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THE CORRELATION BETWEEN THE FORMATION OF THE DIGITAL ECONOMY AND THE EMERGENCE OF CRYPTOCURRENCY
ВЗАЄМОЗВ'ЯЗОК МІЖ ФОРМУВАННЯМ ЦИФРОВОЇ ЕКОНОМІКИ ТА ПОЯВОЮ КРИПТОВАЛЮТИ

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Abstract. The article explains the concepts of digital economy and cryptocurrency. The categorical apparatus for studying the relationship between the development of the digital economy and the functioning of cryptocurrency is developed. It is found that the digital economy and cryptocurrency are two important aspects of the modern economic landscape of the world economy. The essence of their relationship is manifested through blockchain and cryptography technologies. It is substantiated that the digital economy and the introduction of a new monetary instrument, cryptocurrency, are caused by the fact that it can facilitate global exchange and cross-border transactions. It is found that blockchain technology is economically sound and opposes modern financial systems, which are burdened with centralization, significant restrictions, complexity and expensive maintenance. It is concluded that cryptocurrency can be used as a means of payment in e-commerce, in investment projects, and as a means of storing assets.

Key words: business, bitcoin, blockchain, cryptocurrency, technology, digital economy, financial system

Introduction.

The digital economy is a concept that defines a new stage in economic development in which digital technologies play a key role in the creation, distribution and use of information and knowledge. The main features of the digital economy are: digital technologies, data growth, efficiency and innovation, e-commerce, and changing business models. The study of the digital economy goes beyond academic interests and is becoming a key area of focus for various spheres of society and business. In particular, the rapid development of digital technologies, such as artificial intelligence, blockchain, and the Internet of Things, requires constant analysis of their impact on the economy, society, and business. It is important for businesses to understand how digital technologies can change business models, improve efficiency, and foster innovation to ensure competitiveness. The growth of digital data and its importance for the economy creates challenges in ensuring cybersecurity, and research in this area is becoming extremely important.

Main part.

The digital economy and cryptocurrency are two important aspects of the modern economic landscape, and they are interconnected through blockchain and cryptography technologies. In order to understand the relationship between the formation of the digital economy and the emergence of cryptocurrencies, it is necessary to clarify the categorical apparatus associated with digital assets and their use. One of these categories is cryptography, the science of methods for ensuring the confidentiality, integrity, and availability of information using mathematical algorithms. And it was the use of cryptography that allowed the creation of the first cryptocurrency, Bitcoin. An important basic category is blockchain, which is a decentralized database that stores information in the form of blocks that are linked to each other using a hash function. Blockchain is the basis of many cryptocurrencies, as it allows to ensure the security of transactions with digital assets and prevent double spending.

The algorithm of categories related to cryptocurrencies will help to understand how they interact with the digital economy and what advantages and disadvantages they may have compared to traditional monetary systems. Knowledge of the theoretical foundations will allow us to better understand the practical experience of using cryptocurrencies and their technologies in various areas of the economy and business. We share the point of view of scientists who interpret that the digital economy is a digital economic activity related to e-business and e-commerce, as well as the digital goods and services they produce and distribute [1-4]. Payment for services and goods in the digital economy is often made in digital currency (electronic money). The concept of the digital economy emerged in the last decade of the 20th century. In 1995, Nicholas Negroponte [1] used the metaphor of the transition from processing atoms to processing bits, noting the absence of classical goods in their “physical” embodiment (weight, raw materials, transportation) and the advantages of the new economy. Estimating the size of the digital economy is fraught with many difficulties and is a matter of much debate. Some authors divide the digital economy into “direct” (online business) and “indirect” (digital activities of mixed enterprises). In a 2012 study, the Boston Consulting Group [5] estimated the size of the “Internet economy” at \$2.3 trillion for the G20 countries, about 4.1% of their GDP. The Oxford Economics report estimated the total size of the digital economy in 2013 at \$20.4 billion, which is approximately 13.8% of global sales. The Internet economy of the UK, the largest in the G20, amounted to about 8.3% of GDP in 2012, and 12% in 2020 [6]. The growth of the digital economy is affecting economic activity. According to expert estimates, there are “four waves of change sweeping through consumer goods and retail,” competition in all areas is growing and becoming more global as digitalization spreads. The opportunity provided by the digital space for any person anywhere in the world to find and buy any product erases the boundaries of territories, neutralizes national identity, and blurs all possible barriers that somehow oppose some people to others, no matter what it is expressed in – language, religion, race, distinctions, prejudice or hostility between peoples. According to forecasts, the next generation will no longer consider shopping as moving somewhere in real space, there will be a decrease in the number of shopping

centers, a reduction in the number of consumers rushing to markets and shops, and a decrease in the load on transport infrastructure – important consequences of cyber commerce that cause changes in the urban environment.

As the world's population grows and resources are mobilized, the e-economy is not limited to e-commerce and services, but affects every aspect of life: healthcare, education, online banking, etc. Given the massive transfer of documents and communications to digital media, it is logical to transfer communication with the state to an electronic platform. The e-state and e-government will create a significant share of electronic services and products for their citizens.

The transition to the digital economy and the introduction of a new monetary instrument, cryptocurrency, is driven by the fact that it can facilitate global exchange and cross-border transactions by simplifying payment processes and reducing the impact of currency fluctuations. This becomes especially important in a world where businesses and customers are located in different countries. It is also important to note that the use of cryptocurrencies can contribute to financial inclusion of those who were previously excluded from the traditional banking system. People who do not have access to banking services can use cryptocurrency wallets to conduct financial transactions. The emergence of cryptocurrencies is also associated with the intensification of the struggle in the global financial market for the place and role of the international reserve currency (dollar, yuan, euro), as well as the fact that competition in national economies has intensified to accelerate scientific and technological transformations, ensure higher economic growth and the welfare of the people.

It is important to clarify the conditions for the emergence and development of blockchain and cryptocurrency. Most often, they are associated with new technologies and the development of science, which is undoubtedly relevant. After all, today technology is becoming a leading tool for transformation. In this sense, cryptocurrencies are emerging as one of the leading segments of the development of new technologies in the field of settlement systems, the formation of a new general equivalent in the process of exchange of activities.

Summarizing the research of global and national scientists, we emphasize that the reasons for the emergence of cryptocurrencies are diverse. First, gold is not enough to perform the functions of a general equivalent in today's environment, as it is associated with the natural characteristics of the material and reflects its material basis - costs. New estimates of this equivalent are needed to improve the quality of measurement. The modern development of science and technology requires new measures that more accurately reflect the direct true costs of the product produced. Time is such a measure, and Internet resources are best suited to it. Digital currency is based on a direct assessment of labor costs in working hours, which not only facilitates the measurement of labor costs but also makes them comparable on a global scale. What is also new is that some parameters of labor costs, their distribution and use are embedded in computer programs, which makes it possible to technologically limit the influence of the monopoly of the state and its institutions. This need to switch to a new measure is the first and foremost reason for the emergence of cryptocurrencies. The second reason is the general and systemic

reaction of business to a significant increase in the regulatory, fiscal, and institutional functions of the state. It may appear as subjective actions of business associations. But as a systemic influence, it becomes objective, with trends of changes in the relations between social groups. The state's monopoly in regulating money circulation is now in conflict with the interests of both private business and the needs of the population, when governments are able to make any changes in the currency market, regardless of the interests of taxpayers. This conflict of interest requires the development of a new, decentralized method of currency production and cash flow management. The third reason is the intensification of international competition. Only cryptocurrencies will allow us to find a "protective" solution to this problem in the near future. The fourth reason is an attempt by the mass consumer to respond to his or her vulnerability in the event of increased pressure from the state and capital on consumer purchasing power and to counteract inflationary currency depreciation and tax lawlessness. However, buyers and consumers have one indisputable argument: labor market behavior and the regulation of demand for goods. This social view of cryptocurrencies has recently been noted by researchers as one of the leading ones in assessing the economic and social consequences of the population's financial insecurity from the state's inflationary and fiscal policies.

From the above, it follows that a systematic assessment of the conditions and causes of cryptocurrency emergence leads to the conclusion that the phenomenon of blockchain and cryptocurrency is the result of a whole system of interrelated factors. The blockchain technology is economically sound and stands in contrast to modern financial systems, which are burdened with centralization, all sorts of restrictions, complexity and high cost of maintenance. Instead of a centralized database and a single authority that controls all transactions, all data is encrypted and stored in each node connected to the network. The new technology allows users to return control over all transactions and property rights directly to the users. The state retains only some functions that ensure the development of the institutional environment in the new open markets, and any attempts to impede this process and preserve the monetary monopoly of the authorities may have a negative impact on the economy.

Conclusions.

Therefore, the relationship between the digital economy and cryptocurrency is that cryptocurrency is the result of technological developments in the digital economy. Cryptocurrencies are based on blockchain technology, which allows for the secure and anonymous storage and transfer of digital assets. This type of currency can be used as a means of payment in e-commerce, in investment projects, and as a means of storing assets. It allows for fast and secure international transactions, regardless of national currencies and restrictions. Cryptocurrencies are an important element of the digital economy, which improves the efficiency and security of transactions and promotes the development of innovative technologies in the economic sphere.

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