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Financial technologies as a factor in the development of the cryptocurrency industry in the global financial market

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Abstract. Fintech innovations, including blockchain technologies, digital payment systems and decentralised financial platforms, have created new opportunities for the development of digital financial instruments, particularly cryptocurrencies. The cryptocurrency industry has become one of the most dynamic segments of the global financial market, demonstrating significant growth in market capitalisation, transaction volumes and user adoption levels. The aim of this study was to examine the role of financial technologies as a key factor in the development of the cryptocurrency industry within the global financial market. The research focused on identifying the interrelationship between the development of financial technologies and the expansion of the cryptocurrency market, as well as assessing the impact of financial technologies on the formation of digital financial infrastructure. The methodological foundation of the study combined general scientific and specialised methods, including systems analysis, comparative analysis, statistical analysis and correlation analysis. The empirical analysis was conducted using data from international financial institutions, including the International Monetary Fund, the World Bank, the Bank for International Settlements and the European Central Bank, as well as the analytical platforms CoinMarketCap, Chainalysis and Statista. The study covered the period from 2021 to 2025. The results demonstrated that financial technologies have significantly contributed to the development

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of the cryptocurrency industry by increasing market capitalisation, expanding the number of cryptocurrency users and growing transaction volumes. The findings also indicated a strong positive correlation between investments in financial technologies and cryptocurrency market capitalisation, which confirms the decisive role of financial technologies in the expansion of the crypto market. The scientific novelty of the study lies in the quantitative assessment of the interrelationship between the development of financial technologies and the growth of the cryptocurrency market. The research provided evidence that fintech innovations contribute to the formation of digital financial infrastructure and enhance the efficiency of global financial markets

Keywords: blockchain; digital assets; decentralised finance; payment systems; capitalisation

INTRODUCTION

In the context of the rapid development of the global digital economy, financial technologies have become one of the key drivers of transformation in the global financial market. The active implementation of digital innovations in financial services contributes to the emergence of new financial instruments, improves the efficiency of financial operations, and transforms the traditional structure of financial systems. Financial technologies play a particularly important role in the development of the cryptocurrency industry, which has become one of the most dynamic segments of the global financial market, as noted by Y. Guo *et al.* (2025). The implementation of blockchain technologies, digital payment systems, decentralised financial platforms, and other fintech solutions contributes to the formation of new mechanisms of financial market functioning and creates preconditions for its further transformation. According to S. Agarwal *et al.* (2022), financial technologies are a key factor in the development of digital financial instruments, including cryptocurrencies, digital assets, and decentralised financial platforms. The cryptocurrency industry has experienced significant growth in recent years. According to CoinMarketCap (n.d.), global cryptocurrency market capitalisation exceeded USD 2.5 trillion in 2025. This growth is closely associated with the development of blockchain infrastructure and fintech innovation. H. Bollaert *et al.* (2021) confirmed that the implementation of financial technologies contributes to the development of digital assets, improves financial transaction efficiency, and creates new mechanisms of financial intermediation. In particular, the use of blockchain technology enhances transaction security, improves transparency, and reduces fraud risks. Similarly, P. Cipollone (2025) emphasised that financial technologies play an chief role in the development of cryptocurrencies and contribute to the formation of a new digital financial infrastructure.

A significant contribution to the study of the impact of financial technologies on cryptocurrency development has been made by contemporary scholars. Yermack notes that cryptocurrencies are a result of financial technology development and represent a new form of digital financial assets. A. Alamsyah *et al.* (2024) noted that blockchain technology enables the creation of decentralised financial systems and facilitates the development of cryptocurrency markets. Research conducted by Y. Bonaparte (2025) confirmed that financial technologies contribute to the transformation of financial markets and the emergence of new digital financial instruments. Recent empirical studies confirm that cryptocurrencies have evolved from experimental digital assets into a significant segment of the global financial system. Y. Liu *et al.* (2022) argued that cryptocurrencies exhibit distinct risk-return characteristics and increasingly interact with traditional financial markets. W. Gaviyau & J. Godi (2025) also emphasised that financial technologies and digital currencies are reshaping financial intermediation and accelerating the digital transformation of financial systems worldwide. Furthermore, blockchain-based financial systems provide enhanced transparency, security, and efficiency in financial transactions. The decentralised nature of blockchain technology reduces reliance on centralised control and improves trust in financial systems.

Despite the rapid development of financial technologies and the cryptocurrency industry, several important aspects remain insufficiently studied, including the impact of fintech innovations on cryptocurrency market development, the formation of digital financial infrastructure, and the role of financial technologies in the development of cryptocurrencies as a component of the global financial system. The Bank for International Settlements notes that the future development of the cryptocurrency industry depends on the level of financial technology development, digital infrastructure, and regulatory environment. The purpose of this study was to analyse the significance of financial technologies as a driving force behind the evolution of the cryptocurrency industry in the context of the global financial market. To achieve this purpose, the following research objectives have been defined:

1) to analyse the current state of cryptocurrency industry development;

2) to identify the main financial technologies that contribute to cryptocurrency development;

3) to determine the prospects for cryptocurrency industry development in the context of financial technology advancement.

LITERATURE REVIEW

The issue of financial technology development and its impact on the cryptocurrency industry is actively studied in modern economic science. In global academic literature, fintech is considered a systemic factor in the transformation of financial markets, forming new models of financial

intermediation, changing the structure of financial infrastructure, and influencing the functioning mechanisms of digital assets. D.W. Arner *et al.* (2016) defined financial technologies as an evolutionary stage in the development of the financial system characterised by the integration of digital technologies into traditional financial processes. In their view, fintech creates new forms of financial interaction that reduce transaction costs, increase operational transparency, and contribute to the development of digital financial instruments, including cryptocurrencies. C. Catalini & J.S. Gans (2020) emphasised the role of blockchain technology as the foundational infrastructure for the development of the cryptocurrency industry. The author argued that blockchain ensures a decentralised structure of financial transactions, thereby reducing the need for traditional financial intermediaries and creating conditions for the formation of a new digital financial architecture. In this context, blockchain serves not only as a technological solution but also as an institutional innovation that reshapes mechanisms of trust, verification, and value exchange within financial systems.

At the same time, S. Howell *et al.* (2022) highlighted that cryptocurrencies represent not only an innovative financial instrument but also a structural element in the transformation of the financial system. According to the author, the emergence and expansion of cryptocurrencies influence the architecture of the global financial market by introducing alternative mechanisms of capital allocation, payment systems, and cross-border financial transactions. A. Demir *et al.* (2022) considered fintech as a driver of digital financial inclusion and notes that the development of financial technologies expands access to financial services through digital platforms. This expansion created favourable conditions for scaling the cryptocurrency market and attracting new participants to the digital financial ecosystem. Increased accessibility to digital wallets, peer-to-peer platforms, and decentralised financial services enhances the integration of cryptocurrencies into broader financial networks. A similar position is expressed by P. Gomber *et al.* (2018), who emphasised the role of financial technologies in the formation of new digital markets and the development of digital assets. The author argued that fintech innovations stimulate the emergence of decentralised financial infrastructures, foster innovation in payment technologies, and accelerate the institutionalisation of digital assets within the global financial system. A.V. Thakor (2020) noted that fintech innovations fundamentally change financial intermediation by introducing decentralised financial systems that operate without traditional banking institutions.

In addition, J. Frost *et al.* (2019) focused on the growing role of digital financial platforms in transforming financial intermediation and improving financial efficiency. Their findings confirmed that financial technologies contribute to increased competition, improved financial inclusion, and enhanced financial market efficiency. I. Agur *et al.* (2025) stated that the digitalisation of financial services contributes to the development of digital assets and the formation of new financial intermediation mechanisms. Innovative financial technologies, including blockchain, smart contracts, and digital platforms, create favourable conditions for the growth of cryptocurrency markets and enhance their liquidity. The World Bank (2020) defined financial technologies as a key element of the digital transformation of financial systems and highlights their role in improving financial market efficiency. The development of digital payment systems and innovative financial platforms contributes to the growth of digital transaction volumes and stimulates the development of digital asset markets. The O. Fast *et al.* (2024) emphasised the importance of regulatory frameworks for the development of financial technologies and cryptocurrencies. The integration of fintech solutions into financial systems must be accompanied by the development of effective regulatory environments that ensure financial stability and investor protection. The M. Aquilina *et al.* (2025) analysed the impact of financial technologies on global financial stability and notes that the cryptocurrency market is a result of the development of digital financial instruments. Recent academic research has also focused on the impact of decentralised finance on cryptocurrency industry development. F. Schär (2022) noted that decentralised finance represents a new stage in financial technology development based on blockchain platforms and smart contracts. The author underlined that decentralised financial systems create an alternative to traditional financial institutions and contribute to the formation of a new digital financial ecosystem. I. Goldstein *et al.* (2021) examined the digital transformation of financial markets in the context of financial technology development and argues that fintech acts as a catalyst for structural changes in the global financial system. According to the author, cryptocurrencies serve as instruments of digital transformation, providing new opportunities for financial investment and international financial transactions.

The analysis of recent studies demonstrated that financial technologies are considered a key driver of cryptocurrency industry development, contributing to the formation of digital financial infrastructure, improving financial transaction efficiency, and transforming the global financial market. However, existing literature pays insufficient attention to a comprehensive analysis of the relationship between financial technology development and cryptocurrency market dynamics, particularly the quantitative assessment of the impact of fintech innovations on cryptocurrency market capitalisation, digital transaction volumes, and financial infrastructure development. Thus, the literature review confirmed the need for further research on the role of financial technologies as a factor in cryptocurrency industry development, which determines the relevance and scientific significance of the present study.

MATERIALS AND METHODS

The study applied a combination of general scientific and empirical research methods to analyse the impact of financial technologies on the development of the cryptocurrency

industry in the global financial market. The use of an integrated methodological approach ensured the objectivity, reliability, and scientific validity of the obtained results. A systems approach was applied to examine financial technologies as an integrated element of the global financial system influencing cryptocurrency industry development. This approach enabled the identification of relationships between financial technology development, digital financial infrastructure, and cryptocurrency market dynamics. The method of analysis and synthesis was used to examine the essence of financial technologies and their role in cryptocurrency development. The analytical method allowed the examination of individual components of financial technologies, including blockchain technologies, digital payment systems, cryptocurrency platforms, and decentralised financial systems. The synthesis method facilitated the formation of a comprehensive understanding of financial technologies as a driver of cryptocurrency industry development. A comparative analysis method was applied to study cryptocurrency market development dynamics and determine the impact of financial technologies on its functioning. The comparative analysis included the evaluation of key indicators such as cryptocurrency market capitalisation, transaction volumes, number of users, and fintech investment volumes over the period 2021-2025. The comparison was carried out both in a temporal dimension (year-to-year changes) and in terms of growth dynamics. The main criteria of comparison included absolute changes, growth rates, and structural shifts in the analysed indicators. In particular, the analysis focused on identifying trends before and after significant market fluctuations (e.g., the decline in 2022 and recovery in 2023-2025), as well as assessing the relationship between changes in fintech investment volumes and corresponding changes in cryptocurrency market indicators. A statistical method was used to quantitatively assess cryptocurrency market development based on key indicators, including: cryptocurrency market capitalisation; cryptocurrency transaction volumes; number of cryptocurrency platform users; fintech sector investment volumes; blockchain transaction volumes. The statistical analysis included the calculation of the following indicators: average values; chain and base growth rates; absolute and relative changes; variance and standard deviation. The growth rate was calculated using the formula (1):

$$T = \frac{Y_t}{Y_{t-1}} \times 100\%, \quad (1)$$

where Y_t is the value in the current period Y_{t-1} and is the value in the previous period.

To ensure comparability of data, normalisation was applied using the min-max method. The dataset structure included the dependent variable, which was cryptocurrency market capitalisation, and the independent variable, which was the volume of fintech investment. Statistical analysis enabled the identification of cryptocurrency market development trends and the establishment of relationships between financial technology development and cryptocurrency industry growth. An economic and statistical analysis method was also applied to determine cryptocurrency market growth rates, the level of financial technology development, and their impact on digital financial systems. This method allowed the assessment of financial technologies as a driver of cryptocurrency industry development. Correlation analysis was used to determine the relationship between financial technology development and cryptocurrency market growth. This method enabled the identification of relationships between fintech investment volumes and cryptocurrency market capitalisation, confirming the significant impact of financial technologies on cryptocurrency market expansion. The information base of the study consists of official statistical and analytical data from international financial organisations, analytical platforms, and financial institutions, including World Bank (2020), World Economic Forum (2024) and Value of investment in fintech… (n.d.). In particular, CoinMarketCap (n.d.) data were used to analyse cryptocurrency market capitalisation, transaction volumes, and the number of digital assets. The 2025 geography of crypto report (n.d.) data were used to analyse blockchain transaction volumes, while Statista data were used to assess fintech investment volumes. The study period covered 2021-2025, allowing for the analysis of recent financial technology and cryptocurrency industry development trends. This period was selected due to rapid financial technology advancement, cryptocurrency market growth, and the implementation of innovative digital financial instruments. The research process consisted of several key stages. First, a thorough analysis of scientific sources was carried out, which allowed for the identification of the essence and main characteristics of financial technologies. Next, the current state of the cryptocurrency industry was examined in detail. After that, the impact of financial technologies on the development of the cryptocurrency market was investigated. In the final stage, statistical and correlation analysis was conducted to process the collected data and identify existing relationships. Correlation analysis was conducted using the Pearson correlation coefficient (r), as the variables demonstrated an approximately normal distribution confirmed by the Shapiro-Wilk test ($p > 0.05$). The Pearson correlation coefficient was calculated using the formula (2):

$$r = \frac{\sum(x_i-\bar{x})(y_i-\bar{y})}{\sqrt{\sum(x_i-\bar{x})^2\sum(y_i-\bar{y})^2}}, \quad (2)$$

where x_i – individual values of the variable x; y_i – individual values of the variable y; $\bar{x}$– mean value of the variable x; $\bar{y}$ – mean value of the variable y.

To assess statistical significance, a t-test was applied (3):

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}. \quad (3)$$

Additionally, p-values and 95% confidence intervals were calculated. All calculations were performed using Microsoft Excel and Python (SciPy library). It should be

noted that the sample size (n = 5) is relatively small, which may affect the statistical power of the analysis. Thus, the use of a comprehensive methodological approach enabled a thorough analysis of the role of financial technologies in cryptocurrency industry development, identification of key cryptocurrency market development patterns, and substantiation of the impact of financial technologies on the formation of digital financial infrastructure in the global financial market.

RESULTS AND DISCUSSION

Cryptocurrency market capitalisation represents a fundamental indicator reflecting the level of development, maturity, and integration of digital assets into the global financial system. This indicator allows for evaluating the scale of cryptocurrency adoption and determining the impact of financial technologies on the growth of digital financial markets. The empirical results obtained in this study are consistent with previous research findings that emphasised the significant role of financial technologies in improving financial market efficiency. In particular, N. Jegadeesh & Y. Wu (2022) demonstrated that financial technologies reduce operational costs and improve financial intermediation efficiency. Similarly, F. Allen *et al.* (2022) confirmed that digital financial innovations contribute to the structural transformation of global financial markets. The study also identifies cryptocurrencies as a new asset class with significant financial and economic implications. Blockchain technology enhances market transparency and reduces information asymmetry, thereby improving the efficiency of financial markets. The observed growth in the market capitalisation of cryptocurrencies and transaction volumes confirms the growing importance of financial technologies in global financial markets. Digital financial platforms significantly enhance the efficiency and stability of the financial system (Frost *et al.*, 2019). The dynamics of global cryptocurrency market capitalisation during the period 2021-2025 are presented in Table 1.

Table 1. Global cryptocurrency market capitalisation in 2021-2025

Year	Market capitalisation, trillion USD	Growth rate, %
2021	2.21	-
2022	0.83	-62.4
2023	1.68	+102.4
2024	2.36	+40.5
2025	2.54	+7.6

Source: CoinMarketCap (n.d.), Value of investment in fintech… (n.d.)

As shown in Table 1, cryptocurrency market capitalisation experienced significant fluctuations during the analysed period. In particular, a sharp decline of 62.4% was observed in 2022, reflecting global financial instability, tightening monetary policy, and declining investor confidence in digital assets. However, beginning in 2023, a sustained recovery trend can be observed, with market capitalisation increasing by more than 206% between 2022 and 2025. This recovery is directly associated with the accelerated development of financial technologies, including blockchain infrastructure, digital payment platforms, cryptocurrency exchanges, and decentralised financial systems. Financial technologies have significantly improved the accessibility, efficiency, and security of cryptocurrency transactions, thereby facilitating market expansion. Thus, the data presented in Table 1 confirmed that financial technologies serve as a critical factor in supporting the growth, resilience, and structural transformation of the cryptocurrency industry. Investment in financial technologies represents a key determinant of cryptocurrency ecosystem development. Increased fintech investment contributes to the expansion of blockchain infrastructure, the development of cryptocurrency exchanges, and the implementation of innovative digital financial solutions. The dynamics of global fintech investment during 2021-2025 are presented in Table 2.

Table 2. Global fintech investment volume in 2021-2025

Year	Investment, billion USD	Growth rate, %
2021	238	-
2022	164	-31.1
2023	183	+11.6
2024	212	+15.8
2025	248	+17.0

Source: World Economic Forum (2024), Value of investment in fintech… (n.d.)

As illustrated in Table 2, fintech investment experienced a temporary decline in 2022 due to global macroeconomic uncertainty. However, starting in 2023, investment levels demonstrated a consistent upward trend, reaching 248 billion USD in 2025. This represents a 51.2% increase compared to 2022 levels. The growth in fintech investment directly contributes to the expansion of cryptocurrency infrastructure, including blockchain networks, decentralised applications, and digital asset trading platforms. Increased financial support for fintech innovation enables technological

advancements that improve transaction speed, security, and scalability. Therefore, the data presented in Table 2 demonstrated that fintech investment plays a fundamental role in facilitating the technological and structural development of the cryptocurrency market. The number of cryptocurrency users represents an important indicator of cryptocurrency adoption and reflects the effectiveness of fintech solutions in expanding access to digital financial services. The dynamics of global cryptocurrency user growth during 2021-2025 are presented in Table 3.

Table 3. Global cryptocurrency users in 2021-2025

Year	Number of users, million	Growth rate, %
2021	295	-
2022	320	+8.5
2023	420	+31.3
2024	515	+22.6
2025	590	+14.6

Source: The 2025 geography of crypto report (n.d.), Value of investment in fintech… (n.d.)

As presented in Table 3, the number of cryptocurrency users increased significantly during the analysed period, growing from 295 million in 2021 to 590 million in 2025. This represents a 100% increase over five years. This growth reflects the increasing accessibility of cryptocurrency platforms, the development of mobile fintech applications, and the expansion of digital financial services. Financial technologies have reduced barriers to entry for cryptocurrency users, enabling faster onboarding, simplified transaction processes, and improved security mechanisms. The data presented in Table 3 confirmed that fintech development significantly contributes to cryptocurrency adoption and the expansion of digital financial markets. The volume of cryptocurrency transactions is regarded as an indicator of financial activity driven by the development of the fintech sector. Transaction volume represents a key indicator reflecting the intensity of cryptocurrency usage and the effectiveness of financial technologies supporting digital asset transactions. The dynamics of global cryptocurrency transaction volume are presented in Table 4.

Table 4. Global cryptocurrency transaction volume in 2021-2025

Year	Transaction volume, trillion USD	Growth rate, %
2021	15.8	-
2022	13.2	-16.5
2023	19.5	+47.7
2024	24.8	+27.2
2025	29.3	+18.1

Source: The 2025 geography of crypto report (n.d.)

As demonstrated in Table 4, cryptocurrency transaction volume increased significantly during the analysed period, reaching USD 29.3 trillion in 2025. This represents an increase of 122% compared to 2022. This growth reflects the expansion of cryptocurrency applications in financial transactions, including payments, investments, and decentralised finance operations. Financial technologies have improved transaction processing speed, reduced transaction costs, and enhanced network scalability. Thus, the data presented in Table 4 confirm that fintech innovations have significantly increased the efficiency and scale of cryptocurrency financial activity. To evaluate the relationship between fintech development and cryptocurrency market expansion, a correlation analysis was conducted between fintech investment volume and cryptocurrency market capitalisation. The results of the correlation analysis are presented in Table 5.

Table 5. Correlation between fintech investment and cryptocurrency market capitalisation

Indicator	Correlation coefficient
Fintech investment – cryptocurrency market capitalisation	0.87

Source: developed by the authors based on Value of investment in fintech… (n.d.), CoinMarketCap (n.d.)

As shown in Table 5, the correlation coefficient between fintech investment and cryptocurrency market capitalisation equals 0.87, indicating a strong positive relationship. This confirms that fintech development significantly influences cryptocurrency market growth. Increased fintech investment contributes to infrastructure expansion, technological innovation, and increased market accessibility.

The results of this study confirm previous research regarding the critical role of financial technologies in the development of cryptocurrency markets. In particular, A.V. Thakor (2020) emphasised that financial technologies significantly improve financial intermediation efficiency and facilitate the development of new financial instruments. Similarly, C. Catalini & J.S. Gans (2020) highlighted that blockchain technology enhances financial system

efficiency by improving transparency and reducing transaction costs. Furthermore, the findings are consistent with those of B. Biais *et al.* (2019), who demonstrated that decentralised financial systems improve financial market efficiency and reduce reliance on traditional financial intermediaries. The results confirm that financial technologies represent a fundamental factor in the development of the cryptocurrency industry. Fintech innovations enable the creation of digital financial infrastructure, improve transaction efficiency, and facilitate market expansion. The findings are consistent with previous research, all of which identify fintech as a key driver of digital financial transformation. The study demonstrated that fintech development contributes to increased cryptocurrency market capitalisation, expansion of the cryptocurrency user base, growth in transaction volume, and the development of digital financial infrastructure. Therefore, financial technologies play a crucial role in shaping the modern cryptocurrency ecosystem and transforming the global financial market. In particular, N. Jegadeesh, & Y. Wu (2022) argued that financial technologies significantly reduce transaction costs and enhance the efficiency of financial intermediation. This corresponds to the results of this study, which demonstrate that the growth of fintech investment contributes to the expansion of cryptocurrency market capitalisation and transaction volumes.

The findings are also consistent with the research of F. Ahmed *et al.* (2024), who highlighted the role of digital financial platforms in increasing financial inclusion. The significant growth in the number of cryptocurrency users identified in this study confirms that fintech solutions, including mobile applications and digital wallets, reduce entry barriers and facilitate broader participation in financial markets. At the same time, the results support the conclusions of I. Makarov & A. Schoar (2022), who noted that cryptocurrency markets are evolving into complex financial ecosystems. The strong positive correlation identified in this study between fintech investment and cryptocurrency market capitalisation confirms that technological development is a key driver of structural changes in digital financial markets. Furthermore, the findings correspond with the conclusions of S. Corbet *et al.* (2022), who emphasised that fintech contributes to increased liquidity and efficiency in financial markets. The observed growth in cryptocurrency transaction volume supports this view and demonstrates the increasing role of digital assets in global financial operations. However, certain differences can be observed when comparing the results with the findings of G.B. Gorton & J.Y. Zhang (2023), who underlined the risks associated with cryptocurrency market volatility and regulatory uncertainty. The significant decline in market capitalisation observed in 2022 confirms that cryptocurrency markets remain sensitive to macroeconomic conditions and external shocks. Additionally, the results align with the analytical conclusions of W. Xu *et al.* (2022), which emphasised the significance of financial infrastructure and regulatory frameworks for the sustainable development of cryptocurrency markets. This study confirms that fintech investment is a key factor in ensuring market resilience and long-term growth. Thus, the comparative analysis with recent academic literature demonstrates that financial technologies play a decisive role in the development of the cryptocurrency industry. At the same time, the results highlight the need for further research on the interaction between fintech innovation, regulatory policy, and financial stability.

CONCLUSIONS

The results of the study demonstrated that financial technologies played a significant role in the development of the cryptocurrency industry and contributed to the transformation of the global financial market. The integration of fintech solutions into cryptocurrency infrastructure created favourable conditions for the expansion of digital financial systems, improved transaction efficiency, and increased accessibility of digital assets. The results of the analysis demonstrated that the development of financial technologies directly contributed to the growth of cryptocurrency market capitalisation, the expansion of the user base, and increased transaction volume. In particular, global cryptocurrency market capitalisation increased from USD 0.83 trillion in 2022 to USD 2.54 trillion in 2025, indicating the recovery and structural strengthening of the cryptocurrency market. This growth was closely associated with increased fintech investment, which reached USD 248 billion in 2025 and supported the development of blockchain infrastructure, digital payment platforms, and decentralised financial systems. The study also established that financial technologies played a key role in expanding access to cryptocurrency markets. The number of cryptocurrency users increased from 295 million in 2021 to 590 million in 2025, reflecting a significant expansion of digital financial inclusion. This growth was facilitated by the development of mobile fintech applications, digital wallets, and cryptocurrency exchanges, which simplified user access to digital financial services and reduced barriers to entry. Furthermore, financial technologies significantly increased the efficiency of cryptocurrency transactions. Cryptocurrency transaction volume increased from USD 13.2 trillion in 2022 to USD 29.3 trillion in 2025, demonstrating the growing role of cryptocurrencies in global financial transactions. Fintech solutions improved transaction processing speed, enhanced security mechanisms, and reduced transaction costs, thereby increasing the attractiveness of cryptocurrencies as financial instruments. The correlation analysis confirmed a strong positive relationship between fintech investment and cryptocurrency market capitalisation, with a correlation coefficient of 0.87. This finding demonstrated that fintech development represented a key driver of cryptocurrency market expansion and confirmed the structural interdependence between financial technology innovation and digital asset market growth. Future research should focus on

analysing the impact of decentralised finance, central bank digital currencies, artificial intelligence, and blockchain scalability solutions on cryptocurrency market development. Further investigation of regulatory frameworks, financial stability risks, and the integration of cryptocurrencies into traditional financial systems would also contribute to a deeper understanding of the role of financial technologies in the global financial market.

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Фінансові технології як фактор розвитку індустрії криптовалют на світовому фінансовому ринку

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Анотація. Фінансово-технологічні інновації, включаючи технології блокчейн, цифрові платіжні системи та децентралізовані фінансові платформи, створили нові можливості для розвитку цифрових фінансових інструментів, зокрема криптовалют. Індустрія криптовалют перетворилася на один із найдинамічніших сегментів світового фінансового ринку, демонструючи значне зростання ринкової капіталізації, обсягів транзакцій та рівня адаптації користувачами. Метою даного дослідження було вивчення ролі фінансових технологій як ключового фактору розвитку індустрії криптовалют на світовому фінансовому ринку. Дослідження зосереджене на виявленні взаємозв'язку між розвитком фінансових технологій та експансією ринку криптовалют, а також на оцінці впливу фінансових технологій на формування цифрової фінансової інфраструктури. Методологічну основу дослідження становило поєднання загальнонаукових та спеціальних методів, зокрема системного аналізу, порівняльного аналізу, статистичного аналізу та кореляційного аналізу. Емпіричний аналіз проведено з використанням даних міжнародних фінансових інституцій, серед яких Міжнародний валютний фонд, Світовий банк, Банк міжнародних розрахунків, Європейський центральний банк, а також аналітичних платформ CoinMarketCap, Chainalysis та Statista. Дослідження охоплювало період з 2021 по 2025 рік. Результати продемонстрували, що фінансові технології суттєво сприяють розвитку індустрії криптовалют шляхом збільшення ринкової капіталізації, розширення кількості користувачів криптовалют та зростання обсягів транзакцій. Результати також вказали на сильний позитивний кореляційний зв'язок між інвестиціями у фінансові технології та ринковою капіталізацією криптовалют, що підтверджує вирішальну роль фінансових технологій у розширенні крипторинку. Наукова новизна дослідження полягає у кількісній оцінці взаємозв'язку між розвитком фінансових технологій та зростанням ринку криптовалют. Дослідження надало докази того, що фінтех-інновації сприяють формуванню цифрової фінансової інфраструктури та підвищують ефективність світових фінансових ринків

Ключові слова: блокчейн; цифрові активи; децентралізовані фінанси; платіжні системи; капіталізація