Cryptocurrency: analysis of its usage and prospects

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Abstract. This project deals with the basic information regarding cryptocurrency, determining its main features such as decentralization, block mining, responsive scaling, cryptography, anonymity, cost and some others. The article also presents a few characteristics of cryptocurrency, such as its variation from fiat money, possibilities for income gain by investing in crypto. Besides, it contains the information that can be of great help in distinguishing such terms as crypto tokens and cryptocurrencies. There is an analysis of significant factors that need to be done before investing in any cryptocurrency in the current market. The experimental part of the project involves the analysis of the real investment made by the authors of the article to put the theory into practice in order to see that the analytical and theoretical information is useful and time-tested. This analysis allows discussing both the advantages and disadvantages of cryptocurrency usage and deriving the conclusions regarding the possibility of further transition from fiat money to cryptocurrencies.

Keywords: cryptocurrency, token, decentralization, blockchain, investments

Криптовалюта: оценка использования и анализ перспектив

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Аннотация. В данной статье анализируется и классифицируется основная информация, связанная с концептом криптовалюты, выделяются основные характеристики криптовалюты, такие как децентрализация, необратимость платежей, криптография, изменение стоимости, анонимность и т. д. Кроме того, в статье представлены некоторые особенности, позволяющие объяснить её отличие от традиционных неразменных бумажных денег, токенов, возможность получения дохода от инвестирования в криптовалюту и т. д. Приводится анализ существенных факторов, влияющих на возможность инвестирования в криптовалюту и на выбор той или иной криптовалюты для инвестирования. Экспериментальная часть исследования содержит анализ реального авторского инвестирования с целью применить обсуждаемые теоретические положения на практике и проверить достоверность использования этих методик. Данный анализ даёт возможность выявить преимущества и недостатки использования криптовалюты, а также оценить вероятность полного перехода от неразменных бумажных денег к системе криптовалют.

Ключевые слова: криптовалюта, токен, децентрализация, блокчейн, инвестиции

The goal of our research is to study pros and cons of using different types of cryptocurrency. To achieve the goal, the authors defined the main tasks of the research as follows:
- to study the notion of cryptocurrency;
- to determine its main features;
- to present positive and negative features of using it;
- to analyze the possibility of the idea to substitute real money for cryptocurrency.

Cryptocurrency (or crypto) is usually defined as digital money which has no fiat counterpart (that means such money does not exist in the form of banknotes, coins or other kinds of physical money). The basic feature of the cryptocurrency is its decentralization, that is, lack of dependence on the single control center.

These features, namely lack of fiat counterparts and decentralization, are due to the blockchain technology which principles allow cryptocurrency to function. Blockchain is a network the nodes of which are not controlled by the single center and form an autonomous system for storing information [1–5]. The mail blockchain principles can be determined in the following way.

Decentralization. It is the dispersal of its main resources (data) around the world with multiple duplications to prevent their losses. The data chain (blockchain) is not stored on one main server, but it is located simultaneously on many users' computers around the world. It means that it has no single control center.

Block Mining. Block mining is the process of attaching new transaction records as blocks

to the blockchain. In the process – using bitcoins as an example – new bitcoins are produced, adding to the total number of coins in circulation. Mining requires a specific piece of software that is used to solve mathematical puzzles, and this validates the legitimate transactions which make up blocks. These blocks are added to the public ledger (blockchain) about every 10 minutes. As the software solves transactions the miner is rewarded with a definite amount of bitcoins. The faster a miner's hardware can process the mathematical problem, the more likely it is to validate a transaction and earn the bitcoin reward.

Responsive scaling. Let us consider the following example: the bitcoin mining algorithm is adjusted depending on the number of blocks mined in a certain time. It is envisaged that under certain conditions the offer time is limited, as well as the reward for mining decreases (when the production volumes increase greatly).

Cryptography. For cryptocurrencies, a special data encryption system is used, thanks to which the number of coins created can be kept under control, as well as transactions during exchange and settlements can be carried out.

Anonymity. Cryptocurrency wallets are encrypted, the owners get access to them using special identifiers that have nothing to do with the person's identity and real data. Information about transactions is publicly available, but the data are impersonal and do not lead to the owner of the cryptocurrency.

Cost. The price of a cryptocurrency is determined by the amount of work that needs to be done to mine tokens; the shortage and demand for coins can change this value. This pricing option is called a proof-of-work system. There is also a proof-of-stake option for coin verification.

The theoretical material discussed above allows the authors to derive the following conclusions concerning the difference between common fiat money and cryptocurrency:

1) the most significant difference between cryptocurrency and fiat money is that one can transfer cryptocurrency to any place in the world without the need to go to the bank or to pay a huge amount of taxes;

2) another distinction is its volatility. The price of the Bitcoin, for instance, has changed solidly for the past 2 years; it increased more than 11 times whereas the Exchange Rate of the US Dollar is about 18 % more than it was in 2019. Cryptocurrency price depends highly on the people's trust which determines the demand for it and, what's more important, crypto does not depend on the central banks, foreign policy of any state and precious metals prices.

When speaking about cryptocurrencies, one often uses two notions: token and cryptocurrency itself. It is necessary to differentiate between these terms in order to avoid mixing them.

Tokens – which can also be referred to as crypto tokens – are units of value that blockchain-based organizations or projects develop on top of existing blockchain networks. While they often share deep compatibility with the cryptocurrencies of that network, they are a wholly different digital asset class. Cryptocurrency is the native asset of a specific blockchain protocol, whereas tokens are created by platforms that build them on top of those blockchains. The most widely used token standard is ERC-20. In short, I can be said that the main differentiation between these two notions is that cryptocurrencies have their own blockchains, whereas crypto tokens are built on an existing blockchain.

The main advantage of cryptocurrencies and tokens that is advertised widely nowadays is that one can invest in them and it may increase the income greatly. But if a person's actions and decisions are made thoughtlessly then the result will be disastrous. The most significant thing a person needs to do before investing in any tokens or crypto is to explore deep into them. Firstly, one must examine the project behind the coin. The idea of the project should be creative, that is, it has to be unique at the current market having a great level of competitiveness. Secondly, a person must study the graphs. Obviously, it's better not to buy coins when the price is in a high position because this action can cause even greater risks of losing money. Thus, the best way to choose the acceptable price is to compare points on a graph at different periods of time to predict the future price. But even this action cannot predict how the coin scale will actually move. The price can both rapidly rise and collapse [6–8].

To explore deep into the subject the authors decided to conduct an experiment and invest in a token called PancakeSwap (CAKE), the advertising logo of which you can see in Fig. 1.

The authors started from conducting the research of the project itself. It seemed to us

quite promising as Binance (the biggest crypto exchange) also invested in this project around 350 000 dollars. Then they studied the graph [9–10] (Fig. 2) and discovered that the price at its highest reached 19 dollars.

Fig. 1. The Logo of PancakeSwap (CAKE)

Fig. 2. The Graph of Changes in PancakeSwap's Price

Fig. 3. Stabilization of PancakeSwap's Price

The authors watched the price variances for a few days and noticed the fall in the price; it was below 9 dollars. However, afterwards the definite stability was noticed and when the price stabilized at around 11 dollars 20 % of our starting capital was invested in PancakeSwap on the 9th of March (Fig. 3).

A month later the current price of a CAKE token was equal to 23 dollars which is 109 % higher than the price of the purchase (Fig. 4).

Fig. 4. The Rise of PancakeSwap in a Month

After all, we can say that investing in cryptocurrencies has a high level of risks but if you understand and study the features of the crypto market then you have the opportunity to invest successfully.

Thus, the advantages and disadvantages of cryptocurrency discussed in the article let the authors move on to a very important issue that is widely debated nowadays: Will cryptocurrency replace money? The question is very complicated and no one can tell for sure whether it is possible or not. But all the pros and cons of such a transition can be summed up.

As for the cons, they are as follows:
1) low fees of transferring money abroad;
2) absence of inflation;
3) decentralization;
4) anonymity (can be both a positive and a negative factor);
5) high level of protection.

But the cons presented show the shortcomings of this system:
1) low level of trust among a large number of people;
2) anonymity can be a huge problem as well. Nowadays, some people buy drugs, weapons, private data of individuals or even companies using Bitcoins or other cryptocurrencies;
3) the main negative aspect that overlaps the lion's share of advantages is a tremendous level of volatility.

According to all these facts it can be said that the transition from regular money to cryptocurrency may be impossible in today's world. But at the same time, cryptocurrency is an excellent tool for achieving financial goals and also an excellent field for development in modern technologies.

In conclusion, it is necessary to say that during this project the main features of cryptocurrencies, the difference between tokens and cryptocurrencies were determined; besides, pros and cons of using them were outlined. The important thing of the project was applying knowledge in practice by investing in one of the crypto tokens and deriving the valuable conclusions from it. Moreover, it was found out that the shift from fiat money to cryptocurrency is a very complicated process and such a transition may not be seen in a few years. But the authors still think that cryptocurrencies and the blockchain system are people's nearest future and they should be studied thoroughly in order not to be left on the sideline of technological progress.

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