission of 1-2%, and in the USA 2 - 3%).

The currency has spread pretty quickly, today being already recognized and carrying out transactions in different countries. If in the early days of the existence of digital currency, a personal computer could occasionally get a few coins, nowadays the generation process is dominated by professionals who possess computers built in order to ensure an amazing computing power. At the price of 122 dollars on a Bitcoin, the 3600 coins generated daily are worth over 430,000 dollars. The whole “economy” of Bitcoin has a market capitalization of about 1.4 billion dollars (Urzică, 2013).

Bitcoin has acquired increasingly more ground in the real economy; the currency is accepted for payment throughout many sites such as Wordpress.com, Reddit or new file hosting service on the web Mega. The increasing number of users has been influenced by the advantages the cyberspace provides and by the diminishing trust in the banking system. For example, in Cyprus and in Canada were inaugurated ATMs through which real currencies can be exchanged for virtual currency (Abrihan, 2013). In addition, also in Cyprus was identified the first university in the world that accepts the Bitcoin for paying the university fees, its representatives stating that the strategy used is to immediately convert the alternative currency into Euro (Szoldra, 2013). In China, despite expectations, an increasing interest in using the Bitcoin can be noted.

In Germany, the Bitcoin is not classified as e-money or foreign currency, but is seen as a financial instrument subject to banking regulations, instrument from which the German government aims to gain by taxing the use of virtual currency

(Neroth, 2013). The fact that Germany has adopted the use of private money is interpreted as a safety measure taken in the event that the European single currency would not survive. Worldwide it is noted that a number of increasingly large businesses begin to adopt the new currency. Also in Romania there are merchants who accept the payment of services / goods offered with Bitcoin.

The fact is that in what is called human routine money bring together some of the most diverse interests so that private money could be preferred if it had the qualities of the official ones (trust, rarity, acceptability and inalterability, manageability etc..) and if in addition to these, private money would provide full respect for property. The scientific and practical message of private digital money correlates the rigor and pragmatism with the advantage of high technologies in the production and processing of information, and Bitcoin or howsoever called digital currency, could be viewed as the most suitable means of payment.

3. Advantages of using Bitcoin

F.A. von Hayek asserted about the capacity of the private currency to compete with the currency issued by the state that has a number of advantages that can ease its existence on the market. The Nobel Prize Laureate for Economics argued that:

“a) a money generally expected to preserve its purchasing power approximately constant would be in continuous demand so long as the people were free to use it, b) with such a continuing demand depending on success in keeping the value of the currency constant one could trust the issuing banks to make every effort to achieve this better than would any monopolist who runs no risk by depreciating his money,

c) the issuing institution could achieve this result by regulating the quantity of its issue.

d) such a regulation of the quantity of each currency would constitute the best of all practicable methods of regulating the quantity of media of exchange for all possible purposes.” (Hayek, 2006, p. 41)

Starting from the advantages of the private currency, listed by Hayek, we will try to highlight the strengths of Bitcoin.

- The digital currency does not require the physical presence of traders for a transaction, therefore the use of Bitcoin saves a lot of time for those involved (Plassaras, 2013, p. 387).
- Transactions can be done anytime and anywhere, providing business flexibility.
- Issuance expenditures are prevented, as well as the costs of transportation, storage and security which arise when putting traditional currency into circulation. Annually in the USA there are spent about 60 billion dollars for such activities (Plassaras, 2013, p. 387). In addition, bureaucracy is avoided for the money issuance (Frâncu, 2011).

- Facilitates transactions anywhere in the world, thus avoiding costs related to foreign exchange trading. It is enough to possess a quantity of Bitcoin to perform operations in Japan, USA, France, etc.
- It has the same qualities as gold, simulating rarity very well. In order to produce a Bitcoin, equipment and power are required, and the amount of Bitcoin is limited to 21 million.
- Do not assume the payment of commissions that banks typically charge. Transfers are facilitated directly without using a payment processor between nodes. The Bitcoin client transmits the transaction to the nearest nodes which in turn propagates the transaction in the network. Corrupt or invalid transactions are rejected by honest nodes. Transactions are usually free, but a fee is likely to occur in the case of other nodes for the prioritization of transaction processing.
- Bitcoin use does not generate inflation. It is well known that limiting the money supply can be seen as an advantage in fighting against inflation (Burghelea, 2008). The total amount of money supply consisting of Bitcoins was determined by using the technology of generating exactly 21 million.
- It keeps the anonymity of businessmen involved in the transactions, for those interested in this aspect.
- Answers a natural human need - impatience, the speed of Bitcoin transactions being high and giving the operators the opportunity to swiftly conclude their operations.
- It is not subjected to central bank intervention generating trust for a particular category of individuals due to the lack of government intervention on the exchange rate.
- The use of the virtual environment can be an incentive for some people in order to improve the use of different types of software.

The digital currency thus involves a number of advantages, not to be neglected, but their evidence does not rule out the threats and disadvantages brought by the crypto-currency.

4. Disadvantages of Bitcoin circulation

Like any other currency in circulation, the crypto-currency raises a series of questions about its ability to upgrade disadvantages and associated dangers. Among them we can mention:

- The excessive volatility. In a normal day on Mt. Gox are exchanged approximately 200,000 Bitcoins. A study shows that from the beginning of 2013 until mid-August, the value of a currency fluctuated from 13 dollars to 166 dollars (Lemieux, 2013, p.14). A recent analysis of the Mt. Gox site shows that in the last part of 2013, Bitcoin fluctuated more spectacularly, as can be seen in the chart below.



- The transactions with Bitcoin are preserved and are public, which means that everyone has access to the number and size of transactions from any address in the network, without having the possibility to associate the address with the real name of the person who made the transaction. Therefore, it is recommended that with each transaction the user should use a new address in order to keep the anonymity.
- Transactions are uncontrollable. As long as Bitcoin transactions are made between accounts, authors remain anonymous. There is no central authority to be able to authorize Bitcoin transactions and to keep track of them.
- If Bitcoin or any other private currency will be used widely in the global trade, its use in speculative attacks can generate large negative effects, as an international body such as the IMF can not intervene, because it is not outlined the legislative framework concerning this area.
- Limited confidence in Bitcoin, caused mainly by incomplete information, is a drawback, but not a major impediment. In fact, the events of the last few years which have shaken financial markets are more likely favorable to the competing currencies like Bitcoin.
- Increased vulnerability caused by the use of the online environment. The security breaches can lead to the loss of the savings in Bitcoin. If Bitcoins are lost or stolen there is not an intermediary institution to reward loss. The concern about this issue is quite high, due to the fact that the on BIPS was stolen the digital currency equivalent of \$ 1 million (The Economist, 2013, p.11).
- Significant initial investment and electricity generation costs for people who currently use Bitcoins (purchase of performing equipment and of software needed to use).

- The Bitcoin is held responsible as it is used in illegal activities - encourages gambling, tax evasion, terrorism, facilitating transactions with goods prohibited by law (drugs, weapons). This is why the American Treasury announced that in the case of the digital currency it will apply the rules concerning money laundering. The Department of Financial Services in New York has sent subpoenas to several companies associated with Bitcoin, within a broader investigation concerning their practices. IMF and the Department of Homeland Security-DHS conducted some investigations themselves. In Canada, the Virtex online market through which people trade Bitcoins, running more than \$ 13 million, has been closed by the Royal Bank of Canada, through which those transactions were made. Meanwhile, bank dealers in Canada have begun to announce that virtual markets “cannot work”. In addition, Thailand authorities took measures in July 2013 to ban the use of Bitcoin (Mutar, 2013).
- In the USA, question marks were raised following the fact that the currency has been involved in a Ponzi-type fraud - a Texan created a pyramid scheme, which he promoted through a fund investment - “Bitcoin Savings and Trust” (dailybusiness.ro, 2013). Also, it was the currency used to facilitate the transactions made through the website Silk Road, closed by the FBI in October 2013 due to the fact that through this site drugs were bought and sold (Moore, 2013).
- A growing number of people identify in Bitcoin a currency that can help them avoid the taxation of the savings in various states. Based on this, one can observe that it is possible for the authorities to give up the attempts to create a legal framework for Bitcoin and look for ways to remove it from the market.
- Bitcoin generates some panic among bank representatives, because it competes with the traditional currency and therefore with a certain type of banking products. The cost of web transactions with Bitcoin is much lower than the fees charged by banks.

5. Instead of conclusions

Bitcoin is a case of how life knocks books! Basically, Bitcoin is like gold, but in a virtual environment. I mean, you know from the very beginning that you have a limited amount of Bitcoin which you need to exploit henceforth; exploiting it costs you, but you know that Bitcoin is unalterable. The remaining people have to buy with cash from those who have Bitcoins, so there are quotations against the dollar or other currencies. The novelty of the method to create money without diminishing their value lies in the competition that Bitcoin generates concerning any financial institution. The question that arises frequently in the case of some economists is related to the ability of the private currency to survive. The history has shown that man has the capacity to find ways which can “avoid” various kinds

of prohibitions, thus being able to find alternatives to the traditional currency. Whether talking about Bitcoin or any other alternative currency it can be easily seen that the individual has found a way to ensure the existence and simultaneous circulation with the traditional currency in different historical periods. Is it Bitcoin that particular private currency which will have the longest life? And if so, how long will it run in parallel with the traditional currency? Will Bitcoin have the ability to benefit from a higher degree of confidence than the present one starting from the backdrop of the growing discontent generated by numerous imbalances occurring in the economies of different states? Will Bitcoin overcome the numerous obstacles listed in the present paper?

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