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CRYPTOCURRENCIES ARE THE MONEY OF THE DIGITAL ECONOMY

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Annotation
In the article, actual problems of the current state and prospects for the use of cryptocurrencies in Russia and abroad are considered. The problems faced by foreign countries when using cryptocurrencies are identified.
An analysis of the current state and prospects for the development of the Russian payment system allowed the author to identify the risks of introducing restrictions on cash payments, and payments using electronic money, including cryptocurrencies, and to give specific recommendations for improving Russia's monetary policy in the new conditions.

Keywords: payment system, cryptocurrency, bitcoins, banks banking business, monetary policy.

The last hundred years of world history were marked by the rapid development of the financial and banking sector, which predetermined the emergence of the so-called. electronic money. Many economists are inclined to believe that in the future paper money will disappear altogether and will be replaced by electronic money, i.e. the essence of money will remain unchanged, but its form will change: money will move into the sphere of virtual reality and will become "invisible". The place of electronic money in modern monetary theory is still being discussed, and in practice, virtual cash is becoming the currency of the world economy and its financial markets.
The Glossary of the Bank for International Settlements, published by the Committee on Payments and Settlement Systems (CPSS), defines a payment system as "the set of instruments, banking processes and interbank payment systems that enable the circulation of money" Thus, an idea is formed about the main elements of payment systems, the basis of which, is money.
The transformation of the types of money is due to the influence of the natural development of society. A new type of money appears only in accordanbyecessity when the previous types of money begin to slow down the process of production and exchange, and if the prerequisites for the emergence of new types of money have been formed in the process of constantly searching for more economical payment

systems that save social labor, reduce the cost of money turnover, increasing the speed of turnover, increasing the reliability and ease of movement of money.

The process of changing types of money is facilitated by technical and scientific progress. On the one hand, the availability of electronic cash is required by the developing electronic commerce in the information computer network Internet, which is a new stage in the development and globalization of the world economy. On the other hand, electronic money is more economical in terms of labor costs, and distribution n costs, allows allowing speed up the circulation of the monetary unit, in comparison with banknotes made of paper and metal. The practical implementation of the idea of electronic money became possible only in the early 1990s, in connection with the development of electronic computers, telecommunicatencryption, optio,n and cryptography systems.

Messages about administrative restrictions on the circulation of cash in different countries give an additional impetus to the development and widespread use of digital currencies. Today this topic is relevant for many countries of the world.

Bans on cash payments above the established limit are applied to optimize the payment turnover, allowing you to reduce the use of cash when making large purchases. Sufficiently severe restrictions on cash circulation exist in the USA - 5 thousand dollars, in Italy - 1 thousand euros, and in France and from September 1, 2015 ther,e is a limit of 1 thousand euros. The corresponding resolution was published by the country's official press organ JouOfficieliciel. Until that time, in France, it was possible to pay for purchases in cash if the amount did not exceed 3,000 euros. The restrictions introduced were made as part of the fight against the financing of terrorism.

Restrictions on cash payments also apply in other countries (Table 1).

Table 1. Legislative restrictions on cash payments

Spain	3000 euro
Greece	500 Euro
South Africa	$425
India	$450
South Korea	4000 USD
China	$7400
Great Britain	£9,000

Sweden and Norway have announced a complete rejection of the use of cash in circulation shortly. Sweden is considering a ban on paying for purchases in cash in retail.

In Russi, the expert community is discussing a bill on the development of a system of non-cash payments, which introduces restrictions on the volume of cash payments between individuals and legal entities.

In September 2014, Deputy Finance Minister Alexei Moiseev announced the preparation and approval of a bill to ban the use of virtual money in Russia, which was planned to be adopted by the State Duma in the spring of 2015. Representatives of the Bank of England touched upon the potential for the use of digital currencies by the central bank in their publication "One Bank Research Agenda" They are analyzing the possibility of issuing cryptocurrencies. In May 2016, the release of plastic cash banknotes into circulation was announced.

It is believed that attempts to withdraw cash from circulation will give an additional impetus to the development and wider use of cryptocurrencies, in particular Bitcoins (Bitcoin).

At present, the world monetary system is "drifting" from a system that unites national monetary systems based on national currencies to a multicurrency monetary system based on the widespread use of advanced information technologies and modern computers. It is no coincidence that at present the problem of using the so-called. digital or cryptocurrencies.

Digital currencies (for example, bitcoins), actively conquering the world, still cause heated debate. In some countries, these analogs of money are prohibited, while in others, on the contrary, they are very actively used.

The definition of definitions is also under discussion. For example, in the Russian-language Internet, cryptocurrency is considered "a type of digital currency, the emission and accounting of which are based on asymmetric encryption and the use of various cryptographic protection methods, such as Proof-of-work and Proofof-stake", or as "an innovative payment network and a new a kind of money that uses P2P technology, functioning without a central controlling body or a bank, transaction processing and issuance are carried out collectively, by the efforts of the network." On the site "cryptocurrency news" we read: "by its purpose, the cryptocurrency is no different from other payment systems, as it allows you to sell and purchase goods and services. The fundamental difference from other payment means lies in issuing (issuing) payment units and organizing the system for their storage and payments. In this case, it is obvious that the above definitions need serious revision and

clarification, since such concepts as a payment system and cryptocurrency are not synonymous and should not be confused.

According to Vakhrushev D.S. and Zhelezov O.V., "Cryptocurrencies are a special kind of electronic money, the functioning of which is based on a decentralized mechanism of emission and circulation and is a complex system of information technology procedures built on cryptographic protection methods that regulate the identification of owners and fixing the fact of their change. However, this definition of cryptocurrencies does not fully correspond to their essence.

Cryptocurrencies have no real value and do not reflect the general state of the economy of a particular country, since they are an international currency. The idea of their creation is not to create representatives of full-fledged money (for example, gold), but their analog, which has the properties of full-fledged money.

Bitcoin (eng. bit – una it of information "bit", eng. coin - coin) is a virtual currency that has no real value. The most important characteristic of the system in which Bitcoin circulates is decentralization. It does not have a single emission center. It does not depend on the banking system. Financial market regulators do not control this currency.

Bitcoin is just one of the varieties of digital or cryptocurrencies, presented in electronic form. The key feature of this currency is that it is one of the first so-called. decentralized currencies.

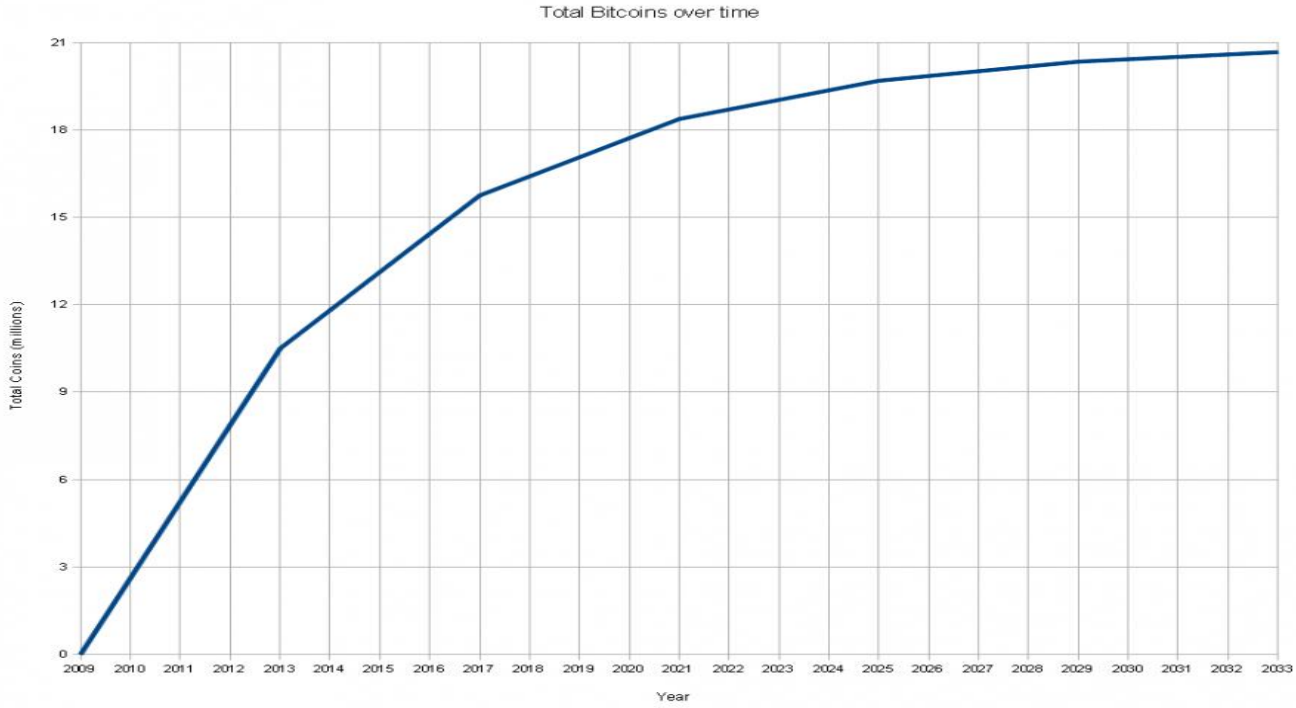
Bitcoins are "produced" around the world by users who have installed special programs on their computers. Programs of one type - bitcoin wallets - are tools for storing received bitcoins and performing operations with them. Programs of another type are programs of the so-called mining (from the English mining), a process that involves the use of computer hardware resources to perform mathematical calculations to confirm transactions and ensure the security of the Bitcoin network. As a reward for their services, miners receive commissions for confirmed transactions - newly created bitcoins.

To start using bitcoins, a person acquires a virtual wallet, which is "tied" to the name and passport of its owner. Then he gets the opportunity to buy bitcoins at the market price and use the system.

The Satoshi Nakamoto Nakamotos have been working for a long time on creating software for the Bitcoin circulation system. The genius of their thought lies in the fact that they granted the right to consumers to determine the amount of money supply and the price for one bitcoin.

In 2008, the first bitcoin appeared in the world. It cost 8 cents ($0.08). In 2009, the first 10,000 bitcoins were released into circulation. After 6 years, their number

increased to 14 million. It is assumed that the system will reach its maximum (issue of 21 million bitcoins) by 2040 (see Fig. 1).



Rice. 1. Dynamics of the money supply of bitcoins until 2033

Source: www. bits. Media/media/imagesitcoins_over_time_b. _ _ _ _ _ _ _ _ png

The main factors behind this explosive growth in bitcoin use were: a sharp increase in the number of "miners" in the bitcoin market and technological advances that made it possible to more efficiently hash data in processing transactions.

Currently, there are more than 620 types of cryptocurrencies in the world. At the end of 2017, there was a rush demand for cryptocurrencies in the world, which led to a sharp increase in their value. The bitcoin exchange rate against the dollar in December 2017 rose to a record high of $20,000. One Bitcoin coin costs approximately 1 million rubles and consists of 100 million kopecks (satoshi). At the same time, there are significant fluctuations in the value of cryptocurrencies. For example, the total capitalization of the cryptocurrency market according to CoinMarketCap at the beginning of 2016 was 6.9 billion US dollars. After 2 years (as of 02/01/2018), the capitalization of the cryptocurrency market was already almost 511 billion, 02/02/2018 - 420.72 billion, 02/05/2018 - 385.45 billion US dollars (Table 2).

Table. 2. Capitalization of the most popular cryptocurrencies

No.	Cryptocurrency name	Capitalization, USD
1	bitcoin	$135,801,654,922
2	ETH Ethereum	$80,565,077,996
3	XRP Ripple	$31,284,883,982
4	BCH bitcoin cash	$18,528,121,445
5	AD Cardano	$9,524,983,466
6	LTC Litecoin	$8,008,495,829
7	XLM Stellar	$7,088,248,420
8	NEO NEO	$6,723,080,000
9	EOS EOS	$5,559,598,485
10	XEM NEM	$4,827,869,999

Source: Cryto-Currency Market Capitalizations is [electronic resource]: - access mode -, URL: http://coinmarketcap.com/ (date appeals 05.02.2018).

The share of Bitcoin in the cryptocurrency market is approximately 35%, Ethereum - 22%, and Ripple - 8%. Bitcoin and Litecoin, which are accepted by all existing exchanges and exchange offices, are widely used. The rest of the cryptocurrencies are built based on the open so open-source and are, in fact, derivatives of Bitcoin.

The developers of the system replaced the traditional banking system with an alternative one in the form of so-called "miners", i.e. instead of banks in the Bitcoin circulation system, there are ordinary people who are interested in making a profit without much effort. The task of these people "miners" is to download the Bitcoin program and leave their personal computer open so that it processes the Bitcoin transaction information using a special program.

Transactions remain anonymous and no one can hack this type of transaction, as it registers transactions in the form of a code, which consists of 128 crypto-characters, which are then processed by the Bitcoin program and take on a new look. Only the seller and the buyer are participants in the transaction, and the "miners" are their intermediaries. The bank as a financial intermediary disappears during the operation. Each participant in the transaction has a personal virtual wallet and a key (crypto code, passphrase) to their bitcoins. The Buyer transfers his data to the Seller, the information is stored on the so-called "network nodes". Then the “miners” use the program to process this information and accumulate it in blocks (in the form of a transaction log, by analogy with an accounting journal of business transactions). To do this, the “miners” solve a complex mathematical inequality and determine the

correct sequence of 128 crypto symbols. Miners, having equal access to information, compete with each other (Fig. 2).

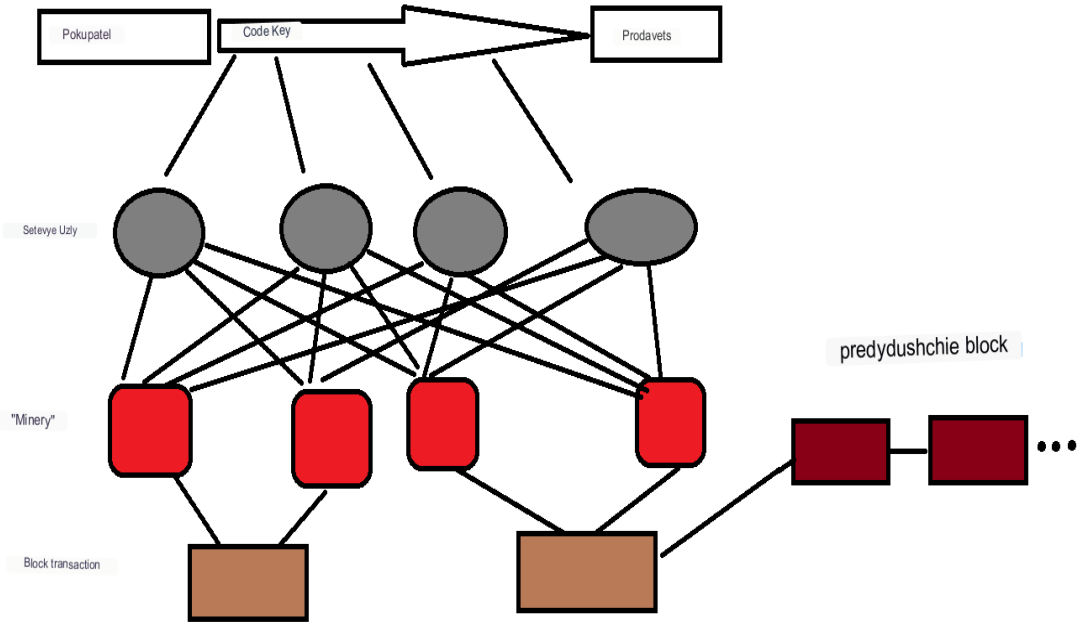


Figure 2. Interaction between participants in the Bitcoin circulation system

The “miner” who can solve this mathematical problem faster than others gets the opportunity to connect the block he created with the previous ones, and as a reward he receives a completely **new bitcoin.**

This is the "trick" of the Bitcoin system. The issue of money takes place in the form of remuneration for the work of "miners". But the complexity of transaction processing is supported artificially. The more “miners” there are in the market, the more difficult it is to create a transaction block (see Figure 3).

The conventional unit for measuring the efficiency of Bitcoin processing is " MegaHash ". The profitability of operations is measured in $\frac{\text{MegaHash}}{\text{Watt}}$. Obviously, the higher the efficiency of data processing with minimal energy costs, the more profitable the procedure for processing a transaction to get 1 bitcoin (“ mining ”).

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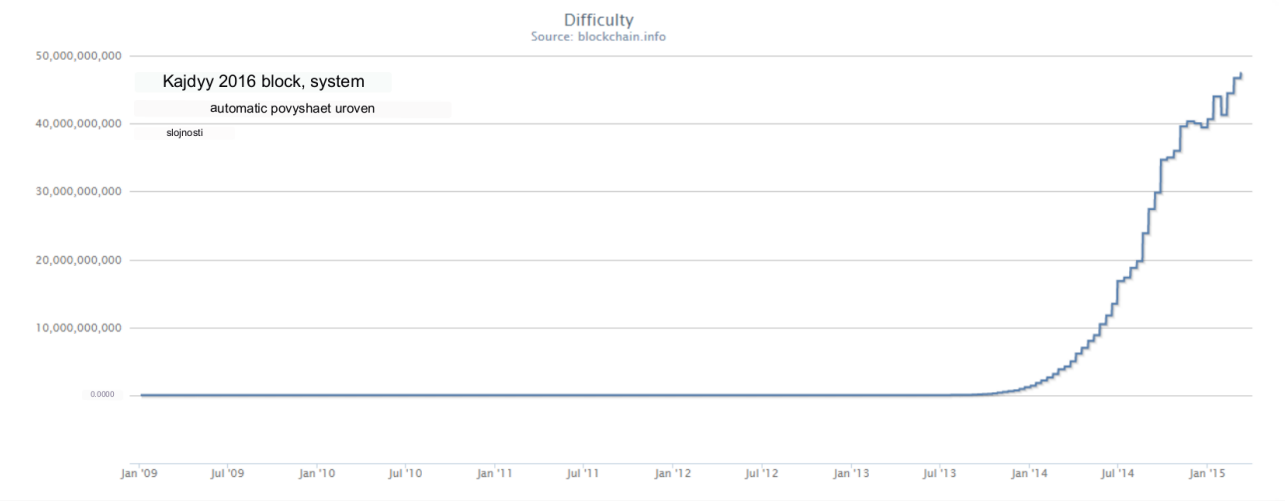

Figure 3. Difficulty processing Bitcoin transactions

For example, a "miner" needs to check three main parameters to evaluate the profitability of his operations: MegaHash, Watt,s, and processing complexity. With an efficiency of 850,000 HHash/sec 30 Watts (0.16$/1000 Watts) profitability is relatively low (see Table 4).

As initial data, we can take the characteristics of an ordinary personal computer costing from $600 to $1200. As a result, using such a computer, a person can earn no more than $533 per year. But in 2013, specialized video cards appeared capable of operating at a speed of 4.3 million Hash Hash/sec this case, the potential profit increases significantly and can reach $ 3558 per year.

Table 4. Profitability of operations performed with the help of bitcoins

Period	Bitcoins	U.S. dollars	Operation cost (in USD)	Commission (in USD)	Profit (in USD)
At one o'clock	0.00184614	0.44	0.03	0.00	0.41
Day	0.4430736	10.47	0.72	0.00	9.75
A week	0.31015154	73.28	5.04	0.00	68.24
Month	1.32922087	314.07	21.60	0.00	292.47
Year	16.17218722	3,821.16	262.80	0.00	3,558.36

Currently, there has been a serious split among programmers involved in the development and development of technologies based on the cryptocurrency-bitcoin operates. The stumbling block was the technical features of bitcoins.

Currently, this currency allows you to make only 300 thousand transactions per day. On the one hand, at the present stage of cryptocurrency development, this is quite enough. But on the other hand, it is not enough to compete with traditional payment systems, the volume of transactions amounts to tens of thousands of operations per second.

As a result, one group of developers believes that payment systems based on the use of cryptocurrencies should fully compete with such giants as Visa and MasterCard, and therefore these technological parameters must be dramatically increased in the shortest possible time. Otherwise, they argue, the confirmation of transactions will take too long, which will lead to a sharp increase in fees and, as a result, lead to the collapse of the entire system.

Their opponents believe that such actions will entail the loss of the independence of this cryptocurrency, as it will inevitably lead to the centralization of its management. In addition, they fear that the system will eventually become unnecessarily cumbersome, which will alienate some users from it.

And there are already such examples. For example, the well-known financier George Soros called transactions using bitcoins a “financial bubble” in the market, and one of the founders of the popular English-language website about Bitcoin.com cryptocurrency, Emil Oldenburg, sold all his bitcoins in early 2018 said that investments in this cryptocurrency were among the mostriskiesthis life. According to him, people will start getting rid of bitcoins as soon as they understand how they work. Among the main problems of bitcoiBitcoinoted are the high commission, which increases by 100 percent every three months, and the low speed of transactions. Italy takes almost five hours to confirm a single trade, which reduces the liquidity of Bitcoin, and Bitcoin in this cryptocurrency is very risky. The last limitation is difficult to overcome because network bandwidth is limited by the size of the block, which stores the history of transactions.

The discussion regarding the prospects of cryptocurrencies and the possibility of their use in national payment systems has not only not subsided in recent years, but has become more and more active. Moreover, different approaches of specialists to the possibility and expediency of their use lead to different practical solutions.

Currently, the world can observe multidirectional trends in the practice of using cryptocurrencies.

Despite the existing disagreements, the cryptocurrenontinues to develop new markets. And in several countrieseveralrld, cryptocurrencies are legalized. Acco media reports, for example, the Spanish travel agency Destinia has added a new option for its customers - the ability to pay for the purchase of air tickets in Bitcoin

due to the growing demanBitcoine audience to use the new means of payment. Such payments are made on the company's website almost daily. The most active bitcoin users are its clients bitcoin **Sweden Germany,** and **Argentina**.

In **Switzerland,** c, cryptocurrencies are used at the level of individual municipalities. South **Korea** plans to adopt a law on the legalization of cryptocurrency.

Japan is the only country in the world that has state control over transactions with cryptocurrencies and these transactions are subject to income tax. This positive experience in the practice of using cryptocurrencies is supposed to be used by Russia.

In **the UK,** Coinbase has made it possible for its UK and Spanish customers to purchase Bitcoin instantly using 3D Secure Bitcoin and debit cards, providing additional security for online payments. The commission for the service is 3% [4].

Currently, there is a possibility of the emergence **of state-owned cryptocurrencies**. The Deloitte Center for Financial Services report argued that many of today's private cryptocurrencies will disappear in the next 5 years, and government cryptocurrencies may come to replace them.

The first in the list of central banks, according to Deloitte, launching their own controlled cryptocurrencies, may be the Bank of England. Interest in distributed technology and digital currencies is shown by banks around the world.

The technology of functioning payment systems based on crypto-currencies can be in demand by the central banks of different countries. For example, it recently became known that the Bank of England is planning to issue its digital currency called RScoin coin is a type of digital currency that cannot be counterfeited or counterfeited. The currency model was developed by scientists at University College London. The currency is expected to function similarly to Bitcoin, however, it implies the presBitcoin centralized control. The only party that controls this distributed ledger will be the Bank of England, which will also be able to control the money supply.

Unlike Bitcoin with its fixed cash reserve of 21 million, the Bank of England, if desired, will be able to issue an unlimited amount of the RScoin currency, which creates the prerequisites for the development of inflationary trends in the economy.

Another position is taken by the Chinese authorities**,** who announced recently the prohibition of the production of bitcoin ins. The Chinese regulator directly points to the need to stop the mining (creation) of bitcoins in the country - due to "consuming a huge amount of electricity and fueling speculation with virtual currencies". China hosts almost 80% of the world's mining power, and their closure could seriously affect the Bitcoin market.

The Indian government intends to completely ban the use of cryptocurrencies in the country, as it considers them illegal means of payment. At the same time, the

country's authorities intend to actively use blockchain technology to develop the digital economy.

The restrictions on the cryptocurrency market have also affected investors in **South Korea**. On January 30, 2018, new rules for cryptocurrency trading came into force in the country: each trader is required to identify himself using a bank account.

Other countries, on the contrary, are taking active steps to develop the practice of cryptocurrency circulation. For example, the Prime Minister **of Kyrgyzstan,** Sapar Isakov, at the Forum "Digital Agenda in the Age of Globalization" said that in the fight against corruption, his country plans to use cryptocurrencies in public procurement.

President **of Belarus** Alexander Lukashenko signed a decree "On the Development of the Digital Economy", which is designed to create favorable conditions for the development of information technologies in the republic, including blockchain technology and cryptocurrencies, and the arrival of world IT companies in the republic. The document should come into force at the end of March 2018. Meanwhile, the Prime Minister of Belarus Andrei Kobyakov said that his country is not considering the introduction of cryptocurrency in Belarus and is testing blockchain technology as part of a "digital sandbox".Within the framework of the Eurasian Economic Union, Belarus offers two important initiatives in the field of digitalization development. Firstly, this is the integration of the digital infrastructure of the EAEU countries, which involves not only the introduction of common standards but also the overall management of physical infrastructure, the and formation of full-fledged digital transport corridors in the East-West direction. And, secondly, the transition from a coordinated policy in the digital sphere to a unified strategy of the member countries of the Union. It is proposed to create a general program for the digital transformation of the Eurasian Economic Union with specific activities and deadlines for their implementation.

Armenian Prime Minister Karen Karapentyan believes that digitalization in modern conditions "is the only chance for the country to become a state with effective management and economy in the shortest possible time." He noted that in his country the annual growth in IT is about 25%, by the end of 2017 this figure will be 28%. Armenia has identified six strategic areas for digital transformation: digital government, digital skills, digital infrastructure, cybersecurity, private sector, and institutional framework. In 2017, the Armenian authorities created the "Digital Armenia" fund and developed an appropriate program until 2030, according to which by this date 100% of public services for businesses and 80% for citizens should be provided in digital form.

In **RRussia**at the legislative level, the use of money surrogates is prohibited. At the same time, there is fertile ground for the decentralized emission of cryptocurrencies. According to data characterizing the level of use of Internet technologies, Russia is among the top 10 Internet user countries in Europe and is in 2nd place after Germany. The results of a recent study by ESET indicate the readiness of Russians to actively use digital currencies, while ahead of residents of many developed countries of the world (Table 3).

Table A mmotoristcommon form of payment for online purchases

Payment means	**Great Britain**	**USA**	**Germany**	**Russia**
Credit card	25.05%	49.44%	10.50%	19.50%
Paypal or similar services	39.76%	22.66%	58.60%	26.50%
Payment upon receipt	2.49%	3.09%	20.90%	18.50%
Bitcoin or other cryptocurrencies	1.19%	1.50%	1.60%	6.90%
Debit bank card	31.51%	23.31%	8.40%	28.70%

Source: ESET research (www. eset .com)

On fig. 4 shows exchanges with a Russian-language website trades trade bitcoins.

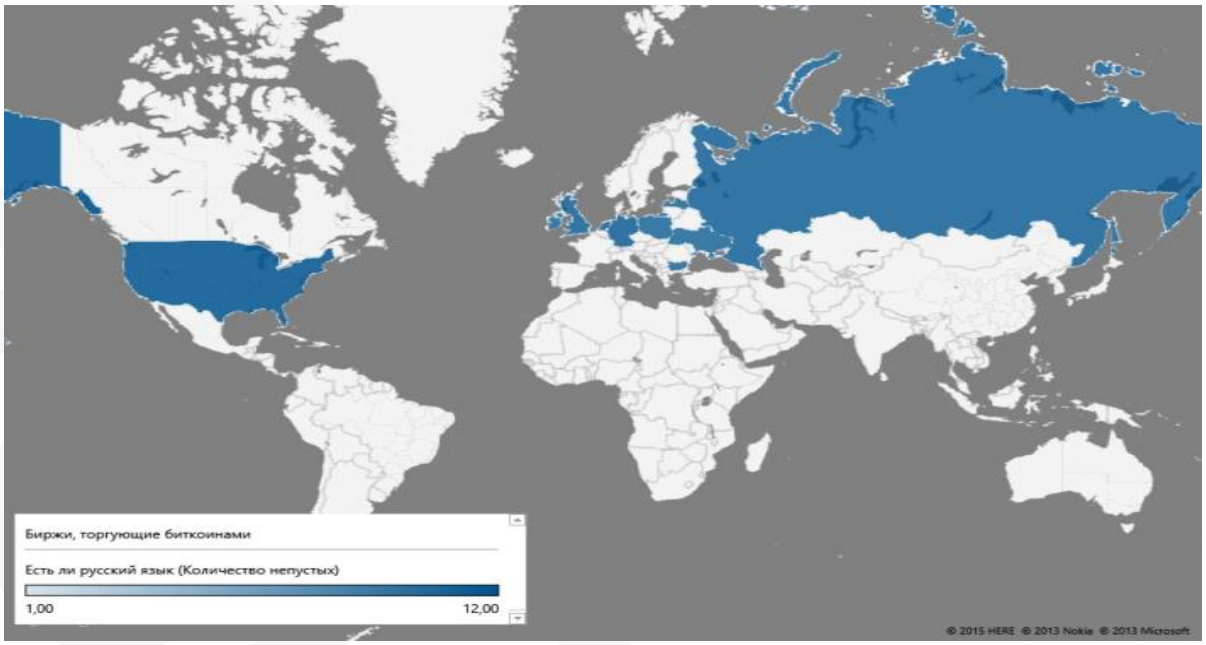

Figure 4. Exchanges with a Russian-language website trades trade Bitcoin.

Source: www.bitmakler.com , www.pr-cy.ru _

On February 2, 2018, in Krasnodar, the Bank of Russia openedthirstt in Russia Competence Center for combating illegal activities in the country's financial market. The main areas of work of the Center will be: identifying structures operating without licenses and entering them into the database, counteracting "financial pyramids", "black creditors", false insurance rs, illegal forex dealers, collecting information about the organizers of fraudulent schemes, initiating inspections and applying enforcement measures to offenders.

The Ministry of Finance of Russia The Ministry of Finance has published a bill "On Digital Financial Assets", which provides for the definition of the status of digital technologies used in the financial sector and their basic concepts, including cryptocurrencies. According to the document, tokens and other digital financial assets can be exchanged for rubles, foreign, currency, and other property only through a digital financial asset exchange operator. The bill also limits the amount for which unqualified investors can buy tokens within one ICO (placement of tokens to attract funding) - no more than 50 thousand rubles.

According to the Deputy Minister of Finance of the Russian Federation Alexei Moiseev, the exchange of cryptocurrencies for rubles and other assets can be allowed in certain territories. In particular, the ministry is currently considering the possibility of organizing organized trading on Russky Island and Oktyabrsky Island, where a special regime may be introduced. He stressed that the exchange of cryptocurrencies in Russia will be able to solve the problem of whitewashing the market.

However, the Ministry of Finance and the Bank of Russia have not yet reached an agreement on the possibility of exchanging cryptocurrencies for rubles and other assets. According to the Central Bank of the Russian Federation, such transactions should be alloaboutlation to tokens. The Ministry of Finance, in turn, emphasizes that this does not imply the use of cryptocurrencies as a means of payment in Russia.

The Finance Ministry is finalizing a draft law that will define the concept of "money surrogates" in the legislation and establish responsibility for their use as a means of payment. This is necessary to protect the ruble as the only legal tender in Russia.

Prime Minister Dmitry Medvedev proposes to introduce legal regulation of the use of cryptocurrencies at the level of international conventions. In his opinion, blockchain technologies have a huge future. And it's hard to disagree with that.

In September 2015, the Russian media disseminated information about the possible issue of the first virtual currency in the Russian Federation - bitruble.

The Qiwi payment system announced that it was ready to release the bitruble cryptocurrency, provided that it agrees with the Central Bank of the Russian Federation on this issue. The Yandex. Money company is also interested in

participating in transactions with cryptocurrencies if the Central Bank of the Russian Federation allows its circulation in Russia.

At the same time, regulatory authorities have repeatedly declared their distrust of this means of payment. So, on September 17, 2015, the Chairman of the Central Bank of the Russian Federation Elvira Nabiullina at the Kazan Forum of Innovative Financial Technologies Finnopolis stated that the Russian mega-regulator of financial markets will continue to study the issue of circulation of cryptocurrencies and the use of crypto technologies, taking into account the risks associated with them. Among them are the following:

- the possibility of suspicious transactions. The use of cryptocurrencies that can be exchanged for real money carries risks in the field of combating money laundering;
- Russians in general are not very well informed about the details of working with cryptocurrencies. People who do not have high financial literacy do not always understand that by accumulating bitcoins, they can lose their money, because. they are not insured, for example, by the Deposit Insurance Agency;
- in an economy with a high share of shadow turnover, the central bank, as a mega-regulator of financial markets, may lose control over the money supply, which is fraught with serious negative economic and political consequences;

Deputy Finance Minister Alexei Moiseev said that the Government of the Russian Federation is discussing a draft law (on cryptocurrencies), but given that there are no global standards for the circulation and regulation of cryptocurrencies yet, under these conditions, it makes sense to start regulating this sphere only when “there is a stable world practice”. The Ministry of Finance believes that the Russian authorities should be wary of the emergence of cryptocurrencies in Russia, as they carry risks in terms of money laundering.

A similar opinion is shared by French legal experts and employees of one of the largest banks, Dominique Bourrine and Ethier More: since the international legal status of bitcoins is currently not defined, it is impossible to attribute this type of instrument to any of the financial categories. Bitcoin is not a currency that has an exchange rate, not a means of payment, and not even electronic money, as the laws of many states describe them.

At the same time, such an uncertain situation does not prevent some market players from using cryptocurrencies as a commodity, a risky financial instrument. At the same time, the lack of regulation of cryptocurrencies does not give their owners any guarantees regarding price and liquidity. Moreover, bitcoin users are not immune to even a simple technical failure.

In this regard, the position of French experts who published a proposal to develop an international legal framework that would allow regulating the circulation of bitcoins and other cryptocurrencies in the specialized magazine Les Echos deserves attention and support.

So, cryptocurrencies are at the intersection of two technologies - financial and information. Recently it became known that IBM Corporation, one of the largest technology companies, is opening a blockchain (blockchain) laboratory. The company plans to use large computing power to determine the potential use of cryptocurrencies. It is assumed that the laboratory will simulate practical use cases for cryptocurrencies, ranging from payment applications to the possibility of combating money laundering. According to the creators of the laboratory, if they manage to develop open standards for the use of blockchain technologies in the field of financial services, then this will be a breakthrough for the introduction of crypto technologies in the mass market of payment systems.

Analysts at the consulting firm Deloitte cite the development of artificial intelligence, neural networks, blockchain, n, and cryptocurrencies among the factors that will influence global financial markets in the coming years, along with demographic, consumer, and other factors.

Deloitte qualifies blockchain as “arguably the most important innovation of all,” believing that the technology has the potential to change the $26 trillion payments market. US dollars per year. The changes that blockchain can provide are speeding up transactions, reducing transaction costs, and eliminating intermediaries. Deloitte predicts that private blockchains will also take off, especially thanks to banks.

Blockchain-based payment systems should significantly increase the volume of transactions by 2020, while the spread of other systems based on the same technology will become a reality closer to 2025. According to Deloitte, “Bitcoin and other digital currencies are likely to dominate.” However, for their widespread adoption, two factors are missing: interoperability between blockchains and compliance with global regulatory standards.

But while no single decision has been made on the further development strategy in this area, foreign experts have suggested that the existing disagreements could eventually lead to the emergence of a new cryptocurrency and even started talking about the possible collapse of Bitcoin. Especially when you consider that Bitcoin does not depend on a single emission center, banking, or other financial systems: it is created and exchanged through a network of productive personal computers. Transactions in bitcoins are anonymous, and their turnover, until recently, was not regulated in any way.

Crypto technologies can be used to modernize or create fundamentally new state payment systems, which will reduce distribution costs, and increase the speed and security of payment transactions. And since new payment systems based on crypto technologies will have state status, they will receive the necessary support and trust from economic agents, which will eliminate the systemic problems of existing private payment systems based on cryptocurrencies.

It is important to emphasize that cryptocurrency is only one of the elements of modern payment and settlement systems. The emergence of new cryptocurrencies involves the development of norms and rules, regulation of their use; information infrastructure; determination of information security issues, regulation of cyber risks; training and development of education in the field of information technology, and improvement the financial literacy of the population; formation of research competencies, etc.

In Russia, much is already being done in this direction. The bills of the Central Bank of the Russian Federation and the Ministry of Finance on digital assets have been prepared, and the conceptual apparatus for conducting operations with cryptocurrencies has been defined. Projects are being developed for the interaction of the mega-regulator with financial market participants carrying out operations with cryptocurrency. In particular, the Central Bank of the Russian Federation is gradually introducing new rules for the use of digital platforms. Thus, digital platforms for remote customer identification are expected to be introduced from July 1, 2018. This will increase the level of competition in the banking sector while simplifying the interface and strengthening the protection of customer biometric data. In parallel, the Central Bank of the Russian Federation is working on digital platforms that ensure the development of fast payment systems (payments by phone number e-mail, etc.) along with payments by plastic cards, etc. At the same time, the Bank of Russia believes that infrastructure platforms should not replace or replace existing financial and credit institutions. They should be in addition to them.

At present, it is important to assess the potential of cryptocurrencies in terms of the development of society and the state, the country's economy, its information technology and financial sectors, the functioning of every economic entity (including financial and credit institutions), and the population in the new economic realities.

In general, we can conclude that the circulation of cryptocurrencies is a new phenomenon, a prototype of a **fundamentally new system of monetary circulation**.

While there is no single decision on the further strategy for the development of cryptocurrencies in the world, it seems important to us that the competitive

development of electronic money payment systems with a large number of issuers should be under the mandatory control of financial market regulators.

Considering that payment systems, as a rule, pursue the goal of achieving certain operational and economic efficiency, it is important to highlight their main elements that require special attention:

1. formal agreements between system participants;
2. agreed and accepted technical standards and methods for sending payment orders between participants;
3. agreed on methods of o offsetting the mutual claims of the participants and resolving the liquidity problem;
4. general procedures and rules of work, including work schedule, participation criteria, commission level, etc.

In countries with a developed economy and a stable monetary system, with an established tradition of settlement transactions, cryptocurrencies will occupy the niche in which their use will be most effective. In developing countries with a young and still unstable monetary system, strict control over their implementation is necessary. For example, in Russia, a huge territory, with relatively cheap electricity y, a and high level of education the population allows us to consider the creation of **the International Financial Center for Cybercurrencies** in the country try.

Progress makes new demands on the economy and existing payment systems. The spread of payment systems based on cryptocurrencies is an objective reality today. Financial regulators around the world are currently working on mechanisms for their implementation in the traditional payment system, which will increase its efficiency and competitiveness. At the same time, cryptocurrencies will rightful place in the global payment system only if new digital technologies (including blockchain) are effectively put into circulation while maintaining the levers of control of financial markets at the national and supranational levels.

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