

CRYPTOCURRENCY: NEW TRENDS OF FINANCIAL DIGITALIZATION

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The active development of information technology and the spread of globalization processes contributed to the emergence of new varieties of digital money, which today has become a new challenge to the customary traditions of money circulation and is transformed into a purely conditional (virtual) reality and a key element of the virtual economy. Among the digital money it is important to distinguish the cryptocurrency – a digital currency protected by cryptographic technology. The urgency of scientific research on the use of cryptocurrency in the monetary sphere is conditioned by the institutional problems faced by society in the process of information economics and e-commerce development. Mainly those are the problem of trust, volatility, determination of the legal status of cryptography, risks of information attacks, bans from individual states, etc.

There are several approaches to the definition of crypto currency. The most common is that crypto currency is a digital (virtual, electronic) currency, consisting of coins, is counterfeit, encrypted information that cannot be copied. For cryptocurrency there is no emission center, and its emissions are based on cryptographic methods and “proof-of-work” scheme. The actions are decentralized in the distributed computer network. It is not secured and is based on a purely trust of users. Its main advantage is anonymity meaning that one can store it in electronic purses and transfer it between purses.

Crypto currency is emitted directly to the electronic network and is not connected with any "ordinary" currency or with any national currency system. Thus, the term "cryptology" refers to the term "electronic money," and not the term "money" as the base category. As it was noted crypto currency is based on the blockchain and “proof-of-work” scheme. Blockchain is a particular type or

subset of so-called distributed ledger technology (“DLT”). DLT is a way of recording and sharing data across multiple data stores (also known as ledgers), which each have the exact same data records and are collectively maintained and controlled by a distributed network of computer servers, which are called nodes. Blockchain is a mechanism that employs an encryption method known as cryptography and uses (a set of) specific mathematical algorithms to create and verify a continuously growing data structure – to which data can only be added and from which existing data cannot be removed – that takes the form of a chain of “transaction blocks”, which functions as a distributed ledger. Blockchain as a technology may be of two forms – open, permissionless blockchain and permissioned blockchain. The key difference is the necessity to receive a permission of administrator to join or leave the network.

A cryptocurrency market involves a number of actors that play a certain role on it. The key of them are the following: cryptocurrency users, miners, exchangers, trading platforms, wallet providers, coin inventors, coin offerors. Today, there are more than 2,000 cryptocurrencies, more than 600 of them active. The most popular ones are Bitcoin, Ethereum and Ripple which exist both as money and as payment systems. According to the data from the Coin Market Cap website, the total market capitalization in 2019 amounted to \$287 billion, while bitcoins account for 57% of the total market value and ethereums for 10% of the total market value. The detailed information on the 10 most popular cryptocurrencies by their capitalization is laid in Table 1.

Table 1. Top 10 Cryptocurrencies by Market Capitalization as of June 2019

<i>Name</i>	<i>Market Capitalization</i>	<i>Price</i>	<i>Circulating Supply</i>
Bitcoin	\$162 869 617 748	\$9 166,77	17 767 387
Ethereum	\$28 671 530 072	\$269,09	106 551 703
XRP	\$18 479 214 809	\$0,434785	42 501 950 124
Litecoin	\$8 611 213 840	\$138,24	62 290 575
Bitcoin Cash	\$7 443 558 159	\$417,10	17 846 038
EOS	\$6 366 214 958	\$6,92	919 736 127
Binance Coin	\$4 980 161 701	\$35,28	141 175 490
Bitcoin SV	\$4 025 231 643	\$225,58	17 843 923
Tether	\$3 530 208 921	\$1,00	3 529 784 845
Stellar	\$2 446 556 602	\$0,126053	19 408 944 001

Despite the relative level of transaction security and third-party independence, the legal status of cryptocurrency in different countries is significantly variable. One of the key questions that remain is whether central banks of leading countries recognize such currency. The positions of foreign central banks and other financial regulators in relation to crypto and markets are different. Since April 2017, with the adoption of the relevant law in Japan,

cryptocurrency became officially not a monetary means of payment. For the purpose of federal taxation, cryptocurrencies in the USA are considered as property. Sale and exchange activities are subject to banking secrecy laws. Operations for the issue of cryptographic goods may in some cases be classified as placement of securities. In China cryptocurrency is considered as a non-monetary digital asset. Public placement of cryptographic goods is prohibited (the People's Bank of China on September 4, 2017 recognized ICO as illegal and ordered to immediately stop all operations with the placement of tokens in the country). Individuals are allowed to store cryptocurrency and operate transactions. Such a reaction of the financial regulator of China turned out to be quite the opposite of the United States and the EU.

Countries of the EU also have different approaches for the cryptocurrency regulation process. Thus, the legislation of Germany permits cryptocurrency to be a financial instrument that acts in the form of "private money" that can be taxed. For retailers who accept bitcoins as payment for goods, transactions for the sale of the product itself, as well as operations for the sale of bitcoins, which are accepted when making a purchase, are taxed. In Switzerland bitcoin is not forbidden. At the same time, there are no clear standards for using such currency. In the Netherlands cryptocurrency is considered as a means of payment, and in case of sale as an independent object – as a commodity. When completing tax returns, owners of cryptocurrency are required to take into account their value in the section "capital". In Norway cryptocurrency is not considered a monetary asset and is treated as a financial asset that is subject to property taxation. In Poland mining, sale and purchase of cryptocurrency are considered one of the types of commercial activity and are subject to registration in the authorized body. In Estonia such currency is considered as an alternative means of payment and operations with cryptocurrency are not prohibited.

The growth of capitalization of major cryptographic markets attracts the attention of investors who seek to multiply their own financial resources. Key approaches for evaluation of the exchange rates of cryptocurrencies are the following – system approach, inductive approach and time series modelling, fundamental analysis and neural systems. There also several indices elaborated by different institutions that are aimed to measure cryptocurrency. Among them are CRIX, DLT10, TradeBlock, NYSE indexes, etc.

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