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**CRYPTOCURRENCIES IN 2019: REALIZING THE DEEP
DIGITAL NATURE, VOLATILITY, AND LEGITIMIZATION
ISSUES**

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Abstract

The history of economic science has repeatedly shown that the transition of the economy to a qualitatively new stage of development very often allows a new retrospective look at the genesis and essence of a number of basic economic phenomena and processes, solves long-term issues and discussions, and on this basis, formulates qualitatively new proposals for the development of business practices. Among these basic general economic problems is the essence and role of money in the development of economic relations. Under current conditions, deep transformational processes of all spheres of human life are carried out due to its transition to the digital neuro-network stage, to the neural-network nano-bio-technological structure, which is formed under the influence of the latest technological revolution. Today, world and Russian science has been given the ambitious task of developing theoretical and methodological foundations of the digital neural network economy. In such an economy, most socio-economic phenomena and processes are digital in nature. Information is an internal substantive characteristic of various socio-economic processes, including money. A variety of cryptocurrencies and digital assets also have an informational nature. They most fully realized the deep essence of money, when the informational content, informational nature (informational value) of money expresses itself in an adequate informational form, getting rid of natural gold, silver and paper features. More broadly, the value of any economic phenomenon is determined by the level, type and amount of relevant information (encoded) in it.

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1. Introduction

Under current conditions, deep transformational processes are being carried out in all spheres of human society, which is due to its transition to the digital neuro-network stage, to the neural-network nano-bio-technological structure, which is formed under the influence of the latest technological revolution. Today, world and Russian science has been given the ambitious task of developing theoretical and methodological foundations of the digital neural network economy.

The old scientific paradigm used to describe the principles and patterns of the industrial market economy is unable to adequately explain the new patterns inherent in the information-network era. Nobel laureate Stiglitz (2003) spoke about the need to change the paradigm of economic theory at the beginning of the XXI century.

This conceptual position formed the basis of the new scientific paradigm that is being developed today, which can be called the substantial information paradigm of the socio-economic development. In such an economy, most socio-economic phenomena and processes are digital in nature (Dyatlov, 1998; Karpunina, Shurchkova, Konovalova, Levchenko, & Borshchevskaya, 2019; Pogorelova, Toymentseva, Ermolaev, Mikhailov, Moiseeva, & Sosunova, 2019) Information is an intrinsic content characteristic of various socio-economic processes, including money. A variety of cryptocurrencies and digital assets also have an informational nature. They most fully realized the deep essence of money, when the informational content, informational nature (informational value) of money expresses itself in an adequate informational form, getting rid of natural gold, silver and paper features (Konovalova, Kuzmina, & Salomatina, 2020; Vishnever, Burganov, & Nusratullin, 2019). And on broader terms, the value of any economic phenomenon is determined by the level, type and quantity of the relevant information (encoded) in it.

In the information society, all socio-economic phenomena (resources, value and wealth) realize themselves in the most adequate, universal way - information form: information resources, intellectual-network capital (status), information services, electronic money, information wealth (Dyatlov, Lobanov, & Gilmanov, 2018; Volkodavova, Zhabin, Yakovlev, & Khansevyarov, 2020).

2. Problem Statement

Bitcoin (BTC) is decentralized digital currency created and working on the Internet based on blockchain technologies. According to FATF (Financial Action Task Force) recommendations, cryptocurrencies are a type of virtual currency. Virtual currency is a digital representation of value that does not have legal tender status in any jurisdiction. It is not issued or guaranteed by any state and performs the above functions only by agreement of users of virtual currency within the network. Virtual currency is separated from the fiat (national) currency, which is coins and paper money assigned by legal tender, circulated and commonly used and accepted as a medium of exchange in the issuing country, and is also separated from electronic money, which is a digital representation of fiat currency.

Virtual currencies can be either decentralized or centralized. Centralized currencies have a single governing body which issues currency, provides a centralized payment register and has the right to withdraw currency from circulation. Cryptocurrency is decentralized virtual currency based on

mathematical algorithms and protected by cryptography methods. Cryptocurrencies are issued and circulated based on distributed ledger technology.

The technology of distributed registries is a system of distributed storage and simultaneous processing and updating of information on different media for all participants, which allows the exchange / storage of almost any information. One of the scenarios for using the technology of distributed registers is the transfer of value (property or other rights) between network participants of distributed registries. In this case, units of accounting, preservation and transfer of value appear in the network, which may be property rights, securities, debt obligations, property rights to certain assets, bonus points, cryptocurrencies, etc. Blockchain is an option of the distributed registries' network in which data on completed transactions is structured in the form of a chain (sequence) of connected transaction blocks. Blockchain technology underlies most popular cryptocurrencies, including bitcoin.

3. Research Questions

What determines the value or purchasing power of cryptocurrency? If initially money, being coins from precious metals, had its intrinsic value, then at a certain stage of development paper money appears in circulation that does not have market value and represents only a receipt for some item. For these receipts to be accepted by society as money, they must draw their value from some other source, such as convertibility to another type of money, such as gold and silver at that moment. As soon as convertibility was called into question, paper money lost its value in relation to gold and silver.

In the case of cryptocurrency, there is the same source from which it gets its value - it is convertibility into fiat money, if this convertibility is called into question by society, then the value or purchasing power of cryptocurrencies is the same fate as paper money - they will lose their value. Therefore, in the issue of converting cryptocurrencies from goods into money, an important place is occupied by the position of monetary authorities of the leading countries on convertibility of cryptocurrencies into fiat money. The price of bitcoin, physically representing as a mathematical hash code (a set of mathematical symbols, a kind of electronic cryptographic record that exists exclusively in computer networks) is formed solely under the influence of speculative demand. This explains its high volatility.

4. Purpose of the Study

The purpose of the study is to use the new substantial information paradigm of the socio-economic development to prove the position that most socio-economic phenomena and processes are digital in nature in the digital neuro-network economy based on the neural-network nano-bio-technological structure. Information is an internal substantive characteristic of various socio-economic processes, including money. A variety of cryptocurrencies and digital assets also have an informational nature. They most fully realized the deep essence of money, when the informational content, informational nature (informational value) of money expresses itself in an adequate informational form, getting rid of natural gold, silver and paper features. Such ideas allow a new retrospective look at the genesis and essence of a number of basic economic phenomena and processes, solve long-term issues and discussions, and on this basis, formulate qualitatively new proposals for the development of economic practice.

5. Research Methods

System-synergetic and institutional methods, methods of analysis and synthesis, and generalization were used in the course of the study. The system-synergetic method allows considering the economy as a complex self-developing system that has passed to the neural-network nano-bio-technological stages of its development. The institutional method analyzes the formation of the regulatory and institutional environment that is adequate to the material content of a new stage of economic development. Quantitative analysis methods allow you to see the dependence of the Bitcoin exchange rate on the state of the institutional environment.

6. Findings

After a sharp 20-fold take-off in 2017 and a dizzying drop in January - February 2018, there is a mixed movement of quotes on the bitcoin market in 2019. According to RBC-crypto, on January 29, the bitcoin exchange rate was \$ 3350, then it reached a maximum of \$ 13970 on June 26, it fell to \$ 8300 in October, and on November 1, 2019 it amounted to \$ 9150 (RBK, 2019).

This market movement took place against the backdrop of multidirectional actions by regulators of the global financial market. Trade relations between the USA and China have become aggravated. The Securities and Exchange Commission in the United States again postponed the decision on the creation of the first FTF for bitcoin in the US, although institutional investors have recently seen an increase in demand for crypto assets. Anonymous cryptocurrency transactions have been banned from the largest Asian digital asset market in South Korea. Strict licensing rules for cryptocurrency exchanges were introduced in Japan. In China, they began to block access to foreign trading floors for their citizens. Qatar has completely banned cryptocurrency transactions. Against the backdrop of numerous hacker attacks and withdrawals in cryptocurrencies, the largest world banks (JP Morgan, Bank of America, Capital One) refused to buy digital assets in their card programs. In Europe, the opposite trend was observed. In Germany, bitcoin was recognized as a means of payment. A whole package of legalizing laws in this area was adopted in Malta. Cryptocurrencies in Switzerland, Gibraltar, Estonia, and Denmark received significant legitimization.

In Russia, there is intensive work on cryptocurrency legislation, but in the fall, in the name of the Russian Union of Industrialists and Entrepreneurs, large businesses sharply criticized these bills and announced their version of cryptocurrency market regulation, which suspended further movement on this issue. The new version of legislation, which appeared in November 2018, lacks regulation on issuing and circulation of existing cryptocurrencies. In this version, the bill regulates the issuance and circulation of digital financial assets (DFA), which means monetary claims, equity securities and rights to participate in capital, issued in digital form.

The Russian Association of Cryptocurrencies and Blockchain (RACIB) offers to divide digital assets into three groups: digital securities, cryptocurrencies and digital signs. Digital securities express obligations and other rights, the exercise and transfer of which is possible only in compliance with securities laws. Cryptocurrency is used as a unit of account, a subject of sale, a means of accumulation, exchange for goods and services in relations with the indefinite number of people. Digital assets that do not fall under the

concept of tokens and cryptocurrencies express property and other rights of owners in the framework of civil contracts.

There is another point of view regarding the nature of CFAS, which includes their composition obligations and other rights, including monetary claims, the ability to exercise rights on equity securities, rights to demand the transfer of equity securities, which are enshrined in the decision on the issue and procedure established by federal law. The issue, registration and circulation of these equity securities are possible in the information system based on a distributed registry. In fact, a digital financial asset should be understood as any property that has been digitized. Cryptocurrencies and tokens are one of the varieties of such assets. For example, in tokens there can be protected records of ownership of real estate created using blockchain, bank guarantees, letters of credit and shares

The presence of mandatory rights suggests that the main emphasis in the law is on tokens and the entire crypto economics will be reduced to the circulation of digital forms of securities. At the same time, companies will be able to issue absolutely any rights on special information platforms (digital stocks, equity securities, digital options and digital bonds). The bill provides the basis for the development of smart contracts and as a result, all contracts will go digital from paper.

At the same time, the adoption of the law creates uncertainty and will require changes in other legal acts. Since tokens can get the right of ownership of any property, a multi-format application of technology arises, affecting almost all aspects related to the right of ownership. And this will require working out the consequences of its adoption for related regulations. At the same time, obligation rights equalize securities and contractual obligations, although the latter may not apply to securities, and as a result, a conflict of circulation regimes may arise. For example, the modes of digital security and the transport card coincide, which will require either simplifying the regulation of security or tightening the transport card mode.

Even though cryptocurrency as a separate object of civil circulation has not been legitimized, transactions with it are possible within the framework of network communities that agreed to recognize its property value. And in the decision of one of the courts it was recognized that it as an asset represents the property value and it can be considered as other property.

7. Conclusion

We can conclude that bitcoin is conditional digital currency, which in most countries is not an officially recognized legal tender and which has limited monetary functions. Investing in bitcoins so far mainly is to get speculative profit.

The international company Worldcore compiled a rating of 15 countries that were ranked by the level of cryptocurrency regulatory rigidity. There are 4 countries in which for any transactions with cryptocurrency you can go to prison for several years: Nepal, Algeria, Bolivia and Bangladesh.

In several countries there are restrictions on certain types of digital transactions:

1. China - ICOs are prohibited, the purchase and sale of cryptocurrencies, as well as their advertising;
2. India - the country's Central Bank banned cryptocurrency transactions for financial institutions in April 2018;
3. Vietnam - the Central Bank banned the issue and use of any digital currencies from January 1, 2018;

4. Indonesia - there is a ban on cryptocurrencies and cooperation with market participants involved in the processing of currency transactions

5. Thailand - 5 key operations with cryptocurrencies were prohibited in February 2018: investing, trading, creating cryptocurrency platforms, using plastic cards to buy them, advising citizens on investments in cryptocurrencies;

6. Kyrgyzstan – there is a ban on cryptocurrencies as a means of payment.

Currently there is intensive work on cryptocurrency legislation in Russia, which is still far from complete. Based on the analysis of emerging patterns of digital economy transformation, we can come to the following conclusion: the digital economy needs digital money. Apparently, it will be neural network cloud money, which in the near future (possibly in the third decade of the XXI century) will replace the usual paper and electronic money.

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