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# CRYPTOCURRENCIES AND TRADITIONAL FINANCIAL INSTRUMENTS: A COMPARATIVE ANALYSIS AND PERSPECTIVES

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## КРИПТОВАЛЮТИ І ТРАДИЦІЙНІ ФІНАНСОВІ ІНСТРУМЕНТИ: ПОРІВНЯЛЬНИЙ АНАЛІЗ І ПЕРСПЕКТИВИ

***Over the past few years, cryptocurrencies have become popular and are being used just as actively as traditional financial instruments. What is specific about cryptocurrencies is that they are only digital assets, but they can be used for storing and transferring significant sums of money (with low fees and no intermediaries), as well as for converting into fiat money. Despite the popularity of cryptocurrencies, traditional financial instruments remain the basis of the global economy due to their regulation. The advantages and disadvantages inherent in traditional financial instruments and cryptocurrencies shape the prospects for the development of each of these systems, taking into account that each user has their own considerations regarding the acceptability of profitability and riskiness of operations. The study aims to provide opportunities for comparative analysis of cryptocurrency and traditional financial instruments and to determine their development prospects. The results of the study demonstrate that the use of cryptocurrencies for transactions, combined with their advantages such as decentralization, anonymity, and fast transaction processing (compared to banking transactions), increases transaction profitability while also offering relative security and stability against external factors. However, the disadvantages of cryptocurrency, including high volatility, low liquidity, lack of regulation and limited circulation, risk of losing access***

*keys and technical problems, and potential use for illegal transactions, collectively increase the complexity and risk of transactions with them. Regarding the use of traditional financial instruments, their advantages, such as safety and convenience, are increased when used in combination with other instruments (including smart investments, ease of use, easy understanding and accessibility for different categories of people, reliability, and a wide range of types and instruments). However, they are also limited by certain disadvantages that decrease the profitability of transactions with them (such as high commissions, low returns on some instruments, and risk of inflation). The study indicates prospects for the joint development of traditional financial instruments and cryptocurrencies, including the inclusion of cryptocurrencies in the financial services of traditional financial institutions, adaptation of electronic payment systems for cryptocurrencies to reduce transaction costs and increase their efficiency, and creation of hybrid new financial instruments that can be more efficient and convenient for users.*

**За останні кілька років криптовалюти стали популярними та використовуються так само активно, як і традиційні фінансові інструменти. Специфічним є те, що криптовалюти є лише цифровими активами, однак вони можуть бути використані для зберігання і переказування значних сум (з низькою комісією та без посередників), а також для конвертації у фіатні гроші. Незважаючи на популярність криптовалюти, традиційні фінансові інструменти залишаються основою для світової економіки через їх регульованість. Саме недоліки та переваги, властиві традиційним фінансовим інструментам та криптовалютам, формують перспективи для розвитку кожної з цих систем, зважаючи на те, що кожен їх користувач має власні міркування щодо прийнятності доходності та ризикованості операцій. Дослідження спрямоване на забезпечення можливостей для порівняльного аналізу криптовалют і традиційних фінансових інструментів та визначення перспектив їх розвитку. За результатами дослідження було доведено, що використання криптовалют для операцій, їх переваги у сукупності підвищують доходність операцій за рахунок децентралізації, анонімності та можливості швидкого виконання операцій (у порівнянні з банківськими транзакціями), а також відносної безпеки операцій та їх стійкості до зовнішніх чинників. У той же час недоліки криптовалюти (зокрема, її висока волатильність, низька ліквідність, брак регулювання та обмежений обіг, ризик втрати ключів доступу та виникнення технічних проблем, можливість використання для нелегальних операцій) у сукупності підвищують ризикованість та складність операцій з нею. Щодо використання традиційних фінансових інструментів, їх переваги у сукупності підвищують безпеку та зручність операцій з ними, хоча їм властиві недоліки, які обмежують доходність операцій з такими інструментами. За результатами дослідження виявлені перспективи спільного розвитку традиційних фінансових інструментів та криптовалют, зокрема: включення криптовалют до фінансових послуг традиційних фінансових установ; адаптації електронних платіжних систем криптовалют для зниження витрат на транзакції та підвищення їх ефективності; створення гібридних нових фінансових інструментів, які можуть бути більш ефективними та зручними для користувачів.**

*Key words: transaction security; digital assets; transactions; credit products; funds; bank deposits.*

*Ключові слова: безпека транзакцій; цифрові активи; транзакції; кредитні продукти; фонди; банківські депозити.*

#### **PROBLEM SETTING (DESCRIPTION OF THE PROBLEM BEING ANALYZED IN GENERAL AND ITS CONNECTION WITH IMPORTANT ACADEMIC OR PRACTICAL TASKS)**

In the last few years, cryptocurrencies have become popular and are being used as actively as traditional financial instruments. What is specific is that cryptocurrencies are only digital assets but they can be used to store and transfer significant amounts of them (with low fees and without intermediaries), as well as to convert them into fiat money. Additionally, many

cryptocurrency exchanges have been created in recent years (which allow buying and selling cryptocurrencies), as well as numerous new cryptocurrencies and related financial instruments. Therefore, investors can consider cryptocurrencies as part of their portfolio (to diversify their investments and investment risks). It's also beneficial to use cryptocurrencies for money transfers in international markets, where transfers through traditional banks can be very expensive and time-consuming.

Despite the popularity of cryptocurrencies, traditional financial instruments remain the backbone of the global economy. Traditional financial instruments are subject to

**Table 1. Characteristics of the main types of cryptocurrencies**

Types	Characteristics of cryptocurrencies	Forms	Features
Bitcoin	Global peer-to-peer electronic payment system with its own cryptocurrency based on blockchain technology, which allows parties to transact without intermediaries on behalf of a bank or other financial organization.	BTC (Bitcoin)	Anonymity <sup>1</sup> Speed <sup>2</sup> Security <sup>3</sup> Decentralization <sup>4</sup>
altcoins (including stablecoins)	Other cryptocurrencies created after Bitcoin using electronic payment systems (blockchain networks where transactions are executed) or without them. This group includes stablecoins, which are a type of altcoin whose value is backed by something else.	ETH, XRP, LTC, BCH, USDT, USDC etc.	
Tokens (including DeFi tokens.)	Additional assets issued on the blockchain of a certain cryptocurrency (essentially, just units of account on a digital balance) can be used for various purposes, such as ownership in projects, participation in voting, receiving services, and so on.	UNI, LINK, SUSHI, AAVE, MKR etc.	

Note:

<sup>1</sup> Cryptocurrency transactions are anonymous.

<sup>2</sup> Cryptocurrency transactions can be executed very quickly, especially when compared to banking transactions.

<sup>3</sup> Cryptocurrencies provide security for transactions and exchange of digital assets without intermediaries.

<sup>4</sup> Cryptocurrencies are not dependent on governments and financial institutions, so they can be used in any country.

Source: Analytical information about cryptocurrencies has been published on the website minfin.com.ua, with reference to the source being Anton Svatyk, an expert on digital and virtual assets.

government and other regulatory oversight, which helps ensure a high level of safety and protection for investors while cryptocurrencies lack such regulation but have a higher potential for value appreciation. The price of cryptocurrencies is solely determined by supply and demand in the market, whereas the price of traditional financial instruments is based on fundamental indicators such as earnings for stocks. Cryptocurrencies are also more accessible to a wider audience, as they do not require specialized knowledge to invest in. Given the potential outlined above, many experts believe that cryptocurrencies may replace or complement traditional financial instruments in the future. Therefore, it's important to examine the differences between these two types of financial instruments and determine their advantages and systemic shortcomings.

**THE ANALYSIS OF THE LAST RESEARCH AND PUBLICATIONS IN WHICH THE SOLUTION TO THIS PROBLEM IS BEGUN**

Currently, among the studies dedicated to the issues of the general content and peculiarities of the use of cryptocurrencies and traditional financial instruments, the works of Hmyrin A., Drop Ya.B., Lavryk O.L., and Kovalenko T.A. stand out. It is on these works that the author relies in order to identify previously unresolved parts of the general problem regarding the differentiation between these two types of financial instruments and their usage peculiarities. At the same time, most of such studies specify the stages of transforming financial instruments into assets and liabilities, identify the general problems of using cryptocurrencies, but do not provide sufficient data to enable comparative analysis of cryptocurrencies and traditional financial instruments and determine their

development prospects. This has led to the choice of the research topic and direction, as well as its overall relevance.

**FORMULATING OF ARTICLE PURPOSES (THE PURPOSE OF THE STUDY)**

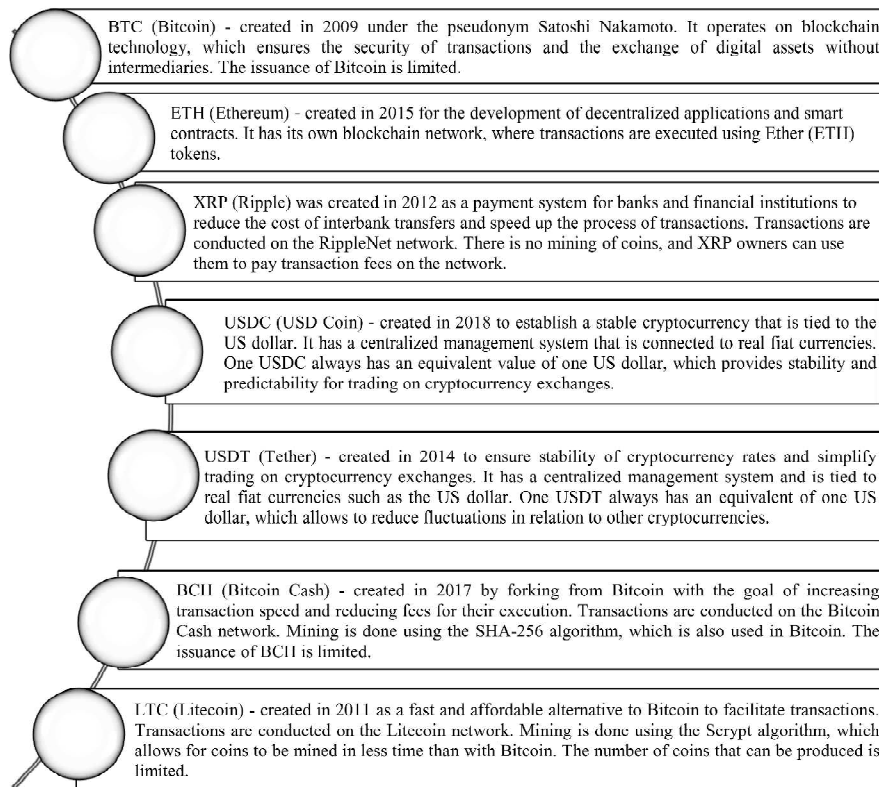
The aim of the article is to provide opportunities for comparative analysis of cryptocurrency and traditional financial instruments and to determine their development prospects.

**THE PAPER'S MAIN BODY WITH FULL REASONING OF ACADEMIC RESULTS**

By its content, the category of cryptocurrency identifies digital assets that use cryptographic methods to protect transactions and control the creation of new units. Cryptocurrencies utilize blockchain technology, which allows information about transactions to be stored in a decentralized database that is distributed among a multitude of computers. It should be noted that currently, cryptocurrencies are conventionally divided into Bitcoin (a cryptocurrency created in 2009 under the pseudonym Satoshi Nakamoto), altcoins, and tokens. The main types of cryptocurrencies are characterized in Table 1.

Thus, the cryptocurrency market currently revolves around BTC (Bitcoin) as well as numerous altcoins (including stablecoins). The main types of these cryptocurrencies and their operating specifics are highlighted in Figure 1.

According to the data presented, it is evident that the majority of cryptocurrencies provide security for transactions and exchange of digital assets without intermediaries. Most cryptocurrencies are decentralized (as no government or financial institution controls them) and have limited issuance (which ensures the absence of inflation). As a result, additional assets (UNI, LINK, SUSHI,



**Fig. 1. Main types of cryptocurrencies and the specifics of their circulation**

Source: Analytical information about cryptocurrencies has been published on the website minfin.com.ua, with reference to the source being Anton Svatyk, an expert on digital and virtual assets.

AAVE, MKR) issued on blockchain-based cryptocurrencies are quite attractive for investment because:

- 1) they can have various uses, including access to different products and services;
- 2) they can provide voting rights on the platform, the right to receive a portion of the profit paid by the platform, and much more;
- 3) they have a high potential for token price growth, which makes them attractive for investment.

For example, the UNI token (of the Uniswap protocol) is used for voting on proposals and changes to the protocol, as well as for providing liquidity on the exchange and receiving

commission rewards. Additionally, it can be used by users as a means of payment for transactions on the platform. The LINK token (of the Chainlink protocol) is used to pay for Chainlink services that allow blockchains to access external data, such as price data or weather conditions. The SUSHI token (of the SushiSwap exchange) allows users to exchange it, use it to pay for fees, and participate in voting for exchange management. The AAVE token (of the Aave protocol) allows users to borrow cryptocurrency without intermediary services, reduce transaction costs, and increase transaction processing speed. AAVE token holders have the right to vote in the protocol management process and receive certain benefits, such as discounts on transaction fees and interest rates on borrowed funds.

In addition, the entire cryptocurrency system is built on blockchain technology, where each transaction is recorded on a global public database (while each user can verify the transaction, they cannot influence it). However, each wallet (address) in the blockchain is not linked to the user's personal information (such as their name or email address). As a result, transaction participants can use pseudonyms or create new addresses for each transaction, making it difficult to trace operations and identify the user. Essentially, existing cryptocurrency payment systems allow transactions and exchange of cryptocurrency anonymously.

Traditional financial instruments refer to various types of financial assets and instruments used for savings, investment, lending, and carrying out various financial transactions, including bank deposits, stocks, bonds, funds, forex, credit products (Table 2).

**Table 2. Characteristics of main types of traditional financial instruments**

Financial instruments types	Instrument's characteristic	Species diversity	Features
bank deposits	Money deposited in a bank account that can generate interest income for the account holder.	Ordinary, urgent, cumulative, and so on.	Smart investments Ease of use
shares	Ownership in a company that allows the owner to receive a portion of the company's profits and participate in voting at the general meetings of shareholders.	Ordinary, privileged, nominal, etc.	Protection against inflation Easy to understand
bonds	Financial instruments issued by companies or governments to attract capital for development. These instruments guarantee payment of interest and the return of the principal amount.	Corporate, state, municipal, nominated, etc.	Availability for different categories of people
funds	investment portfolios in various assets that are managed by professional financial managers.	Index, promotional, bond, risk, balance, etc.	Reliability Wide range of
forex	currency trading operations	Currency pairs, currency futures, options and other derivatives	Social Responsibility
credit products	Financial instruments provided by banks and other financial institutions for obtaining financial support and conducting various operations.	Credit cards, loans for the purchase of goods, car loans, mortgages, loans for enterprises, etc.	

Source: formed based on [2].

**Table 3. Advantages and disadvantages of cryptocurrencies and traditional financial instruments**

Financial instruments	Advantages	Disadvantages	The general conclusion
cryptocurrencies	Decentralization Anonymity Speed Security Resilience to external factors	High volatility Low liquidity Lack of regulation and limited circulation Potential for use in illegal transactions Loss of access keys Technical issues	Taken together, these drawbacks increase the risk and complexity of operations. Taken together, the advantages increase the profitability of operations.
and traditional financial instruments	Smart investments Ease of use Inflation protection Ease of understanding Accessibility to different groups of people Reliability Wide selection Social responsibility	High fees Low returns on some instruments Inflation risk*	Taken together, these drawbacks limit the profitability of operations. Taken together, the advantages enhance the security and convenience of operations.

Note:

\*Traditional financial instruments such as deposits and bonds may offer protection against inflation as they are usually guaranteed by banks or other financial institutions. However, if the inflation rate exceeds the interest rate offered by traditional instruments, the investor may lose some of their money in real terms.

Source: created based on [1; 2].

Traditional financial instruments are important components of the financial system and are used by individuals for saving, investing, and conducting various financial operations (which is facilitated by their wide variety, allowing investors to find the optimal option for their needs and regulation). Each of these instruments typically depends on centralized institutions and is used under the condition of client identification and reporting. Such requirements are necessary to prevent money laundering and terrorism financing, as well as to ensure the safety of clients and their funds.

In particular, banking deposits are not only one of the most common and reliable ways to store money, but also an important element of the financial system that ensures its stability. The primary role of banking deposits is to enable individuals and companies to keep their funds in a secure place and earn interest on them. Deposits in banks require identification of the person through the collection and verification of various client data.

Stocks are one of the most important traditional financial instruments used for investing and saving money. The primary role of this instrument is to enable companies to raise the necessary financial resources for business development and expansion. Typically, to engage in stock trading, a brokerage account is required. To open such an account, you will need to provide information about yourself, including your full name, address, date of birth, and other information required by the brokerage company. Additionally, when buying or selling stocks, the brokerage company may require additional identification, such as passport details or other forms of identification.

Bonds are one of the financial instruments issued to raise money. The main role of the instrument is to serve as a source of funding for various corporate and government projects that can raise significant amounts of money through the sale of bonds. Transactions involving bonds may be subject to various requirements, including identification requirements. Typically, banks and other

financial institutions have their own rules regarding the identification of clients who engage in bond transactions. Identification may require the collection of personal information, such as full name, address, date of birth, and document numbers such as a passport or driver's license. Additional documentation may be required to verify the information provided by the client. Some institutions may also use biometric identification technologies, such as fingerprint scanners, to provide an additional level of security.

Funds are a financial instrument used for investing money. The main role of the instrument is to invest money under collective investment schemes (where funds collected from many investors are pooled together and invested in various assets to increase capital and earn interest, dividends, and other income). In most countries where regulation of this sector exists, funds are subject to regulatory oversight and must comply with a number of requirements. One such requirement is identity verification. Anyone wishing to invest in a fund must confirm their identity and provide the necessary documentation to transact and invest funds.

Forex is a type of financial instrument used for trading various trading instruments such as currency pairs, currency futures, options, and other derivatives. The main role of the instrument is to conduct currency exchange operations in order to ensure economic stability and financial security (the currency market). According to international standards such as KYC (Know Your Customer), banks and brokers in the Forex market must comply with requirements for identifying their clients and monitor their financial transactions to the broker for personal identification or conduct identification via video communication.

Credit products are a type of financial instrument used to help financial institutions and individuals carry out various financial transactions. The main role of the instrument is to provide financial support to people and

businesses in need of money for various purposes (such as buying real estate, a car, financing a business, paying for vacations, medical services, and much more). One of the requirements for obtaining a credit product is identification. This means that a bank or other financial institution must verify that the client who applies for a loan is who they claim to be and has the right to carry out financial transactions. To do this, the bank usually collects various documents, such as a passport, income statement, extract from the Unified State Register of Legal Entities, and so on.

According to the provisions given, both cryptocurrencies and traditional financial instruments have their own advantages and disadvantages, and they can be used for different financial needs (Table 3).

Regarding the use of cryptocurrencies for transactions, their advantages include independence from governments and financial institutions (decentralization: cryptocurrencies); attractiveness to those who want to maintain their privacy (anonymity); the ability to execute transactions quickly, especially compared to bank transactions (speed); transaction security and exchange of digital assets without intermediaries; dependence only on the availability of mined cryptocurrencies and demand for them (resilience to external factors).

It's important to understand that cryptocurrencies are a very new and rapidly growing market, which can be quite complex and risky for those who do not fully understand it. In particular, the use of cryptocurrencies for transactions has significant drawbacks, as:

- the cryptocurrency exchange rate can change quickly and unpredictably, creating a risk for investors and traders (due to high volatility);
- most cryptocurrencies have limited liquidity, so buying or selling can be restricted;
- most cryptocurrencies are not regulated by governments or central banks (because is absent or underdeveloped legislative framework for cryptocurrency transactions), making virtual currency circulation largely in the shadows;
- if a user loses their access key to their wallet, they will lose access to their cryptocurrencies and will not be able to recover them (loss of access keys);
- cryptocurrencies can be vulnerable to technical issues such as hacker attacks or system failures, which can result in user funds loss.

Additionally, anonymity and lack of regulation may facilitate the use of cryptocurrencies for criminal purposes such as money laundering or terrorism financing.

In fact, it can be stated that the identified advantages and disadvantages of cryptocurrencies limit their circulation and, in some cases, deter major creditors and investors who are willing to develop the cryptocurrency market.

Regarding operations with traditional financial instruments, they have significant advantages, including:

- the ability to make smart investments (in particular, stocks and bonds can be a wise choice for those seeking stable and secure investments);
- ease of use (they are available for use in most countries);

— the ability to protect investments from inflation (most traditional financial instruments, such as deposits and bonds, provide inflation protection);

— simple and understandable rules and conditions of use, which ensure accessibility for different categories of people, including those who have no experience in investing;

— a certain level of reliability, as they are backed by the government or financial institutions;

— a wide variety of types, which allows investors to find the optimal option for their needs.

In addition, most traditional financial instruments have social responsibility, as their use helps to develop the economy and promotes social development.

Despite significant advantages, operations with traditional financial instruments have low disadvantages that in some cases greatly limit their profitability. The main and most significant disadvantage, in our opinion, is high fees and expenses (including ongoing asset management fees or transaction fees, which can reduce investment returns and value). In addition, some traditional investment instruments (such as bank deposits) may have very low returns (making them less attractive to investors seeking high returns) and are subject to the risk of loss of value in case of inflation (when the inflation rate exceeds the interest rate offered by traditional instruments, investors may lose a portion of their funds in real terms). Also, inflation risk may be associated with currency exchange risk. For example, if an investor invests in deposits denominated in a foreign currency, changes in the exchange rate can affect the real value of their investment.

The advantages and disadvantages inherent in traditional financial instruments and cryptocurrencies shape the prospects for the development of each system, considering that each user has their own considerations regarding the acceptability of returns and the risks associated with transactions. Moreover, traditional financial instruments and cryptocurrencies can coexist and even interact with each other. In many countries, companies and banks have already added cryptocurrencies to their financial services, allowing customers to exchange their traditional currency for cryptocurrencies and vice versa. Some of the countries where cryptocurrencies can be used within financial services include the United States, Canada, the United Kingdom, Australia, Germany, Japan, Switzerland, China, and India. Additionally, in some countries such as Sweden and Norway, it is possible to use cryptocurrencies to pay for goods and services at select stores and restaurants. Many banks are also working on developing their own cryptocurrencies or implementing blockchain technology into their processes.

## CONCLUSIONS FROM THIS STUDY AND PROSPECTS FOR FURTHER EXPLORATION IN THIS AREA

According to the research results, it has been proven that the use of cryptocurrencies for transactions, and their advantages in aggregate increase the profitability of transactions due to decentralization, anonymity, and the possibility of quick execution of transactions (compared to banking transactions), as well as relatively secure operations and their stability to external factors. At the

same time, the disadvantages of cryptocurrencies (in particular, their high volatility, low liquidity, lack of regulation and limited circulation, the risk of losing access keys and technical issues, and the possibility of use for illegal transactions) in aggregate increase the risk and complexity of operations with it. As for the use of traditional financial instruments, their advantages in aggregate increase the security and convenience of operations with them (including smart investments, ease of use, easy understanding, and accessibility for different categories of people, reliability, and a wide choice of types and forms of instruments, etc.). However, they also have disadvantages that limit the profitability of operations with such instruments (such as high fees, low returns on some instruments, and inflation risk). Thus, the advantages and disadvantages that are inherent in traditional financial instruments and cryptocurrencies shape the prospects for the development of each of these systems, considering that each of their users has their considerations regarding the acceptability of profitability and risk of operations.

Based on the research results, it is evident that traditional financial instruments and cryptocurrencies can coexist and even interact through special gateways. Therefore, the prospects for the joint development of traditional financial instruments and cryptocurrencies could include: integrating cryptocurrencies into traditional financial institution services (allowing greater access to financial services for people who previously did not have the opportunity or did not want to use traditional banking services); adapting electronic payment systems for cryptocurrencies to reduce transaction costs and increase efficiency (as they do not require intermediaries and provide speed and security of operations); creating hybrid new financial instruments that may be more efficient and convenient for users.

The prospects for further research in this direction lie in the use of the obtained results to develop an approach to the coexistence of traditional financial instruments and cryptocurrencies, which can lead to improved regulation and the creation of more efficient rules for financial transactions.

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