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CRYPTO-CURRENCY PEERING AS AN INVESTMENT INSTRUMENT

Summary: Crypto-currency is characterized best by its main features – decentralization and the absence of a single issuing house. The absence of financial regulations from the government and central bank has led to an exchange-rate formation mechanism of digital money built exclusively on demand to offer correlation. The anonymity of payments within a peering network makes the identification of transactions' participants impossible. All this leads to considering a crypto-currency as a possible investment instrument, despite all the risks entailed by digital money.

Keywords: peering network, torrent-network, transactions, crypto currency system, electronic payment systems, BitCoin.

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1. Introduction

Peering electronic payment systems attracted attention due to the search for an alternative to the existing monetary system which is characterized by a string of drawbacks: uncontrolled emission, over-encumbered liabilities, the absence of a gold guarantee (or any guarantee whatsoever), sudden currency interventions and their integral part – currency speculations. Hence there is a search for a model which would have a substantially lesser impact from politicians and financial regulators on finances, compared to the model being in use at the present time. This search leads in the direction of crypto currencies which do not have a single emitting center. The BitCoin system is the best known from among the crypto currencies. It was developed in 2008 by an anonymous programmer (or a group of programmers) who worked under the pseudonym Satoshi Nakamoto.

2. Difference between Fiat money and crypto currency

What is the core difference between Fiat money (the decree money) and crypto currency? It is generally known that actual currency's volumes are regulated

by emitting centres which, in theory, purposes to regulate a sufficient and harmonic flow and goods and services exchange on the territory controlled by such an emitting centre. In the real global world, the situation has become more complex: whenever the money of one country goes on the market of another country it means in theory that the first country should have received actual goods for the amount of that money. At the same time, if the pricing policy for the goods and services is also in the hands of the first country, it gives this country the opportunity, through emission or extraction of the currency from its market share in the other country, and through buying out goods in the other country, to be discriminatory against the other country. The country which does not control prices on the goods markets and domestic currency market is unable to prevent the legal (!) export of real values. Moreover, inflation usually has a non-uniform structure – real estate prices change more slowly than prices for goods and commodities, and even more slowly in comparison to the prices for production (which suffer from inflation mostly due to long-lasting production cycle and multilevel processing involved).

3. Crypto-currency peering being an investment instrument. Prospects and risks

The use of a decentralized financial system guards against the above-mentioned drawbacks. A crypto money system is free from regulators and controlling bodies. Even the developer of a peering financial system does not have the functions which a central bank has. An algorithm of BitCoin is given once and for all time in the virtual constructor which was created in the first place. The peering network (analog of torrent-network) makes it impossible to control any transactions. No identification is needed in order to make transactions (even illegal) in such a system. The encrypted protocol which makes up the base for BitCoin work does not allow the identification even of the IP-addresses of the participants of the transactions. The idea behind the peering network where one global task is divided into many pieces which are simultaneously processed on thousands (or hundreds of thousands) of less powerful computers of network users helps facilitate and speed up enormously large volume of computations which would have taken dozens of years to handle even for super powerful computer. The divided computations performed by lower-powered host computers is a particular specific feature of peering networks. The absence of a single server allows for the decentralization in network management. The more users subscribe to the network, the more powerful and quick it becomes. For the sake of truth it should be mentioned that the networks do have analog to a server (torrent tracker), but it is responsible only for the organization of connections between the participants and it does not transfer the information files.

The entire crypto currency system is built on the involvement of as many local computers in the network as possible. Such “host” computers perform computations of certain mathematical tasks which add a puzzle in the organization of entire system

and support its functioning. Such tasks are called hash-functions and they ensure the stability of the whole system. It allows to control transactions, and therefore provides BitCoin with antifraud protection. Hash is a certain sort of electronic digital signature under an agreement which, once formed, is checked many times by the other participants of the so called generation. Moreover, as a result of the computation of such tasks, the owner of the host receives BitCoin's coins.

The coins received by the generator of successful hash are a premium and an emission at the same time. Every time the next step in computations over large numbers leads to intermediate success (the appearance of "short" value of hash-function with some number of zeroes at the beginning), the system pays out some portion of 50 coins. This amount is allocated between the participants of the process proportionally to the input of each participant whose computer was involved in the processing of this task. There are only 25 new BitCoins appearing in the Internet every ten minutes. It is important that the appearance of new BitCoin coins has no ties with the existing goods and services on the market. It is like production without production relations – computers work – you rest. The original algorithm envisages a volume limit for BitCoin of up to 21 million. The schedule for crypto money issue is provided in Figure 1.

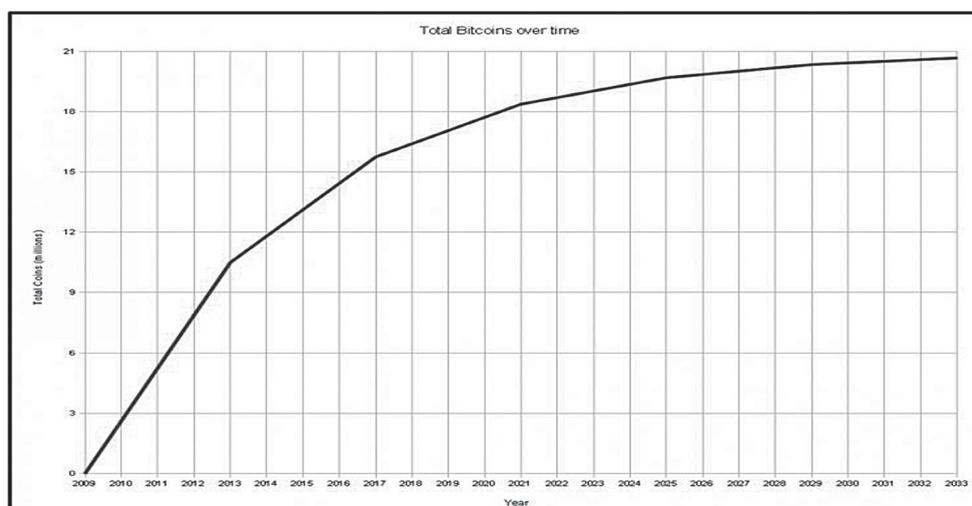


Fig. 1. Schedule for crypto money issue BitCoin

Source: <http://ru.wikipedia.org/wiki/>.

The above schedule for the emission in question cannot be changed by any means: if switched to an additional power network, the "farming" of coins will drop proportionally to compensate the efforts of the BitCoin community. Such a method creates "real value" for BitCoin. Instead of common gold or product standard, the

development of the real value of the system is balanced by the limit of the world's computing power points. The value of BitCoin is artificially created by the limitation in number of such computing power points.

In order to receive BitCoin there is no need to rent out your own computer's power. Instead, you can do it through the sale of goods or services in the Internet and the use of BitCoin as a payment instrument in your transactions, or buy ordinary dollars at one of the countless exchange markets (for example, MtGox) which deal in exchanging electronic money into real money and vice versa.

The exchange rate of crypto currency is regulated only by the demand to offer correlation. Given the fact that the demand for this currency is growing very quickly, it causes significant fluctuations in the exchange rate. It should be mentioned that the scale of the vertical axis is non-linear. As can be seen from the graph, the exchange rate of BitCoin grew over 100 times in less than three years. It is hard to find another asset with such positive dynamics in growth. As long as the number of users grows and the system matures, the fluctuations will level off in their amplitude. It should be mentioned that the scale of the vertical axis is non-linear. (Figure 2).

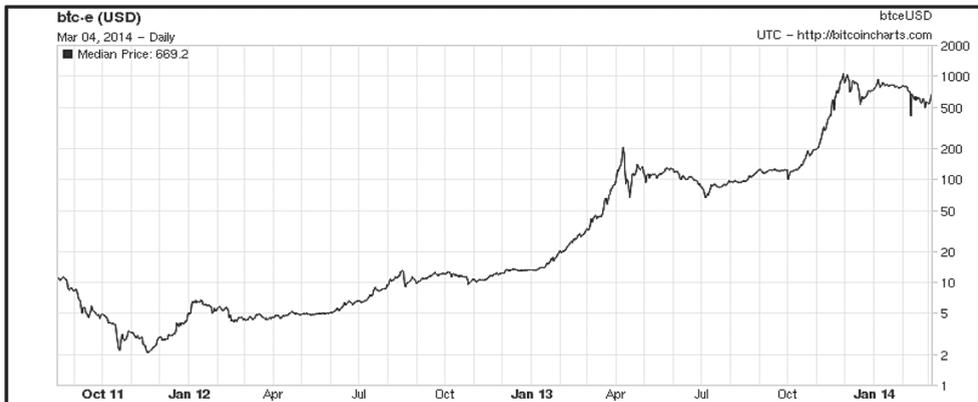


Fig. 2. The dynamics of the exchange rate of BitCoin

Source: <http://ru.wikipedia.org/wiki/>.

Such fluctuations also lead to certain risks. BitCoin's risks lie in the predetermination of the fixed schedule of its emissions, whilst real life is changing in its volatility and unpredictability which reflects on the money flow. To exemplify this let us trace the factors that have been influencing the oil price (and the money flow subsequently) over the last 30 years (Figure 3).

Economic, political and speculative reasons are factors accountable for its change. Fluctuations on the exchange rate feeds speculators who earn on the ups and downs of the fluctuations, while they are not producing anything, not creating any value, they just participate in the redistribution of the money by cutting off their share from the others.

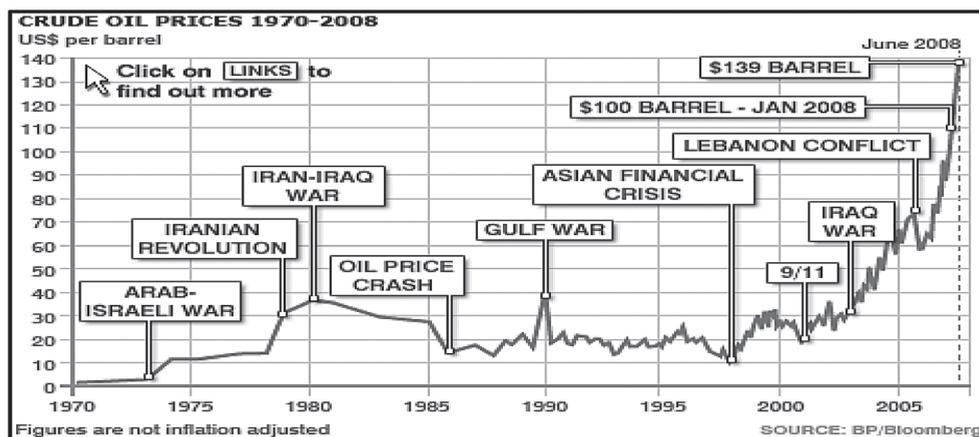


Fig. 3. Dynamics of the price of oil over the last 30 years

Source: <http://coinspot.ru/news/mark-andreessen-verit-v-bitkojn/>.

In theory, buyers spend their money when they purchase actual goods from a seller who expended some effort and resources on creating such goods. The sellers receive money. In the case of BitCoin – crypto money. That is the sellers receive anonymous currency with a fluctuating exchange rate, and they should try to make a profit and not to make a loss. If they are lucky enough to get rid of this crypto currency by buying something with a real value – they win, if not – they lose. Under such circumstances (also considering the possibility of crypto currency’s devaluation by means of a conspiracy among the sellers) it makes trade in such a currency very risky. Whenever there is a temporary reduction in the number of agreements within BitCoin itself, there is an immediate slump in the exchange rate of about ten percent. When a subdivision of the Chinese Internet company Baidu stopped accepting payments in this currency, the value of crypto coins slumped by 13%. Sharp fluctuations in the exchange rate are more possible than ever because the demand is high and continue either growing or staggering, while the offer is relatively less because none of the users can make an “additional emission”.

It should be remembered, also, that the government of any country in the world at any moment can prohibit the use of the system. Such crypto currency has already become prohibited by the authorities of Thailand, despite the fact that there are two electronic exchange markets working with this currency for exchange and buying operations – Bahtcoin and Coinmill. The People’s Bank of China has prohibited financial institutions of the country to perform any transactions with Bahtcoin. Local companies are even forbidden to quote crypto currencies and insure financial products connected with it. If all the exchange markets refuse to accept crypto currency to exchange it for real money, the system will be destroyed.

The BitCoin system has another “delayed-action bomb”. It is the cost of a single transaction. Today it costs only 0.0001 ฿ , or in other words one ten thousandth of a BitCoin. Is it too much or too little? The USD velocity in 2012 concluded to 44.3 times per year. In many ways this is connected to the fact that a considerable share of the total volume of USD is being used particularly in electronic currency trade, flowing through a much greater number of transactions than “simple” currencies. According to some estimations, a purely trade, or transactional currency will have a velocity of about 100 times per year. Today this value for BitCoin concludes to USD 1242 for one ฿ . This means that the cost of a single transaction already has been approximately 12.4 cents. The number of transactions per year should also be taken into consideration. The commission for every transaction is charged by a host in the peering system which handles a particular transaction. It is not difficult to compute that BitCoin will “eat” itself in nearly 100 years (and actually even quicker because the commission charge reduces the number of “free” BitCoins in the flow). In the absence of “printing” new money, the entire amount of BitCoin charged in commissions will accumulate on hosts of block chain. Of course, block chain hosts are live individuals and can spend BitCoin to support the flow. However, the situation is always the same: in cases of unequal exchange and commission being charged only by hosts, the system comes round to creating the same bankers with the only difference that they capitalize on the crypto money flow instead of a bank interest rate. Moreover, they capitalize in on the monopoly in the same way as Fiat money’s owner does.

Other questions have to do with the vulnerability of the block chain hosts. In 2013, the transactions database file accounted for over 13 gigabyte of disk’s space. Those transactions accumulated at the time of start-up and the emergence of BitCoin in the relatively slow period of 2009-2013. What will happen next with BitCoin is hard to predict. Today it is already impossible for every host in the network to hold a complete database of transactions, which is why a “light” client is required to check only last few transactions, and as far as the whole history is concerned – it trusts “full cycle” clients. Should the user try to use BitCoins already spent, the system will deny such a request and qualify it as ineffective. However, there can be some transactions in parallel chains of blocks which can spend the same original money differently.

4. Conclusions

The possibility of such parallel chains of blocks is poor, and even so it decreases exponentially with the growth of the length of chain and the number of independent Miners/Farmers. This means that the more authorizations any transaction has, the less possible the rejection of the transaction due to dying out of its chain of blocks.

Therefore, given a transgressor has control over a considerably large share of Mining’s power assets, there is a possibility that he/she can build long parallel chains of blocks. If they get to be published, the longest will be recognized by the network

to be the main. The cancellation of the chain of blocks can lead to the recognition of the rest of the transactions as ineffective, including those that have been confirmed by several blocks, and the further loss of money.

All this demonstrates that the absence of a single emitting centre does not protect from the risks. A financial system based on a crypto currency needs further development.

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PEERING KRYPTOWALUTOWY JAKO NARZĘDZIE INWESTYCYJNE

Streszczenie: W artykule zaprezentowano narzędzia peeringu kryptowalutowego jako sposobu inwestowania. Narzędzia te zostały następnie porównane z tradycyjnymi metodami inwestycyjnymi. Jednocześnie w artykule wskazano na niebezpieczeństwa i korzyści związane z walutami wirtualnymi.

Słowa kluczowe: kryptowaluty, inwestycje.