

Conference Paper

Retrospective and Prospects for the Development of Cryptocurrency

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Abstract

The article discusses the retrospective of cryptocurrencies, theoretical understanding of the digital currency, its value and essence. The tendencies and prospects of cryptocurrencies development. The article focuses on the lack of a legal framework regulating relations in the field of “mining” and circulation of cryptocurrencies.

Keywords: cryptocurrency; digital currencies; bitcoin; electronic money; mining; cryptographic methods of information protection.

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1. Introduction

The term “cryptocurrency” has appeared relatively recently. Despite this, the concept is often used, such terms as “digital money, currency”, “bitcoin”, “e-wallets” are also often used. At the present stage of development of financial technologies the issue of digital money is most urgent. A cryptocurrency is one of the innovations of the last time and attracts particular attention. There is no common understanding of the term, mainly the technical aspect of the circulation of digital money is explored. In this regard, the study of cryptocurrencies from this point of view makes it impossible to see its essence. The unilateral study of the electronic currency, aimed at studying of the technical support, does not allow to create adequate institutional and legal rules governing the circulation and issue procedure of digital currency, for this reason there is an imbalance in which innovations prevail and overtake the state regulation of relations in the sphere of payments at the micro and macro levels.

A cryptocurrency is a virtual or digital currency, where the coin is one unit that is displayed as encrypted data, therefore it cannot be copied and it is protected from counterfeiting. A cryptocurrency is a digital currency that is produced and stored in virtual wallets, it does not have the material’s physical counterpart. The first part

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of the word «crypto» means secret, encrypted, due to the fact that while creating this currency a cryptographic cipher, consisting of a sequential hashing and a digital signature is used. For the first time this term was used in 2011 in the journal Forbes. In this article, it was about Bitcoin. The concept of bitcoin comes from the English bit and coin. Bitcoin first appeared in January 2009, at the time the application was started with the same name - Bitcoin. In January 2009 a few days after a launch of the application the operation of the bitcoin transfer from one user to another was first carried out. The generation of bitcoins by users on computers based on calculations in terms of the price of electricity multiplied by the average processor power of the computer and correlated with the number of generated bitcoins. [2] This is the latest generation of a decentralised virtual currency that was created for working in the global world of the Internet. This digital currency controlled by no one, its issue is carried out through the work of millions of computers around the world, this program is used to calculate mathematical algorithms, this is the essence. That is, bitcoin is the result of computer programs located on a separate server, and on the millions of computers that communicate through a computer program, its objective is to give users of the app "virtual points, points", with the name bitcoin. This software is the ultimate limit for the virtual bitcoins, and a daily increase in users complicates obtaining virtual points. The people who are the users of the program, called "miners," from the English from the word "mine" – "to dig," and the process of "getting" virtual points called "mining". The whole process is that the program creates tasks and generates computing, a miner's computer calculates them, wasting time, CPU power and graphics cards for a decision, and after this the digital money is given to the user. When the number of users increases, the tasks become increasingly difficult. The program does not issue more e-3600 coins per day. Bitcoin miners connect to the system more powerful computers to be more active in solving problems, faster than a thought. Thus there is a motivation for the development of powerful IT equipment and this can be attributed to positive factors in the future. Miners sell virtual coins on the electronic exchanges for real money, the cost of these "virtual coins" exceeded the price of gold, in mid-2013 an analysis of the bitcoin rate and the gold rate have converged, which allowed to talk about Bitcoin as "electronic gold". [3]

To date bitcoin is the most used cryptocurrency. In addition to bitcoin, there are other types of cryptocurrencies. The total number of cryptocurrencies is not measured in one thousand types. The basic types of cryptocurrencies in 2017 are presented in Table 1.

TABLE 1: Capitalization of the TOP 10 cryptocurrencies in 2017.

Nº	The name of cryptocurrency	Capitalization, \$. USA
1	Bitcoin	67 779 309 181,87
2	Ethereum	1 303 456 109,94
3	Ripple	6 068 028 009,5
4	Litecoin	2 353 953 053,4
5	Ethereum Classic	1 313 839 631,9
6	NEM	2 150 557 622,6
7	Dash	1 709 133 780,40
8	IOTA	2 576 513 741,4
9	Monero	707 888 583,18
10	Stratis	20 126 011,8

From the table it follows that bitcoin is the most capitalized cryptocurrency. And other types of an electronic currency focused on an open source blockchain are actually derivatives of bitcoin and have smaller capitalization. [1]

Prospects for the development of cryptocurrencies exist, despite the fact that attempts to introduce a digital currency have taken place since the advent of the Internet, in fact, the use of digital money is in a moderate way. The opportunities of using cryptocurrencies include: the absence of inflation, the anonymity of the user, uninterrupted operation of the program in a server mode, quick transfers anywhere in the world, no counterfeit, ease of storage, the possibility of splitting into parts, and there are no fees for transactions, low fees for the exchange. A cryptocurrency is recognized as an effective financial instrument of crowdfunding. Small and medium businesses are attracted to the platform based on the blockchain technology, because the resources collected on them have a lower price, as well as in connection with protection against fraud and cyber-attacks due to the existence of databases for general use, which contains all ever occurred transactions and operates without a centralized leadership. [4]

Thus, the use of a digital currency has advantages over traditional financial payment instruments, but also carries elements of risk. A cryptocurrency in the first place involves a high degree of anonymity. Therefore, there is a risk of their illicit use and citizens' involvement in questionable transactions. The use of digital currencies in illegal activities is growing "exponentially", with the complexity of crimes which is also increasing. In this regard, the legalization of cryptocurrencies is necessary to conduct

by entering identification of the parties to transactions. Other disadvantages include the fact that the issuance and use of digital currencies are not yet regulated by neither international nor national law, at least in most countries. [4] Moreover, today, such a currency cannot be exchanged for cash, and the rate of digital currency is characterized by high volatility.

But, importantly, despite its shortcomings, cryptocurrencies are a promising tool, and its implementation requires observance of an interest balance. Opportunities give rise to risks, and they are great, because the legal regulation of the digital currency in Russia does not yet exist. The society shows a distrust to this method of calculations, so it takes time to introduce a cryptocurrency in the lives of ordinary consumers. And the distribution of cryptocurrencies inhibits their ban, restrictions on the use of this digital currency introduced in China. However, bitcoins are used in many countries as a way and a means of payment, so it is really difficult to prohibit the use of the electronic currency. For the development of the digital currency in Russia the necessary legal and economic preconditions of development should be formed. Different countries have different attitudes towards cryptocurrencies, for example, the European Union sees them as a contractual means of payment, i.e. as a service, Japan Association promotes the circulation of the digital currency with the traditional banking system. In Japan the electronic money are recognized as official. If we consider the socio-economic aspect of the development of digital currencies, the use of cryptocurrency in Russia and abroad, we can distinguish the cost-efficiency and security of digital currency, its mobility and the intensification of labour processes migration in the country and generally in the world. A cryptocurrency is promising not only for our country but for the world as a whole. But now many people are used to paying with the national currency than to do it with strange bitcoins, hence there is a distrust of this innovation, in addition to this, lack of identification of the owner and the state control makes bitcoin very attractive to the underworld. In addition, the distribution of the digital currency is currently more speculative in nature with all the ensuing consequences and risks.

2. Conclusion

A cryptocurrency is one of the innovations of the last time and attracts particular attention. It is a virtual or digital currency, where the coin is one unit that is displayed as encrypted data, therefore it cannot be copied and it is protected from counterfeiting. A cryptocurrency is a promising tool, and its implementation requires an interests balance of the state, business and society. A cryptocurrency is recognized as an effective

financial instrument of crowdfunding. Small and medium businesses are attracted to the platform based on the blockchain technology, because the resources collected on them have a lower price, as well as in connection with protection against fraud and cyber-attacks due to the existence of databases for general use, which contains all ever occurred transactions and operates without a centralized leadership. In the future a digital currency probably will firmly enter the economic and financial life, but it is necessary to solve a number of legal, economic and technological issues. You need to authenticate participants when using cryptocurrencies, the licensing of the "miners" activities and in general the state-legal regulation and governmental oversight might be introduced to prevent the use of this high-tech financial instrument for criminal purposes.

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