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PROSPECTS FOR THE DEVELOPMENT OF
CRYPTOCURRENCY IN RUSSIA. FROM BITCOIN TO
ETHEREUM

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Abstract

This article presents prospects of the development of cryptocurrency in Russia, examines the principles of the operation of Bitcoin as main currency nowadays and its application in the real economic sector. Identifies and substantiates the advantages and disadvantages of this technology, as a result, the degree of influence of cryptocurrency and the consequences of its usage in the Russian economy. At present, over 1000 types of cryptocurrencies exist. In this paper, two of them are analyzed: the first cryptocurrency, the leader with the stabilized volatility and price: Bitcoin, and rather a new application for cryptocurrency which was skyrocketed as the second world popular: Ethereum. In this research paper we set an objective to compare Bitcoin and Ethereum, determine problems of cryptocurrency market in Russia and the prospects for development of their usage. In addition, authors are describing history of the research subject and trends to develop: from Bitcoin to Ethereum evolution.

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Keywords: Bitcoin, cryptocurrency, development of the cryptocurrency, Ethereum, evolution of cryptocurrency, historical trends.



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1. Introduction

There was always a common idea that technology is the future wave. Obviously, the appearance of the cryptocurrency market can be assigned as a perfect example of such an opinion. The global financial crisis of 2008 led to the decreasing confidence in the industry of financial services due to the unsafety of traditional money, banks and government economic policies. Despite the fact, that today's world has recently encountered rather a new product – cryptocurrency, its popularity is sharply increasing, and the cryptocurrency market is already highly developed.

A cryptocurrency is determined as “a digital asset that is constructed to function as a medium of exchange, premised on the technology of cryptography, to secure the transactional flow, as well as to control the creation of additional units of the currency” (Yarushev & Averkin, 2017, pp. 848-853). This type of the currency is not issued by any central authority, in other words, there is no any government interference or manipulation during the process of functioning of the cryptocurrency market. Cryptocurrency allows people to make transactions, which are simplified by usage of public and private keys for security purposes, in a better way: users of cryptocurrency are able to get rid of high fees arrived from the use of the most banks and other financial institutions for wire transfers whereas minimal processing fees are required for making fund transfers in a cryptocurrency.

2. Problem Statement

At present, over 1000 types of cryptocurrencies exist. In this paper, two of them are analyzed: the first cryptocurrency, the leader with the stabilized volatility and price: Bitcoin, and rather a new application for cryptocurrency which was skyrocketed as the second world popular: Ethereum. In this research paper I set an objective to compare Bitcoin and Ethereum, determine problems of cryptocurrency market in Russia and the prospects for development of their usage.

3. Research Questions

To summarize, it is necessary to mention that unlike in centralized economic and banking systems, where government and Central Banks control money supply (by money issue), cryptocurrency exists in a decentralized system, which excludes any kind of outside influence and which is based on the underlying blockchain technical system, created by the group of people or individual known as Satoshi Nakamoto.

4. Purpose of the Study

The main purpose of the study is to present prospects of the development of cryptocurrency in Russia, examines the principles of the operation of Bitcoin as main currency nowadays and its application in the real economic sector. Identifies and substantiates the advantages and disadvantages of this technology, as a result, the degree of influence of cryptocurrency and the consequences of its usage in the Russian economy. At present, over 1000 types of cryptocurrencies exist. In this paper, two of them are analyzed: the first cryptocurrency, the leader with the stabilized volatility and price: Bitcoin, and rather a new application for cryptocurrency which was skyrocketed as the second world popular: Ethereum. In

this research paper we set an objective to compare Bitcoin and Ethereum, determine problems of cryptocurrency market in Russia and the prospects for development of their usage.

5. Research Methods

The authors use the following three approaches for evaluating the level of cryptocurrency importance in digital economy of Russia:

5.1. Straightforward experiment - the standard practice of changing variables to generate statistically analyzable data;

5.2. Expert methods of evaluation - working-out an experiment and collection quantitative data; measurements are made by the ordinal or interval type;

5.3. Observation – the researching of facts or situations in economy without interfering too much.

6. Findings

Satoshi Nakamoto is famous for creating the first decentralized currency Bitcoin (BTC) in 2009. Having become the most widely used and known cryptocurrency, it was originally invented as a strictly peer-to-peer electronic payment system and a solution to the problem of double-spending (Akhmadeev & Manakhov, 2015), for eliminating unnecessary time and cost, charged by multiple trusted third parties to facilitate transactions. Bitcoin allows to make an anonymous and secure transaction without any need for trust due to a public ledger and digital signatures, which provide validity of transactions. Moreover, this cryptocurrency is based on circulating in mining, which is the process of adding transaction records to Bitcoin's public ledger of past transactions or blockchain. Miners make transactions complete and receive Bitcoin for this work. This cryptocurrency is founded on a proof-of-work system, which requires solving of very complex mathematical problems in order to create blocks and add them to the blockchain. The current reward for 1 block is 25 Bitcoin; this reward halves every 210,000 blocks. The next halving is expected to take place in 2020. However, there is a finite amount of 21,000,000 Bitcoins that will be created. Despite the fact that due to its proof-of-work basis Bitcoin improves security and validity of transactions, can be highlighted two problems. The first one is arrived from the use of big amounts of energy for the functioning of a mining-process, in its turn; the waste of energy is able to influence the environment negatively. The second, more important problem is connected to the absence of any motivation among miners to collaborate with each other; moreover, there are no any consequences, foreseen for a malicious behavior. Having made a brief analysis of Bitcoin, let us characterize Ethereum and show its differences from Bitcoin.

Ethereum, created by Vitalik Buterin in 2013 and launched in 2015, is “a decentralized platform that runs smart contracts: applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third party interference” (Veynberg, Timofeev, Popov, & Bortsova, 2018, pp 163-169; Timofeev, Bayandin, & Kulikova, 2018, pp 163-169; Harm, Obregon, & Stubbendick, 2016, p. 38). While Ethereum was launching, ether (cryptocurrency behind Ethereum, ETH) was initially offered. Similar to Bitcoin, additional Ether are issued during mining process, the reward per 1 block amounts 5 Ether, and this number never halves, it remains the same. In addition, contrary to Bitcoin,

Ethereum is not bounded with a maximum total number of Ether. Time, necessary for putting a block in Ethereum, is 14 seconds, whereas in Bitcoin it is 10 minutes. Moreover, Ethereum's willing to change a proof-of-work basis into proof-of-stake is a good solution to the problems about malicious behavior, noted above. In terms of a new system of functioning without solving difficult mathematical problems, validators of transactions have to put their owned ether as a special value for certifying the validity of a block, in other words, in this case, contrary to Bitcoin miners, validators have something at stake, which will eliminate the idea of malicious behavior. There are also other advantages in using the proof-of-stake system. Instead of being rewarded for creating blocks, validators will receive a transaction fee for validating each transaction or smart contract. This will lead to efficiency in using energy by focusing on the bandwidth traffic, not on hash rate (number of calculations per second). In addition, the proof-of-stake system stimulates validators to collaborate instead of competing with each other, because in this case it is necessary to reach consensus faster for a higher amount of completed transactions or smart contracts, therefore, for higher profits in result.

In summary, the comparative analysis of Bitcoin and Ethereum showed its many differences, however, from authors point of view, due to working towards different goals, different sources of popularity, these cryptocurrencies have own way of development both in the global and Russian markets. After presenting main cryptocurrencies, it is necessary to estimate the whole situation in the cryptocurrency market in Russia.

In Russia cryptocurrency has too low popularity, according to statistical surveys, only 4% the population have good knowledge about bitcoin. Moreover, only 2 of all the electronic platforms with Russian version site are located in Russia - Go-Trade and Bitchanger. Government of Russia Federation pursues a prohibition policy about using cryptocurrency on the economic level, the main argument for making federal laws of such a policy is a high risk level due to the anonymous nature of transactions.

The liberal part of the spectrum of opinions is represented by Sberbank, whose head – Herman Gref, opposed government policy of prohibiting cryptocurrency. Another example of a positive opinion is Raiffeisen Bank, which with National Settlement Depository and mobile operator "MegaFon" made the first Russian transaction on placement of RUB-denominated bonds worth 500 million rubles using blockchain technology (Veynberg, Romanov, & Poluektova, 2011; Moiseev & Akhmadeev, 2017).

Nevertheless, on the global level of analysis, Bitcoin, Ethereum and the whole cryptocurrency market has a potential of the deeper penetration into most spheres of our life. Using the calculations and statistical data from the research paper of Ryerson University specialists (Yarushev & Averkin, 2018; Eldyaeva, Yarnykh, Lebedinskaya, Kuzin, & Kovanova, 2018; Romanov, Moskovoy, & Onokhova, 2014), making simplified own calculations, the conclusion can be made: the world distribution as a payment system is the major factor of Bitcoin development as already the most popular cryptocurrency in the world (according to Table 01). However, Ethereum is the leader in terms of developing cryptotechnologies and creating financial (and also not financial) technologies, because initially Ethereum and Bitcoin have different goals and potential ways of development in the global financial market (according to Table 02).

Table 01. Growth Possibilities of BTC and ETC

Growth Possibilities				
Total Growth Possibility of distribution as payment system				
	Emerging Market uptake	Global economic event	E-commerce Uptake	\sum
BTC	0.6	0.7	0.5	0.21
ETC	0.3	0.7	0.7	0.147

Table 02. Growth Possibilities of BTC and ETC for Institutions

Growth Possibilities			
	Financial Institution	Financial Technologies	Total Technical Growth Possibilities (B2xC2)
BTC	0.15	0.16	0.024
ETC	0.3	0.3	0.09

7. Conclusion

Having analyzed the potential possibilities of Bitcoin and Ethereum development in the world market, Russian government should examine cryptocurrencies in another way. It is necessary to apply the same idea as in making difference of nuclear weapon and nuclear physics: obviously, the development of nuclear weapons and the possession of it have potential risk and dangerous nature, whereas the nuclear physics is a sphere of enormous scientific potential and power. The government of Russian Federation should not deny serious threat of destabilization of world and national financial markets in case of a sharp distribution of Bitcoin payment system, however, creating better conditions in Russia for the development of cryptotechnologies will definitely lead to positive influences: optimization and securitization of financial transactions, voting process with high protected and transparent ecosystem, safe identity card issuing, easy and safe notary process and many-many others.

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