

Cryptocurrency: Technologies and Prospects

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Abstract

Subject. The article is devoted to the analysis of the cryptocurrency market operation and of the existing problems that impede its development.

Goal. The goal of the study is to analyze the current state of the cryptocurrency market and to identify the main problems of its development.

Methods. The study was conducted using the methods of synthesis, comparative analysis, and expert assessments.

Results. The factors influencing the demand for cryptocurrencies have been identified in the study. The desire of investors to receive one-off profit from the spread in the buy and sell prices, without showing interest in long-term investments in new technology, is one of the most important factors. The regulatory aspects of the cryptocurrency regulation in international space have also been revealed. For example, cryptocurrencies are recognized as legal, regulated means of payment in some developed countries, which is allowed for use when paying for goods and services. The barriers to the market development, including the ban on the turnover in some countries and undeveloped legal aspects, have been identified.

Conclusions. In conclusion, the possibilities and prospects of the cryptocurrency development as a medium of exchange have been identified. It has been noted that increasingly more countries are actively interested in the cryptocurrency market and forming some kind of regulatory framework for its regulation. However, the main financial regulator of the Russian Federation continues to adhere to a negative point of view regarding cryptocurrencies at the moment.

Keywords

Cryptocurrency, Cryptocurrency Market, Bitcoin, Stock Exchange, State Regulation.

Introduction

The public interest in blockchain and cryptocurrencies has increased in the context of undermined trust in financial intermediaries and understanding that the current world monetary system has become insufficiently effective and obsolete in solving the problems of the modern economy. It is remarkable that a new technology for storing and exchanging data – blockchain – appeared before the start of the global financial crisis of 2007 – 2008 (Robleh, Barrdear, Clews, 2014). As a rule, very complex definitions of this term are used in various sources. The blockchain, as known today, can become an alternative to the traditional wire transfer system. It creates new opportunities for the search, organization, evaluation, and transfer of any discrete units and is a new organizational paradigm for coordinating any types of human activities that some compare with the structure of the human blood DNA (Dorofeyev et al., 2018). Along with the blockchain technology, a new economic phenomenon emerged – cryptocurrencies, Bitcoin being the first of them. The term Bitcoin defines concepts that all together form a cryptocurrency-based payment system: a cryptocurrency, a protocol, a client, and a ledger. The main components of the blockchain technology are listed in Table 1.

Table 1 Blockchain technology levels by the example of Bitcoin

1. Cryptocurrency	Internal currency, unit of payment, or means of payment embedded into the blockchain system. The cryptocurrency can be bought and sold in the market.	Bitcoin, Litecoin, Ethereum, Ripple and other cryptocurrencies
2. Bitcoin protocol and client	A basic blockchain-based protocol describing how assets are transferred from one holder to another in the blockchain. It is also a network representing a set of computers distributed around the world with Bitcoin Core software installed, which is designed to verify transactions and blocks.	Software performing operations with cryptocurrencies
3. Bitcoin blockchain	Basic blockchain platform. The blockchain ledger contains all the records made in the history of its existence.	Basic decentralized blockchain transaction ledger

Source: compiled by the authors.

The society accepted the blockchain technology and cryptocurrencies as a class of assets not immediately, but only after a set of the necessary and sufficient conditions had been formed. They are as follows:

1. The practical development of the blockchain technology reached an acceptable level of efficiency (only one critical vulnerability has been found over nine years of the practical implementation of the Bitcoin technology, as a result of which the attacker accumulated 92 bln Bitcoins on one account. The entire financial history of the transactions in the Bitcoin network was rolled back for one day to fix the error);
2. The financial crisis of 2007 – 2008 revealed the imperfection of the financial intermediation system and inefficiency (slowness) of the modern system of wire transfers (especially cross-border ones), with the relatively high cost of financial intermediary services;
3. The financial sector has become overregulated: a large number of certificates and confirmations of the sources of funds were demanded from customers to complete transactions;
4. The trend of antiglobalization and financial decentralization has manifested itself very clearly and multilaterally in the global community;
5. The visible desire of the leading countries to change the status of the US dollar in the global monetary system; and
6. The quantitative easing (QE) policy or the risk-taking policy pursued by the world central banks after the crisis of 2007 – 2008 achieved their main goal – to restore the economy to precrisis levels, but at the same time, there was too much cheap and affordable liquidity in the world economy, and the returns on traditional assets became so low that it forced investors to invest in a new high-risk asset class – cryptocurrencies (Sompolinsky et al., 2016).

Materials and Methods

As such, the blockchain technology and cryptocurrencies gained the first significant momentum in development and took a certain niche in the modern world of finance.

The world community currently disagrees about the official status and mission of cryptocurrencies. After the collapse of the Japanese cryptocurrency exchange Mt. Gox in 2014, various governments have been divided into three ideological groups:

1. The turnover of cryptocurrencies and conducting ICOs are banned in the country (China, Bangladesh, Iceland, Lebanon, Vietnam, Thailand, Bolivia, Ecuador, Kyrgyzstan, and Indonesia).
2. The turnover of cryptocurrencies and conducting ICOs are allowed in the country, but only through special intermediaries (exchanges) that are subject to licensing (USA, Canada, UK, Australia, Estonia, Denmark, South Korea, Sweden, Netherlands, Finland, and Belarus).
3. The current status of cryptocurrencies and blockchain has not been defined, but the government is interested in legalizing them and is developing an appropriate regulatory framework (Russia, Belgium, Colombia, Czech Republic, Germany, New Zealand, Israel, Ukraine, France, Croatia, Belgium, Poland, Hong Kong, Slovenia, Turkey, Singapore, Switzerland, and Spain).

Cryptocurrencies are poorly integrated into the modern financial system and are actually used only for financial speculation today. Even though the cryptocurrency market is actively developing, it still represents a kind of financial “Wild West”: insider trading methods are actively used on the cryptocurrency market, market manipulations with cryptocurrency rates are carried out without censure or punishment (the so-called “pump&dump” method), cryptocurrencies are used to circumvent various bans by financial intermediaries, to evade taxes, to finance illegal activities, and for other prohibited actions (Slepov et al., 2017a).

Some countries assess the potential for developing the blockchain and launching national cryptocurrencies very highly and optimistically. For example, Venezuela launched its national cryptocurrency El Petro in early 2018, and some other countries are also considering the possibility of issuing national cryptocurrencies. However, are cryptocurrencies so good compared to other forms of money? A comparative analysis of precious metals, fiat money (cash and cashless), and cryptocurrencies by a number of attributes is presented in Table 2.

Table 2 Comparative analysis of the properties of fiat money, gold, and cryptocurrencies

Properties of money	Gold, including precious metals	Traditional credit money		Cryptocurrencies
		Cash	Cashless (electronic)	
1. Divisibility (fractionality)	2.0	4	5.0	5.0
	below average	high	highest	highest
2. Portability (ease of use for monetary purposes)	2	3	5	4
	below average	above average	highest	high
3. Durability	2	3	5	5
	below average	above average	highest	highest
4. Recognition	3	3.5	5	3.5
	above average	above average	highest	above average
5. Standardization	2.5	4	5	5
	average	high	highest	highest

6. Security and internal (consumer) value		5	2.5	2.5	1.5
		highest	average	average	below average
7. Degree of the instrument integration, being a type of money, in the current financial system		2	3	5	2
		low	above average	highest	low
8. Speed, convenience, and requirements (for the provision of documents and certificates, including the factor of the transaction anonymity) to the parties to transactions, including cross-border ones		1	2.5	4.5	3.5
		low	average	above average	above average
9. Fees and financial costs of transactions, including cross-border ones		1	5	4	2
		high	lowest	low	high
10. Security of the parties to transactions, including cross-border ones		3	2.5	4.5	3.5
		above average	average	above average	above average
Total	(maximum = 50 points)	23.5	33	45.5	35
			Average for cash and cashless money = 39.25		
	(maximum = 100 %)	47 %		66 %	91 %
				Average for cash and cashless money = 78.5 %	

Source: Compiled by the authors

The comparative analysis indicates that cryptocurrencies rank second among the analyzed instruments as a form of money. The modern cashless money ranks first with a noticeable margin. Let us consider each of the ten items from Table 2 in more detail.

1. Divisibility of Money

Precious metals are the worst among all the forms of money (two out of five) in terms of their ability to be divided into fractional components. There are generally accepted standards for the manufacture of gold bullions and coins in practice. If there is a need to divide bullions into nonstandard sizes by weight, their skilled remelting is required. Unprofessional approach to the division of gold pieces carries the risk of losing the metal quality (Slepov et al., 2019). Moreover, nonstandard pieces of precious metals are often accounted for at the price of scrap and cause distrust of the party accepting it as payment in sales transactions. Cash money fully performs the functions of money in the modern conditions and has a high degree of divisibility (four out of five). Cash and banknote settlements do not cause any problems in sales transactions in most countries. Cashless money, just like cryptocurrencies, has the highest degree of divisibility (five out of five).

2. Portability of Money

Precious metals are the least convenient form of money in terms of portability for the purposes of the money turnover in the modern conditions (two out of five). When conducting the appropriate calculations, it can be concluded that with a USDRUB rate of 56.5, one kg of gold corresponds to approximately 608 grams of 100-dollar bills and 540 grams of 5,000-ruble bills in value, which confirms the thesis of higher portability of cash. Cashless money has the highest portability (five out of five). Cryptocurrencies are also highly portable (four out of five), but the authors believe that they are inferior to the modern cash money in this quality, since they are poorly integrated into the fiat money turnover and the financial system. Difficulties in settlements with cryptocurrencies, as in the case of electronic money, can arise only if there are infrastructural problems: no

access to the Internet, no ATMs and payment terminals for electronic money, cryptocurrency exchanges refuse access to transactions of residents of the countries under international sanctions, etc. The cross-border transfers using cryptocurrencies still do not outperform the modern payment systems.

3. Durability of Money

It is a well-known fact that durability of precious metals as a monetary instrument is the worst among all the types of money (two out of five) because their physical depreciation takes place when they are actively used. Historically, metal monetary systems have always been subject to artificial depreciation (Osipov et al., 2017).

Cash is more durable and wearproof (three out of five) than metal. In addition, the relatively low cost of cash banknotes allows central issuers to update cash money supply quite efficiently.

Cashless money and cryptocurrencies are the most wearproof (five out of five), since these are just electronic records in the relevant accounts and in ledgers.

4. Recognition of Money

The recognition of the most popular precious metals (three out of five) in the modern world is not the same as it was during the time of mono- and bimetallism, but it is equal to the cash level (3.5 out of five). Most people, out of ignorance and lack of experience, treat physical precious metals with caution, demanding appropriate documents confirming their authenticity. Cash is well recognized within the state in which it is issued or is an official means of payment.

The recognition of cashless money can be considered the highest of the options analyzed (five out of five), since its use is carried out with the participation of financial intermediaries and an appropriate infrastructure of financial instruments. People have gained great experience in using it.

Cryptocurrencies are a relatively new phenomenon, but they operate on the basis of decentralization and in this regard are inferior to traditional cashless money (3.5 out of five), since all the risks and difficulties associated with the recognition of cryptocurrencies (the amount of which is comparable to the number of fiat currencies) and the principles of the blockchain work lie directly with the users (payer and payee) (Sigarev et al., 2018).

5. Standardization of Money

Historically, precious metals have been worst suited as a standardized monetary unit for circulation purposes (2.5 out of five) due to their physical depreciation. For example, newly issued money from precious metals of the same denomination is likely to be more valuable than the old one. Of course, the country can try to force all its residents to use both worn out and newly issued precious metal money in the turnover on an equal footing, but such experiments did not result in anything good in the past. Moreover, such money loses the function of the world money and will be valued solely at its market value, since the laws of a particular state are enforced exclusively on its territory and are not applied to other territories (Extance, 2015).

The standardization of cash money, cashless money, and cryptocurrencies is approximately equal and is the highest (five out of five each).

6. Security and Internal (Consumer) Value of Money

Precious metals rank the highest (five out of five) for their internal consumer value fixed by hundreds of years of their use in human life. Precious metals physically exist as a commodity, which undoubtedly plays a decisive role in evaluating the security of this asset as a form of money.

Cash and cashless money are not officially secured by anything, since they are not tied to a specific collateral asset. However, the security can be assessed as average (2.5 out of five). The money producer (central banks) usually has a legislatively assigned function to maintain the stability of the national currency exchange rate, but there is no obligation to ensure a specific level of the internal consumer value or purchasing power of the national currency in relation to goods and services traded on the market. As such, the security of cash and cashless money is associated with the economic power of the state and its ability to produce goods and services that are in demand both within the country and abroad. The security of cryptocurrencies is the lowest of all analyzed types of money (1.5 out of five). Cryptocurrencies and blockchain emerged as part of decentralized finance, as a link in the financial system with minimal state involvement by the modern standards (Slepov et al., 2017b). There is no central issuer and well-developed regulatory framework in the world of blockchain. Moreover, none of the network users is specifically responsible for its security, regulation, development, etc. Cryptocurrencies (coins) are rights to hold and dispose of virtual values circulating within the network based on the blockchain technology. Like fiat money, cryptocurrency does not have intrinsic value, and the

demand for it depends on the consumer value of a particular blockchain technology. In turn, the consumer value and investment attractiveness of a particular blockchain technology in the cryptocurrency market are determined by the producibility of its protocol (program code) as a system of account and redistribution of values, the scarcity of virtual coins issued within it, the prospects for the network development, etc. If the consumer value of the blockchain technology is high, then the demand for its services will also be higher, and the greater volume of virtual values will be converted on its basis (Vlasov, 2017). Thus, like traditional cash and cashless money, cryptocurrency has no intrinsic value, but is conditionally secured by the producibility of the blockchain network and the efficiency of the payment system based on it.

7. Degree of the Instrument Integration in the Current Financial System

Precious metals were withdrawn from the financial system as full-fledged money after 1973 and are currently presented on the market only as a commodity (two out of five). Being traded on the commodity market, they are one of the components of the forex reserves of central banks. The precious metal derivatives are traded on the derivatives market. Investors value such assets as an instrument of protection against risk and inflation in times of financial crisis (Yuzvovich et al., 2016). Precious metals are not money in the modern world; therefore, they are not used as an instrument of fiscal redistribution of financial resources in the economy. There is also a black market for gold, where settlements are carried out in precious metals and bullions not registered with the relevant government bodies.

Cash money is integrated into the financial system very well (three out of five). For the most part, it is used in settlements as a means of payment. Cash is not used for large payments (for example, budget transfers or payments on federal loan bonds). Most of the money circulation in the world is represented by cashless money, which is involved in all processes of redistributing financial resources both through the financial market mechanism and through the budget system as much as possible (five out of five). Cryptocurrency is poorly integrated into the global financial system (two out of five). Cryptocurrency is still not used in the world as full-fledged money. The derivatives (futures and ETFs for cryptocurrency) were created in 2017, and this class of assets formally emerged as an option for investing in traditional US financial exchanges. Cryptocurrency has recently been tested as a means of payment in the market of goods and services, as well as a tax payment tool. Some countries (so far few of them) recognize cryptocurrencies as an official means of payment (Japan, South Korea, the USA, etc.). Some US states (Arizona) announced they accepted cryptocurrencies to pay taxes.

Besides, a number of multinational corporations also stated that they began to accept cryptocurrencies for payment for the goods and services sold.

8. Speed, Convenience, and Requirements (for the Provision of Documents and Certificates, including the Factor of the Transaction Anonymity) to the Parties to Transactions, Including Cross-border Ones

Settlements with precious metals in the current financial system are not common (one out of five), although they are carried out on the black market. In accordance with the requirements of the monetary laws, all the information about the seller and the buyer, as well as about the origin of the precious metals involved in the sale transaction must be provided when exchanging currency values and precious metals. The currency values in large amounts must be declared when taken across the border. Cash payments within most countries of the world are priority forms of settlements and are quite convenient. At the same time, making cross-border payments using cash is not common in practice (2.5 out of five). It must be noted that legislation and regulation in this area become increasingly tightened every year in all countries. The modern payment systems based on cashless money are the most developed and widely used form of money transfers now (4.5 out of five). The verification of identity is mandatory in cashless payments, and the confirmation of income sources is also required in most cases. In the fight against tax evasion, state authorities require the financial intermediation system to provide a large volume of supporting documents and certificates. In addition, the participation of a large number of intermediaries is sometimes required in international settlements. This significantly slows down and complicates the process. Therefore, as a means of payment without the participation of a large number of financial intermediaries, cryptocurrency has a chance to take its niche in the market and in the structure of the global financial system in the field of international payments and settlements. Cashless payments are relatively safe because they pass through many stages of verification and can be rolled back (canceled if a technical error is made). Cryptocurrency competes with cashless money in speed, convenience, and anonymity (3.5 out of five). The mass popularization of cryptocurrency was accompanied by an advertisement that it granted users such benefits and advantages over fiat money as anonymity, high speed of settlements, low fees, lack of intermediaries, etc. However, all the above advantages of cryptocurrency compared to other forms of money today are either completely lost or only partly relevant for some reasons (mainly because the state began to actively intervene in the process of regulating the cryptocurrency market). For example, if the whole world switches to paying salaries in Bitcoins, every seller will be able to easily find out the salaries of a person buying goods from them just checking the public ledger of the Bitcoin blockchain operations.

Comparison of transaction speed in traditional payment systems and cryptocurrency-based payment systems is presented in Figure 2.

People face a lot of difficulties when using cryptocurrency as a means of payment: the market infrastructure is inefficient; it regularly encounters failures, delays, and errors; fraud is widespread in the market, etc. The quality of the customer service on cryptocurrency exchanges is relatively low. These features of the cryptocurrency system require a high level of financial literacy and appropriate qualifications from the market participants because transactions cannot be rolled back in the event of an operational error in most cases, which threatens the complete loss of the client's cryptocurrency assets.

With the increasing load on various blockchain networks, it also becomes apparent that all cryptocurrencies have very limited bandwidth. For example, Bitcoin has exhausted its bandwidth and is already hopelessly losing to many altcoins in the transaction speed (Li, Wang, 2017).

9. Fees and Financial Costs of Transactions, Including Cross-border Ones

Precious metals are not used for settlements and cross-border transactions (one out of five). Cash payments are conducted without fees. Fees are not charged when conducting cross-border transactions in cash either (five out of five), but the costs of transporting cash to the destination should be taken into account.

Relatively low fees are charged in the case of cashless payments – 0 % to 5 %, depending on the type and method of the transaction (four out of five).

Fees are also charged when making payments and money transfers using cryptocurrencies (two out of five). Transaction costs in cryptocurrency settlements that take place outside the native blockchain (for example, when buying goods and services for cryptocurrency) make up 5 % to 30 % of the transfer amount. The weak integration of cryptocurrencies into the modern financial system is the main problem in this process — the need to convert real money into cryptocurrency before buying goods and services for cryptocurrency. Thus, several conversion operations are required to complete a transaction, each requiring fees (a percentage of the transfer amount and exchange rate spreads) to be paid to intermediaries.

10. Security of the Parties to Transactions, Including Cross-border Ones

The turnover of precious metals is tightly regulated by the monetary laws to control their circulation and protect the rights of investors (3.5 out of five). Documents (certificates and passports of the manufacturer) confirming the origin of the bullions or coins are required when conducting sale transactions with precious metals, along with the weighing procedure and other necessary manipulations confirming the authenticity of the metals.

There are risks of counterfeiting banknotes in cash settlements, but the state and the banking system are actively fighting this (2.5 out of five). The worn cash can be replaced with new banknotes, and the risk of loss is lower than when using precious metals.

Modern banking technologies allow to carry out transactions on accounts quite safely (4.5 out of five). The shortcomings of cashless money in the modern banking system include the fact that the funds from the accounts of individuals and legal entities can be forcibly withdrawn during periods of financial crisis, frozen for various reasons and under various pretexts, etc. A complete loss of money from a bank account is not ruled out if the bank goes bankrupt.

Cryptocurrency users are protected worse than customers of the banking system because the blockchain is decentralized, and all risks associated with transactions are borne by the buyer and seller (3.5 out of five). Cryptocurrency values stored on virtual wallets are easy to lose if the keys are lost due to negligence or as a result of a hacker attack. All operations with cryptocurrencies are irrevocable because there is no financial intermediary or central counterparty that could force the recipient to pay the erroneously spent amount of money back (Mukhopadhyay, 2016).

The level of development of the modern infrastructure in the cryptocurrency market does not yet allow revealing the theoretical advantages of this form of money in practice. Due to problems in the banking system, cryptocurrency holders will face difficulties in using their financial resources.

Finally, in the opinion of the authors, the most significant drawback of the blockchain and all cryptocurrencies is the technological flaw of their protocols. The problem is that the protocol that secures the operation of the blockchain financial mechanism does not set or formalize the rules for verifying a transaction. The time of the transaction is not standardized between the participants because the condition guaranteeing the completion of this transaction is not specified in the blockchain (Caporale, Gil-Alana, Plastun, 2018). Blockchain is built on the basis of voluntary participation and the principles of

decentralization. The blockchain protocol assumes that the transaction verification process can last for an indefinite time, and the miner network can ignore the transaction if the fee specified in its conditions is too small (Liu, 2018). In other words, miners are not required to guarantee processing all transactions, but they will most likely do so within a certain time if mining is economically feasible for them.

Results

The assessment of the strengths and weaknesses of cryptocurrencies in comparison with fiat money and precious metals has revealed that fiat money is the best form of money, which has been quite successfully used for a long time and served at all stages of social reproduction and related financial processes. The study reveals that fiat money (the total money supply in the form of cash and cashless money) surpasses cryptocurrency and precious metals in its consumer properties. The estimated arithmetic average of cash and cashless money (39.25 points out of 50, or 78.5 %) turned out to be higher than the cryptocurrency evaluation (35 points out of 50, or 70 %). As such, developers and programmers, as well as the state and society should do a lot of work to make the consumer value of cryptocurrencies higher than that of the modern fiat money used as the money supply in the basis of monetary circulation.

Cryptocurrencies are presented only in electronic form, while the modern realities indicate that society is not yet ready to completely abandon cash circulation for a number of objective reasons. In this regard, it is obvious that the technological order in the world does not allow cryptocurrencies to completely replace fiat money at the moment (Galushkin et al., 2019). Their existence is undoubtedly possible, but only as a secondary or auxiliary currency fulfilling a specific mission in the money turnover and finance.

The weak integration of cryptocurrencies into the mechanism of the current financial system does not yet allow the use of cryptocurrencies as full-fledged money and, accordingly, to compete with fiat money in all areas of monetary circulation in full either. At the same time, the introduction of any modern cryptocurrency operating on the principles of decentralization creates significant risks for the current model of managing the global financial system. The interest rate of the central bank and its policy in the field of monetary regulation are the most powerful tools for managing economic growth in the modern conditions. The policy of central banks is based on the principles of centralized economic management, i.e., it is carried out with the participation of an independent centralized monetary regulator. The massive shift of consumers to alternatives to fiat currency may limit the ability of monetary authorities to ensure macroprudential stability

and economic growth. In the event that only a certain group of the population completely switches to settlements in Bitcoins, this can lead to fragmentation of the economy; if all citizens at once shift, then central banks will not be able to use the transmission mechanism to boost the economy through the base rate. In addition to this, an unstable Bitcoin rate can lead to depreciation of assets in a short time and thereby provoke bankruptcies and defaults. Therefore, one of the most important challenges for the society in the field of introducing cryptocurrencies and blockchain into the financial system as the main world currency is the development of a new adequate global financial architecture to ensure the stability of the created financial mechanism and the ability to conduct an adequate monetary policy, if necessary.

The weak security of the parties to a transaction using cryptocurrencies is a weak spot of the blockchain as the money of the future and an insurmountable barrier to the complete replacement of fiat money turnover with cryptocurrency. The authors believe that the most important drawback of the modern cryptocurrencies is that the protocols underlying them are insufficiently technologically developed to be massively used in the commodity and money exchange worldwide. The blockchain technology contains nontrivial vulnerabilities and imperfections, the lack of a tight timeframe for conducting a transaction and, even worse, the absence of any guarantees that the transaction will be carried out in the system at all being the most dangerous of them. The reality is that the transactions may freeze, be rejected, or even be lost. It turns out that this problem under certain conditions develops into a more acute threat to the blockchain. For example, there is a risk of a 51% attack as mining pools become larger and more global, due to the exponential increase in competition accompanied by the gradual displacement of small miners from the market. Such problems are solved centrally by an independent regulator in the world of fiat money, and they create dangerous risks and uncertainty for the entire financial system in the world of cryptocurrencies. The solution of these problems is theoretically possible — for example, by adjusting the financial mechanism of the blockchain by switching from the principles of decentralization to more stringent state regulation of the cryptocurrency market and mining. Apparently, this solution involves the gradual loss of the role of the existing cryptocurrencies in the financial market and the creation of new types of cryptocurrencies that will actually be centralized and controlled by the state.

The high volatility of the cryptocurrency market causes a cyclic manifestation of mining gaps and regular failures in the financial infrastructure of the blockchain, which has negative influence on its stability. If these problems exist, the massive introduction of the decentralized blockchain into the financial system and money turnover poses many risks

to the global financial stability and requires better technological development of the financial infrastructure and, possibly, the presence of a centralized market regulator required to smooth out possible negative effects.

Conclusion

Based on the study, it can be concluded that cryptocurrencies are actively being introduced into everyday life by crypto enthusiasts, are still seeking for their place and activation points for the synergistic effect in the financial system, but are not yet ready to completely replace fiat money due to a number of objective reasons. The immediate future of cryptocurrencies is likely to include tougher state regulation and operation in the world of finance as a legal alternative payment system. Perhaps, provided that the technological shortcomings of the blockchain protocol are eliminated, a balanced compromise is found between the decentralized nature of cryptocurrencies and the laws of life in a centralized economy, and the accumulation of necessary experience occurs in the practical application of cryptocurrencies in the field of finance in the more distant future, the role of cryptocurrencies will shift to more significant positions. At the same time, a radical reform of the global financial system and a complete rejection of cash and cashless fiat money are most likely possible only after cryptocurrencies become a more efficient form of money (this requirement is not met at the moment) and a fundamentally new concept of the mechanism of the global finance operation is developed.

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