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## **ФЕНОМЕН КРИПТОВАЛЮТЫ И ЕЕ ЗНАЧЕНИЕ В ДЕНЕЖНОЙ СИСТЕМЕ**

### **THE PHENOMENA OF CRYPTOCURRENCY AND ITS IMPLICATION ON THE MONETARY SYSTEM**

**Abstract.** This article briefly covers the nature of blockchain and cryptocurrencies and analyzes the advantages that cryptocurrencies (with specific reference to Bitcoin) have over fiat monetary systems. This article also highlights the features of cryptocurrency that comply with the traditional functions of money. Additionally, the number of Bitcoins in circulation and the effect of Bitcoin volatility in the US dollars and Russian rubles have been examined.

**Key words:** blockchain, cryptocurrency, bitcoins, monetary policy.

New technologies, supported by the recent breakthrough in network computing and digital infrastructure, are encouraging transformational change in the world economy, including in the way the goods, services, capitals and assets are exchanged and traded. An important step forward in this process has been the emergence of cryptocurrencies.

Blockchain is an open-source distributed database that operates with the state-of-the-art cryptography which may organize the work within the system and track all kinds of transactions and interactions. We may say that the system is self-organized and a high level of transparency is guaranteed. The emergence of crypto-instruments has allowed digital monetary value to be transmitted without the need for a trusted intermediary for the first time in history [8, p. 48]. The functional range for blockchain operations is countless and may include simple money transactions or even optimized procurement process.

What practical advantages do cryptocurrencies offer over traditional monetary systems? Obviously, cryptocurrency enables greater speed and efficiency in making payments and transfers as well as the security of financial operations. Moreover, virtual currency questions the paradigm of state-supported fiat currencies and the dominant role that central banks and conventional financial institutions have played in the maintenance of the financial system [4, p. 5]. Apart from being a decentralized alternative to traditional monetary systems, cryptocurrencies also require lower costs in performing financial transactions because there is no intermediary (bank) in the process.

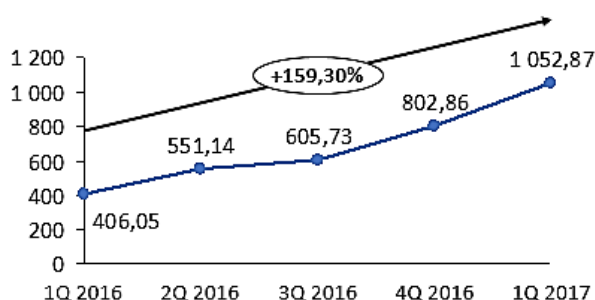
However, despite all obvious advantages, virtual currencies still have significant implications for monetary policy, as they lack several crucial features that stable monetary regimes are expected to provide. These include at least two key monetary stability risks: the risk of structural «deflation» and flexibility to respond to the rapid changes in money demand [4, p. 12]. Another issue to consider is that cryptocurrencies have a high potential for tax evasion what requires a development of effective means of enforcement.

What is the main difference between traditional money and cryptocurrency? The former has its value and legal status based on supply/demand relationship and government's regulation. Unlike traditional fiat money, the latter is decentralized and it is operated and governed by cryptographic protocols [2, p. 267]. Fiat money loses its value once it loses support from the government that issues it, but cryptocurrency maintains its value without government help.

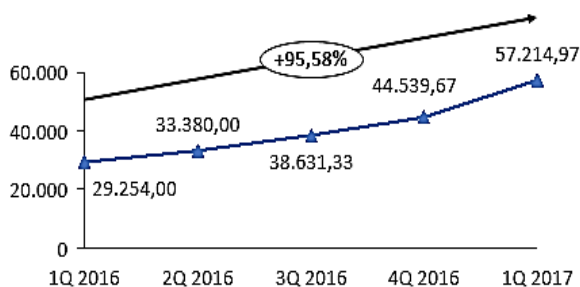
With cryptocurrency's popularity growing fast and with the companies' quest for efficiency, increasingly more businesses now accept bitcoin payment. These businesses come from a wide range of industries, namely e-commerce, education, food, travel and many others. This means that cryptocurrency has been accepted as medium of exchange what is considered to be the main function of money. However, in terms of being a stable unit of account, the volatility of bitcoin prevents public from implementing bitcoin in their daily use, and hinders the long-term growth of the currency as a major alternative to the traditional money. Cryptocurrency's price

fluctuates against fiat currencies all the time and it probably cannot be considered as a stable store of value [1, p. 405].

We took value of bitcoins as an example for high fluctuation rate and analyzed its average quarter price in the US dollars and Russian rubles. According to the *Graph 1*, the value of one Bitcoin has been moderately increasing during the last year, mainly because the demand for the digital currency has risen, driving up its value and, therefore, daily transactional volume has also increased worldwide. Both currencies, the dollar and ruble, suffer from inflation, while Bitcoin is deflationary by its nature. Besides, if dollar loses in real value approximately 3% annually and Russian ruble continues to depreciate due to sanctions, then the Bitcoin's value in dollars and rubles will grow in proportion. Another reason for steady growth is that the digital currency movement is taking hold. With global access to the world web, and recent economic collapses of paper currencies (for example, economic crisis in Greece, Cyprus, Argentina and some other countries), even the more significant interest exists among developing economies in a more stable economic system that is not so prone to failure after failure. For instance, China is working on its own digital currency and, arguably, this country is not the only one.

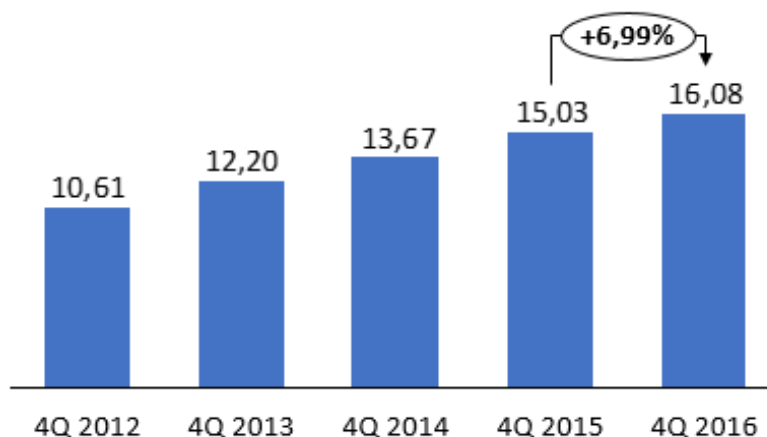


Graph 1 – The growth of Bitcoins to US Dollars [5]



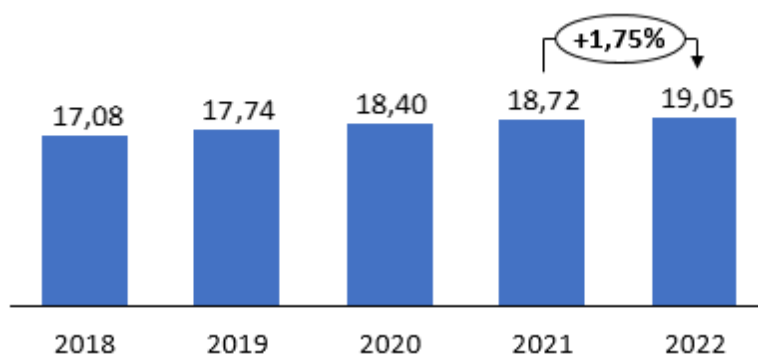
Graph 2 – The growth of Bitcoins to Rubles [5]

The total dollar value of all bitcoins in circulation, according to the figures in the *Graph 1* and *Graph 3*, in the fourth quarter of 2016 was 12,89 billion of dollars. In addition to that, the number of Bitcoins in the economy in 2016 went up by almost 7%, constituting for 16,08 million units.



Graph 3 – Number of Bitcoins in circulation worldwide in millions [5]

According to the IMF forecast, the number of Bitcoins in circulation is expected to grow moderately during the next 5 years with an average annual growth rate of 2,77%. If the value of one Bitcoin is about 1 000 US dollars, then in 2022 Bitcoin will reach 19-billion-dollar capitalization.



Graph 4 – The IMF forecast of the number of Bitcoins in circulation for the next 5 years [4, p. 43]

Having studied the Bitcoin fluctuation and its growing circulation, we may assume that the nature of the ever-increasing complexity of the Bitcoin algorithm is making it more and more challenging for the IMF to gain some sort of control over

the blockchain-based currency to maintain economic stability and protect the fair exchange rates of national currencies which can be put at risk of losing their value.

Currently, the central banks of different countries analyze the potential benefits caused by the blockchain technology and even experiment with digital currencies to build up their own infrastructures [7, p. 13]. A large number of central banks, including the Central Bank of Russia, are searching for the option to issue their own blockchain-based virtual currency [3, pp. 240-250]. In 2016 the Russian Central Bank, for instance, had been studying the existing ways to allow commercial banks to record and store data of all their transactions on a blockchain.

Considering the fact that central banks have already started working on a policy for blockchain opportunities, we believe it is only a matter of time before central banks start issuing their own digital currencies.

The blockchain as well as cryptocurrencies create both opportunities and challenges for countries. The advantages of cryptocurrency mainly include reduced transaction costs, improved security and a transparent community with easy access. However, globally it is unregulated by the international organizations, such as IMF, and not monitored by any central bank, providing less control over monetary policy and, therefore, more repercussions. Overall, it is worth to study and investigate monetary policy of cryptocurrency, because by learning from the lessons of traditional monetary policy, we may be able to develop a tool that is particularly targeted at cryptocurrency and aimed at solving problems with its price volatility and market confidence.

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