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## PROSPECTS AND RISKS OF USING CRYPTOCURRENCY IN THE MODERN ECONOMIC SPACE

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The modern information society required the emergence of a new financial means of payment. This means of payment is more innovative than conventional money. This means is called cryptocurrency. The purpose of the article is to assess the prospects and risks of using cryptocurrencies in the current economic environment. The modern information society required a new financial means of payment. This innovative means of payment was a new digital currency – cryptocurrency. Cryptocurrency is digital money used instead of real money. At the same time, cryptocurrencies will not be able to completely replace national currencies in the near future. This is due to the prohibition of certain countries. A serious threat posed by cryptocurrencies is the possibility of illegal activities. Confidentiality and security of cryptocurrency transactions are high. Therefore, the government cannot track any user by their wallet address or monitor their data. Cryptocurrencies can be used to pay for smuggling, drug trafficking, human trafficking, arms sales, and terrorist financing. The risks of cryptocurrencies are also the bankruptcy of exchanges, which will lead to a drop in the cryptocurrency rate and the lack of guarantees. Traditional money is guaranteed by state assets, while cryptocurrencies are not. Cryptocurrencies can be considered a revolutionary tool in the field of monetary payments. Cryptocurrency is a serious competitor to traditional currencies. The high volatility of cryptocurrencies allows them to be used as one of the instruments of an investment portfolio. However, the trends traced in the article suggest that the role of electronic means of payment will continue to grow steadily over time. Today, cryptocurrencies are acquiring such properties as riskiness, decentralization, and alternative nature compared to fiat money. The results of the study prove that despite the multidirectional trends, the role of cryptocurrencies will continue to grow steadily.

**Keywords:** risks, volatility, “new economy”, bitcoin, diversification, blockchain, cryptocurrency.

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### *Problem statement*

The “new economy”, as it turned out, is not a new economic system and the emergence of new means of payment. This can be called one of the world’s breakthroughs, along with the transition from barter exchanges to commodity-money exchanges. However, it can also be seen as a step towards the abyss. Let’s take a look at what cryptocurrency is and what advantages and disadvantages it has.

### *Analysis of the latest research and publications*

Since the emergence of cryptocurrency, there has been controversy over the feasibility of its use. There are a large number of publications on this issue. In particular, in 2023, such scholars as: Alekseenko V. Y., Ogynok S. V., Petkanych M.-V. M., Pylypenko O. V., Prysniak S. O., Savchuk N. V., Tymchak M. V., Yanko K. V., and others.

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**The purpose of the article**

The purpose of the article is to study the prospects and risks of cryptocurrencies for the world and Ukraine, for society and the environmental situation.

**Presentation of the main material**

The modern information society required the emergence of a new financial means of payment that is more innovative than ordinary money. This means of payment is a new digital currency, namely cryptocurrency. The foundation for the emergence of this type of finance began to emerge at the end of the twentieth century. In 1983, the concept of electronic money was proposed and published (by Stefan Brands and David Chaum). This concept founded the area of

the economy in which cryptocurrencies directly exist and are sold. A little later, the company DigiCash, which was founded by David Chaum, first developed and started working with the cryptographic system. This was necessary to ensure unknown and anonymous transactions. In 1997, A. Buck developed the basis for the blockchain system and entire blockchains. This framework made a big step for the emergence of cryptocurrencies. The “fathers of bitcoin” were described in their concepts by Nico Sab and Wei Dai in 1998, they were the first to present a description of the concept of the first cryptographic finance [3, p. 70]. The periodization of the cryptocurrency market development is presented in the table.

**Evolution of the cryptocurrency market**

Stages	Essential characteristics	Features
Stage I, 1983	the emergence of the idea of electronic money	by Stefan Brands and David Chaum. In addition, Mr. Chaum insists that it is necessary to create a system that would allow storing confidential data on the Internet. At the same time, it would provide electronic signature capabilities
Stage II, 1990	Cryptography for confidential payments has started to be used in David Chom’s DigiCash system	The company went bankrupt in 1998. This payment system was centralized!
Stage III, 1997–1998	creating the basis for the blockchain system and chains	
Stage IV, 2009–2010	the birth and emergence of the first cryptocurrency	The term “cryptocurrency” was first used after the emergence of the peer-to-peer payment system Bitcoin. It was developed in 2009 by a person or group of people under the pseudonym Satoshi Nakamoto and uses SHA-256 hashing and the proof-of-work system.
Stage V, 2011–2013	promotion of cryptocurrencies on exchanges	
Stage VI, 2013–2016	Recognition and start of regulation by central banks	
Stage VII, 2018	The Australian city of Agnes Waters became the first city in the world to allow cryptocurrency payments. In the first six months of 2018, hackers stole \$1 billion worth of cryptocurrencies	In the city, you can pay with bitcoins (Bitcoin), Bitcoin Cash (Bitcoin.Cash), ether (ETH/US), litecoins (LTC/USD), and NEM. In cooperation with the French Polynesian government, a non-governmental organization consisting of philanthropists, scientists, and investors is working to create an alternative to modern countries – the Floating Island Project. This program involves the creation of an artificial island with houses for 300 residents. The entity will have its own government, and the local money will be the Varyon cryptocurrency
Stage VIII, 2020	The hacking of the KuCoin crypto exchange (according to various estimates, the losses amounted to \$150 million to \$280 million). At the end of 2020, the Verkhovna Rada of Ukraine passed the law on virtual assets in the first reading. It legalizes the status of cryptocurrencies, mining, and other related issues	
Stage IX, 2021	Turkey has introduced a ban on cryptocurrencies. China has completely banned any operations with cryptocurrencies	In Turkey, only some banks are allowed to deposit Turkish lira on cryptocurrency exchanges, but without providing deposit or withdrawal services. At the end of September, China labeled cryptocurrencies as illegal financial activities
Stage X, 2022	The President of Ukraine signed the Law on Virtual Assets, and the Ukrainian authorities began cooperation with representatives of the crypto sector amid a full-scale Russian invasion	In early May, Zelenskyy announced the creation of a global initiative called United24, which allows countries, businesses, and concerned individuals to donate to support Ukraine during the war in fiat currencies and cryptocurrencies. Over \$25 million was raised during the first week

Source: compiled based on data from [3]

Globalization processes, the development of IT technologies and the computerization of all sectors of the economy, without exception, contribute to the improvement and progress of national financial systems, the emergence of new financial institutions and modern instruments in the financial market. The emergence and rapid spread of virtual money directly in the form of cryptocurrencies has become a powerful innovation in the financial world. This has led to the emergence of both supporters and opponents of the widespread use of cryptocurrencies [2, p. 26].

A cryptocurrency is a type of digital or virtual currency that uses cryptography to ensure payment security. It is completely decentralized, meaning that it is not controlled by any government or specific financial institution. Instead, it works on the basis of a distributed ledger technology called the blockchain. Cryptocurrency has no direct physical form. This money is stored in a special database called a blockchain. This means of payment is used all over the world alongside conventional national currencies.

It is worth noting that the blockchain itself is not an ordinary electronic wallet, but a database (a collection of information about user accounts). This database is organized in a certain way in the form of a chain of consecutive records of all transfers. The storage of information in the blockchain is distributed (each participant has its own copy of the data) and protected from tampering by cryptographic means.

The blockchain consists of blocks. One block is a list of several confirmed transactions. Blocks are created by miners, and it takes a certain amount of time. In the Bitcoin blockchain, a block is generated once every 10 minutes, and in the Ethereum blockchain, once every 15 seconds. Each block has its own unique number, the ID, which is protected from substitution by the presence of a cryptographic “hash”.

A token is a unit of a particular cryptocurrency. A token can be a single currency on a blockchain (e.g. bitcoin on the Bitcoin blockchain) or use someone else’s blockchain (e.g. Tether USD on the Ethereum blockchain). In this case, smart faucets are required to allow the tokens to enter. The main cryptocurrencies today are:

- Bitcoin – the very first cryptocurrency that began to exist in 2008. It still remains the most popular cryptocurrency in the world, although its share is constantly decreasing (currently about 21 million coins);

- Altcoins are all cryptocurrencies that have been issued after Bitcoin (approximately 84 million coins). The first altcoins appeared in 2011, as Litecoin and Namecoin coins.

To identify the general trends of the most popular cryptocurrencies today, we compared bitcoin with other common cryptocurrencies. Based on the data from GoogleFinance [6, 7], two analytics were created by direct request (Fig. 1-2).



Fig. 1. Bitcoin exchange rate, euros (until mid-October 2023) [5]



Fig. 2. Comparison of bitcoin with other popular cryptocurrencies, euros (until mid-October 2023) [5]

Fig. 1-2 show that the general trends of the most popular cryptocurrencies today are the same. Cryptocurrencies are designed to be fast, secure, and efficient means of payment. Cryptocurrencies have low transaction fees and the ability to be used for international payments.

Cryptocurrency is digital money. A consumer uses real money to buy things. People use cryptocurrencies to buy necessary things and services. Unlike paper or metal coins, cryptocurrency is just a computer code. It is specific because it is designed to be really reliable and to minimize the risks associated with fraud or simply theft. Cryptocurrency is not controlled by anyone, so no one can simply print more of it, as they do with regular money. Cryptocurrencies are stored in a so-called blockchain, which is similar to a large secure database that tracks all transactions.

A serious threat posed by cryptocurrencies is the possibility of illegal activities. Because the privacy and security of cryptocurrency transactions are high, it is difficult for governments to trace any user to their wallet address or monitor their data. Thus, cryptocurrencies can be used to pay for smuggling, drug trafficking, human trafficking, arms sales, and terrorist financing. The risks of cryptocurrencies are also the bankruptcy of exchanges, which will entail a drop in the cryptocurrency rate and the lack of guarantees. After all, while traditional money is guaranteed by state assets, cryptocurrencies have no such guarantees. Cryptocurrencies can be considered

a revolutionary tool in the field of monetary payments, which is a serious competitor to traditional currencies. It is worth noting that such advantages of cryptocurrencies as a high level of security, decentralization, transparency, speed and convenience of operations are the main factors in choosing cryptocurrencies as a means of payment for a modern person. The disadvantages include volatility and the lack of guarantees of safety of funds. This makes people hesitate before making a decision to use cryptocurrency.

This creates uncertainty about the future of cryptocurrencies. This currency is increasingly penetrating our daily lives and is a serious development incentive for traditional currencies, as well as the use of payment methods [2, p. 28]. Adding cryptocurrencies to an investor's portfolio can provide an opportunity to diversify and reduce the overall risks associated with investing in a particular project. At the same time, given the potentially high yield of cryptocurrencies, this can be an attractive opportunity for potential investors. It is worth considering the risks associated with investing in cryptocurrencies. This means that the value of cryptocurrencies can change rapidly, which causes a risk of losing the invested funds.

The study by Ogynok S. V. and Yanko K. V. [4, p. 188-190] is noteworthy, as they prove that the biggest problem of cryptocurrency is not its volatility, but the amount of electricity consumed during mining. This is a direct threat to environmental safety. The

amount of e-waste has grown exponentially since the beginning of bitcoin. The volatility of cryptocurrencies depends on several factors that influence their price dynamics. Here are some of the key factors that affect cryptocurrency volatility:

a) market supply and demand: the volatility of cryptocurrencies often depends on the level of supply and demand in the market. Changes in trading volumes, buying and selling activity can lead to significant fluctuations in cryptocurrency prices;

b) regulatory decisions: government regulation and legislation regarding cryptocurrencies may affect their volatility. Announcements of new rules, restrictions, or bans can create price fluctuations and uncertainty in the market;

c) technical aspects: cryptocurrencies are built on blockchain technology, and technical aspects can affect their volatility. Changes in protocols, hacker attacks, security issues, or technical flaws can have a major impact on the price of cryptocurrencies:

d) media news and publicity: Media news and the general publicity surrounding cryptocurrencies play an important role in the volatility of cryptocurrencies. The emergence of new regulatory announcements, significant events, positive or negative news can cause sharp price fluctuations;

e) geopolitical and economic factors: Global events, such as political conflicts, economic crises, or currency changes, can also affect cryptocurrency volatility. They can cause uncertainty in the market and disturbances in investment sentiment [1, p. 525].

Cryptocurrencies are a modern risky, decentralized instrument that can be seen as an alternative to precious metals and, under certain conditions, can be considered as a set of investment projects. Cryptocurrencies can be an equivalent of fiat money. Trends in current economic realities confirm the prospect of an increasing role for cryptocurrencies in the global economy.

### Conclusions

The authors conclude that cryptocurrencies will not be able to displace national currencies in the near future, primarily due to direct bans by some countries. The reason for this is the outright bans imposed by some countries. Also, its high volatility allows it to be used only as one of the instruments of an investment portfolio. In addition, the environmental impact of mining, i.e., the creation of new structures related to the operation of cryptocurrency platforms, remains unresolved. Today, cryptocurrencies are acquiring such properties as riskiness, decentralization, and alternative nature compared to fiat money. The results of the article prove that, despite the multidirectional trends,

the role of cryptocurrencies will continue to grow steadily.

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## ПЕРСПЕКТИВИ ТА РИЗИКИ ВИКОРИСТАННЯ КРИПТОВАЛЮТИ В СУЧАСНОМУ ЕКОНОМІЧНОМУ ПРОСТОРИ

Пожуєва Т.О., Бугрім О. Ю.

Сучасне інформаційне суспільство потребувало появу нового фінансового засобу платежу, більш інноваційного, ніж звичайні гроші. Цим засобом платежу стала нова цифрова валюта, а саме криптовалюта. Мета статті – оцінювання перспектив і ризиків використання криптовалют в сучасних економічних умовах. Сучасне інформаційне суспільство вимагало появи нового фінансового засобу платежу, більш інноваційного, ніж звичайні гроші. Цим засобом платежу стала нова цифрова валюта, а саме криптовалюта. Криптовалюта – це цифрові гроші, які використовують замість реальних грошей, щоб купувати те, що людині потрібно. В той же час криптовалюта не зможе найближчим часом повністю витіснити національні валюти, перш за все через прямі заборони окремих країн. Серйозною загрозою, яку несе криптовалюта є можливість здійснення незаконної діяльності. Оскільки конфіденційність і безпека транзакцій з криптовалютою є високими, уряду важко відстежити будь-якого користувача за адресою його гаманця або стежити за його даними. Таким чином, криптовалюта може використовуватись для оплати контрабанди, наркотиків, торгівлі людьми, продажу зброї, фінансування тероризму. Ризиками криптовалют також є банкрутство бірж, що потягне за собою падіння курсу криптовалют і відсутність гарантій – якщо традиційні гроші гарантовані державними активами, то криптовалюти ні. Криптовалюту можна вважати революційним засобом у сфері грошових розрахунків, який є серйозним конкурентом традиційним валютам. В статті наголошено, що висока волатильність криптовалюти дозволяє її використовувати лише як один з інструментів інвестиційного портфелю. В сучасних умовах криптовалюти набувають таких властивостей як ризикованість, децентралізованість, альтернативність у порівнянні з фіатними грошима. Результати дослідження доводять, що незважаючи на різнонаправлені тенденції роль криптовалют продовжить невпинно зростати.

**Ключові слова:** ризики, волатильність, «нова економіка», біткоїн, диверсифікація, блокчейн, криптовалюта.

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