УДК 336.7:004.738.5

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DOI: 10.32702/2306-6814.2026.6.269

USE OF DIGITAL FINANCE FOR DIVERSIFICATION OF PORTFOLIO RISKS AND TRANSACTIONS OPTIMIZATION

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ВИКОРИСТАННЯ ЦИФРОВИХ ФІНАНСІВ ДЛЯ ДИВЕРСИФІКАЦІЇ ПОРТФЕЛЬНИХ РИЗИКІВ ТА ОПТИМІЗАЦІЇ ОПЕРАЦІЙ

The article examines the development of digital finance and the possibility of its usage in the context of diversification of risks due to increasing volatility in traditional financial markets as a consequence of geopolitical and economic instability. Despite the growing interest in digital assets, cryptocurrencies, stablecoins, and blockchain-based financial instruments, their role in institutional risk management remains insufficiently systematised and often controversial in academic research. The aim of the article is to analyse modern attitudes from different market participants regarding cryptocurrencies and related digital financial instruments as tools for portfolio diversification and transaction risk mitigation. The study combine both qualitative and quantitative analysis with theoretical frameworks based on modern portfolio theory. the concept of alternative assets and correlation analysis as well as transaction cost and operational theory. The empirical part of the research is based on correlation analysis of digital and traditional assets under both normal market conditions and periods of financial stress, complemented by a comparative portfolio assessments with limited cryptocurrency exposure. In addition, the article include case studies of multinational enterprises and financial istutions to illustrate practical strategies of digital finance implementation.

The results indicate that digital assets are primarily adopted by multinational enterprises and financial institutions in limited proportions as complementary instruments rather than as classical hedging tools. Cryptocurrencies contribute mainly to portfolio diversification due to imperfect correlation with traditional assets, while stablecoins and tokenized instruments are used to reduce transaction costs, settlement delays and foreign exchange exposure.

The findings of the study may be useful for multinational enterprises, hedge funds, financial institutions and regulators in developing balanced strategies for integrating digital finance into risk management systems.

У статті досліджується розвиток цифрових фінансів та можливості їх використання в контексті диверсифікації ризиків в умовах зростаючої волатильності традиційних фінансових ринків, зумовленої геополітичною напруженістю, економічною нестабільністю та структурними змінами світової фінансової системи. Незважаючи на стрімке зростання інтересу до цифрових активів, зокрема криптовалют, стейблкоїнів і фінансових інструментів, заснованих на технології блокчейн, їх роль у системах управління ризиками інституційних інвесторів, транснаціональних корпорацій та фінансових установ залишається недостатньо систематизованою та часто дискусійною в сучасних наукових дослідженнях.

Метою статті є аналіз сучасних підходів різних учасників фінансового ринку до використання цифрових фінансових інструментів із фокусом на їх застосування як засобів диверсифікації портфельних ризиків та мінімізації транзакційних і операційних ризиків, а не як класичних інструментів хеджування. Дослідження поєднує якісні та кількісні методи аналізу й грунтується на положеннях сучасної портфельної теорії, концепції альтернативних активів і кореляційного аналізу, а також теорії транзакційних витрат і операційних ризиків.

Емпірична частина дослідження базується на кореляційному аналізі цифрових і традиційних фінансових активів як у звичайних ринкових умовах, так і в періоди фінансової нестабільності, а також доповнюється порівняльною оцінкою інвестиційних портфелів з обмеженою часткою криптовалют. Окрему увагу приділено аналізу практичних кейсів транснаціональних корпорацій, хедж-фондів і фінансових установ, що ілюструють реальні стратегії впровадження цифрових фінансів у процеси управління ризиками та оптимізації фінансових операцій.

Отримані результати свідчать, що цифрові активи використовуються транснаціональними корпораціями та фінансовими інститутами переважно в обмежених обсягах як допоміжні інструменти, а не як заміна традиційних фінансових активів. Криптовалюти сприяють диверсифікації портфелів завдяки неповній і змінній кореляції з акціями та облігаціями, однак їх здатність виконувати захисну функцію істотно знижується в періоди системних фінансових потрясінь. Водночас стейблкоїни та токенізовані фінансові інструменти демонструють значний потенціал у зниженні транзакційних витрат, скороченні строків розрахунків, мінімізації валютних ризиків і підвищенні ефективності міжнародних фінансових операцій.

Практична значущість результатів дослідження полягає у можливості їх використання транснаціональними корпораціями, фінансовими установами, інституційними інвесторами та регуляторними органами при формуванні збалансованих стратегій інтеграції цифрових фінансів у системи управління ризиками з урахуванням волатильності, регуляторних обмежень і операційних ризиків.

Ключові слова: цифрові фінанси, стейблкоїни, багатонаціональні підприємства, криптовалюта, портфельні ризики.

Key words: Digital finance, stablecoins, multinational enterprises, cryptocurrency, portfolio risks.

DEFINITIONS:

Digital finance includes a variety of products, applications, processes and business models that have transformed the traditional way of providing banking and financial services.

Multi National Enterprises(MNEs) — are entities that engage in foreign direct investment (FDI) and own or control production or material development firms in more than one country.

Decentralized finance (DeFi) is a system of financial products and services built on blockchain networks that operate without banks or other intermediaries.

Stablecoins are crypto assets designed to maintain a stable value.

Exchange-Traded Fund is an investment fund that holds a basket of assets and trades on a stock exchange like an individual stock, offering diversification and liquidity.

ACTUALITY

In current globalized economy, characterized by high volatility of markets, increasing geopolitical risks and uncertainty on financial market, as well as high correlation between basic actives, the issue of portfolio risks diversification become strategic. Risks management are crucial for MNEs, institutional investors, hedge-funds, etc.

Digital finance, including algorithmic investing platforms, blockchain, crypto assets and DeFi create a new dimensions for investing. Based on lower risks due to low correlation between basic assets and digital ones as well as possibility to use digital finance for optimization of transactions risks it is becoming more popular and is implementing by variety of MNEs/banks/hedge funds and other institutions. Moreover, digitalization allows to use special models of optimization for financial institutions, reduce risk based on concentration of assets and ensure access to new class of actives, as well as use high frequency trade strategies. This report aim is to

Figure 1. Cryptocurrency Market Capitalization Charts

Source: [23].

make an analysis and point out main mechanisms and attitude of big MNEs and intuitions toward diversification of portfolio risks and hedging by using digital finance.

The figure 1 show the total capitalization of cryptocurrencies (including stablecoins). From that graph it is seen how cryptocurrencies capitalization grew from approximately $200 billion up to $2.7 trillion in 2020 and 2026 respectively. Basically, it is still dominated by Bitcoin (57%), therefore new downward trend could be explained by decreasing of price of Bitcoin. Despite the fact that cryptocurrencies is highly volatile and is still seen as highly risked actives, there are stablecoins.

The figure 2 show the tendency of stable coin market that is now reaching up to $310billion. That could be explained due to enormous interest from many banks in terms of using it as an leverage to deal with FX risks during the transactions.

ANALYSIS OF RECENT RESEARCH AND PUBLICATIONS

In the academic context implementing of cryptocurrencies and digital assets into traditional investment portfolio has been researched by many scientists in terms of portfolio diversification and risk reduction. For instance, studies such as Bakry (2021) emphasize that Bitcoin could be used as an diversification tool, however, crucial conditions are firstly to keep the ration relatively small and for market to be stable, otherwise it increase the conditional value at risk during unstable market conditions [1]. Research focusing on emerging markets, such as the study by Letho et al. [2], provides evidence that the inclusion of cryptocurrencies into portfolios with stocks, bonds, and other traditional assets can improve efficient frontier characteristics and risk-adjusted returns in emerging market contexts. More recent research by Sharma [3] further supports the view that Bitcoin may contribute to portfolio diversification when included in limited proportions. The study demonstrates that small allocations of Bitcoin can modify the efficient frontier and reduce overall portfolio risk for a given level of expected return. However, these benefits are not uniform across time and are subject to significant variation depending on market conditions.

These empirical findings are consistent with the principles of Modern Portfolio Theory[4], which emphasizes the role of imperfectly correlated assets in reducing portfolio risk. At the same time, a growing body of literature highlights important limitations of cryptocurrencies as diversification

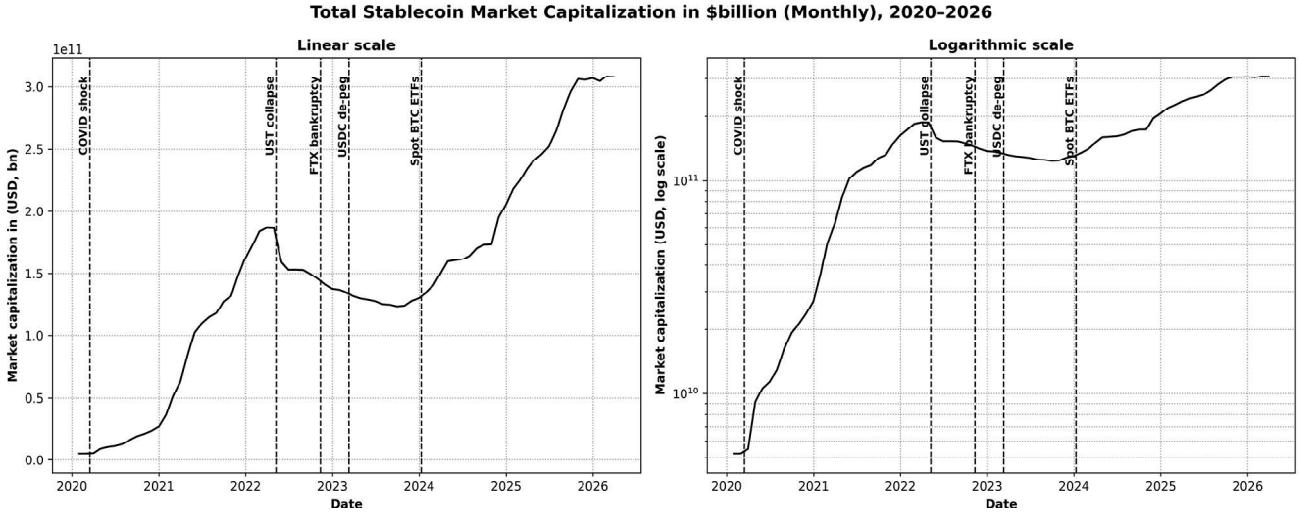

Figure 2. Total Stablecoin Market Capitalization in $ billion (Monthly)

Source: author calculations.

instruments. Several studies point to their high volatility, unstable correlations with traditional asset classes, and increased synchronization with equity markets during periods of financial stress. As a result, cryptocurrencies are generally not considered reliable hedging instruments in the classical sense, particularly during systemic crises.

While the existing literature provides valuable insights into the diversification potential of digital assets, it is largely concentrated on portfolio-level effects and investment performance. Considerably less attention is paid to the role of digital finance in mitigating transaction-related risks, such as settlement delays, foreign exchange exposure, and operational inefficiencies. Moreover, few studies adopt an integrated perspective that simultaneously considers portfolio diversification and transaction optimization, especially in the context of multinational enterprises operating across multiple jurisdictions.

This gap in the literature indicates the need for a more comprehensive analytical framework that examines digital finance not only as an investment asset class, but also as a set of instruments capable of enhancing transaction efficiency and reducing operational risks. Addressing this gap is particularly relevant for multinational enterprises and institutional investors, for whom risk management extends beyond portfolio composition to include cross-border payment processes and financial infrastructure.

AIM AND OBJECTIVES OF THE ARTICLE

The aim of the article is to analyze the role of digital finance in portfolio risk diversification and transaction risk mitigation in the context of multinational enterprises and institutional investors.

The objectives of the study include:

1) to examine theoretical approaches to portfolio diversification involving digital assets;

2) to assess the diversification potential of cryptocurrencies within institutional portfolios;

3) to analyze the role of stablecoins and tokenized instruments in reducing transaction and operational risks.

SCIENTIFIC NOVELTY OF THE STUDY

The scientific novelty of this study lies in the integrated examination of digital finance as both a portfolio diversification instrument and a tool for transaction risk optimization. Unlike most existing research that focuses primarily on the investment performance of cryptocurrencies, this article combines correlation-based analysis across normal and crisis periods with a portfolio-level assessment and institutional case studies. The research places particular emphasis on multinational enterprises and financial institutions, demonstrating that digital assets are predominantly used in limited proportions as complementary instruments rather than as classical hedging assets. This integrated approach allows for a more balanced assessment of the role of digital finance in modern risk management frameworks.

DATA AND METHODOLOGY

The empirical analysis is based on daily market data obtained from Yahoo Finance. The sample covers the period from 2019 to 2024 and includes representative asset classes commonly used in institutional portfolios: equities (S&P 500 index or SPY ETF), U.S. government bonds (IEF), gold (GLD), and Bitcoin (BTC). Asset prices were adjusted for corporate actions where applicable.

To ensure comparability across assets, logarithmic returns were computed using daily closing prices. Correlation analysis was conducted using the Pearson correlation coefficient in order to assess the degree of co-movement between digital and traditional assets. To capture differences in asset behavior under varying market conditions, correlations were calculated both for the full sample period and for selected crisis periods, defined ex ante based on major financial market stress events.

Portfolio analysis was performed by constructing diversified portfolios with predefined asset weights. A traditional portfolio composed of equities, bonds, and gold was compared with an alternative portfolio that included a limited allocation to Bitcoin. Portfolio performance was evaluated using annualized return, annualized volatility, Sharpe ratio, and maximum drawdown. All calculations were conducted using Python-based statistical tools.

THEORETICAL FRAMEWORK OF DIGITAL FINANCE IN RISK DIVERSIFICATION AND TRANSACTION OPTIMIZATION

The theoretical framework of this study is based on three complementary approaches: Modern Portfolio Theory[4], correlation-based analysis of alternative assets, and transaction cost and operational risk theory. According to Modern Portfolio Theory, portfolio risk can be reduced by combining assets with imperfect correlation. In this context, digital assets, particularly cryptocurrencies, are considered alternative assets characterized by high volatility and unstable correlation with traditional financial instruments, which creates potential diversification benefits when included in limited proportions.

From the perspective of institutional portfolio management, digital assets are not viewed as substitutes for traditional instruments but rather as complementary components of diversified portfolios. Correlation-based analysis suggests that even volatile assets may improve portfolio efficiency if their price dynamics are not fully synchronised with broader financial markets. However, due to sensitivity to market sentiment, regulatory changes, and geopolitical factors, digital assets cannot be regarded as reliable hedging instruments in the classical sense.

In addition to portfolio diversification, digital finance helps reduce transaction-related risks. Transaction cost theory emphasises that financial risk includes not only price volatility but also settlement delays, counterparty risk, foreign exchange exposure, and operational inefficiencies. Blockchain-based solutions, including stablecoins and tokenised securities, address these challenges by enabling faster settlement, reducing reliance on intermediaries, and improving transparency. From a theoretical standpoint, tokenisation represents an innovation in financial infrastructure rather than a new asset class, supporting the dual role of digital finance as both a diversification tool and a mechanism for transaction risk optimisation.

QUANTITATIVE ANALYSIS OF ASSET CORRELATIONS

According to the Table 1 below, Bitcoin has a small to medium correlation with both Gold and US Bonds, and a moderate correlation with S&P 500, therefore it can be used as a diversification tool for portfolio investments. Despite this, in Table 2, which illustrates the correlation of assets during specific periods that are perceived as periods of market crashes, it is illustrated that it has a significantly bigger correlation with both Gold and S&P 500; therefore, Bitcoin should be implemented in a portfolio in small quantities.

Table 3 illustrates the comparison of the portfolios that are accounted to be standard (60% stocks, 30% bonds and

Table 1. Full-sample correlation of traditional and digital assets (2019—2024)

	Bitcoin	Gold (GLD)	US Bonds (IEF)	S&P 500
Bitcoin	1.000	0.158	0.002	0.370
Gold (GLD)	0.158	1.000	0.398	0.142
US Bonds (IEF)	0.002	0.398	1.000	-0.079
S&P 500	0.370	0.142	-0.079	1.000

Source: author's calculations.

Table 2. Correlation of assets during crisis periods

	Bitcoin	Gold (GLD)	US Bonds (IEF)	S&P 500
Bitcoin	1.000	0.201	-0.010	0.527
Gold (GLD)	0.201	1.000	0.396	0.149
US Bonds (IEF)	-0.010	0.396	1.000	-0.110
S&P 500	0.527	0.149	-0.110	1.000

Source: author's calculations.

Table 3. Portfolio comparison (2019—2024)

Portfolio	Ann. Return	Ann. Volatility	Sharpe (rf=0)	Max Drawdown
Trad. (Stocks + Bonds + Gold)	14.14	12.21	1.159	-13.2
Trad. + 2% Bitcoin	14.54	12.32	1.18	-14.21

Source: author's calculations.

10%gold) with other portfolios that include the same amount of bonds and gold(in %) but has 2% of bitcoin and 58% of stocks. The comparison is conducted using key risk-return metrics, including annualized return, annualized volatility, Sharpe ratio, and maximum drawdown.

The results demonstrate that the inclusion of a small share of Bitcoin leads to a moderate increase in annualized return, rising from 14.14% in the traditional portfolio to 14.54% in the portfolio with Bitcoin exposure. At the same time, portfolio volatility increases only marginally, from 12.21% to 12.32%, indicating that the additional return is not accompanied by a proportional rise in overall risk. As a result, the risk-adjusted performance, measured by the Sharpe ratio, improves from 1.159 to 1.180, suggesting a slight enhancement in portfolio efficiency.

However, the analysis also reveals that the portfolio including Bitcoin experiences a somewhat larger maximum drawdown, increasing from ?13.2% to ?14.21%. This finding highlights the higher downside risk associated with cryptocurrency exposure, particularly during periods of market stress. While the deterioration in drawdown remains limited due to the small allocation size, it confirms that Bitcoin behaves as a high-volatility asset that can amplify losses during adverse market conditions.

The portfolio comparison supports the conclusion that Bitcoin may improve the risk-return profile of diversified portfolios when included in limited proportions, primarily by increasing expected returns and marginally enhancing risk-adjusted performance. At the same time, the increase in maximum drawdown underscores the importance of cautious allocation and active risk management. These findings are consistent with the view that cryptocurrencies should be treated as complementary diversification instruments rather than classical hedging assets, particularly for institutional investors and multinational enterprises seeking to balance return enhancement with controlled exposure to additional risk.

MNEs: Digital finance in global risk management, case-study

Large MNEs face a lot of risks, including currency fluctuations, inflation, market volatility, regulatory changes, etc. In recent years, some of them have turned to digital assets as a new tool for diversifying risks and preserving portfolio value.

A great example is MicroStrategy, which has effectively converted part of its corporate treasury into a bitcoin reserve. Since 2020, MicroStrategy has been systematically investing in Bitcoin, motivated by a desire to protect its capital from the inflationary risks of the US dollar. As of the end of 2024, the company had accumulated approximately $44 billion in Bitcoin, representing approximately 2% of the total issuance of this cryptocurrency. This strategy had mixed results: on the one hand, MicroStrategy's shares rose sharply (a 3,200% gain since 2020, when Bitcoin became their main reserve asset). On the other hand, the high volatility of Bitcoin caused significant fluctuations in the company's financial performance (quarterly losses were recorded, including a net loss of $340 million in the third quarter of 2024 and up to $17.6billion of unrealized income due to Bitcoin stock price crash at start of 2026)[5,6]. This example illustrates an aggressive diversification model, where finance fund is betting heavily on digital assets as a hedge against macroeconomic risks (inflation, currency depreciation), but at the same time is exposed to the risks of extreme volatility that is highly unpredictable and especially vulnerable to geopolitical tensions and potential regulatory restrictions.

Another attitude toward digital finance is demonstrated by industrial giant Siemens. The company used tokenized bonds as an innovative financial instrument in 2023 [7]. In September 2024, Siemens issued a ˆ300 million digital bond on a private blockchain, in accordance with German law on electronic securities [8]. This bond was placed and settled in a matter of minutes thanks to distributed ledger technology and central bank digital currency settlements, in contrast to the traditional two-day settlement cycle. As a result, settlement risk was virtually eliminated for all parties to the transaction. Moreover, the fact of selling Siemens bond's on secondary market was reported, meaning that it were not only issued but also get interest from secondary market participantsx [9]. For a multinational enterprise, this use of blockchain technology reduces operational risks (such as the risk of non-delivery or payment delays) and increases the efficiency of raising capital

in global markets. Siemens is thus diversifying not so much its investment portfolio by asset class as its financial instruments and infrastructure risks, confirming its status as an innovator in the digitalization of capital markets.

Several other corporations are also experimenting with digital assets. For example, car manufacturer Tesla purchased Bitcoin as part of its reserves in 2021 (although it subsequently reduced these positions it still hold 11509 BTC = $1billion as for 2026) [10], and a number of smaller public companies and even non-banking institutions have decided to allocate part of their cash reserves to Bitcoin.

MNEs with operations in emerging markets are also looking at stablecoins — digital tokens pegged to the value of stable assets (usually fiat currencies). Stablecoins (e.g., USDT, USDC) allow companies to temporarily hold funds in digital dollars, minimizing exchange risk and making transactions faster. Visa(USDC)[11], Mastercard(USDC/EURC)[12] and PayPal(PYUSD)[13] provide an ability to pay by related stable coin for cross-border payments in order to reduce reliance on correspondent banking, and shorter FX exposure windows.

For SMEs, the main advantages may include reduced costs and time for international payments, avoidance of exotic currency volatility, and hedging of currency risk in countries with unstable national currencies by converting part of their settlements into dollarized stablecoins. At the same time, companies must take regulatory risks into account. On one hand, international financial organizations warn that the widespread use of private stablecoins may pose a threat to the monetary sovereignty and financial stability of developing countries [14, 15]. However, there are slightly different attitude for stable coins from US government which is facilitating the development of stable coins as well as cryptocurrencies (e.g. strategic reserves of Bitcoins in the US) [16]

Digital assets as a diversification tool for hedge funds and financial institutions

Not only industrial companies but also financial institutions are actively implementing digital assets into their strategies. On the one hand, there are traditional hedge funds looking for alternative sources of profitability, and on the other, there are global banks and asset managers developing new products and platforms based on digital finance.

According to the 2025 global survey by AIMA, more than half of the world's hedge funds are already investing in crypto assets. 55% of hedge funds have cryptocurrencies or related instruments in their portfolios comparing to 47% in the previous year[17]. Furthermore it is claimed by AIMA that tokenization is gaining interest from up to 52% of hedge funds as a form of alternative investments. Despite the fact that average share is about 7% of assets under management the vast majority of funds adhere to moderate allocations. More than half of those who invest hold less than 2% of their assets in cryptocurrency. This approach allows them to gain the potential benefits of digital asset growth and their weak correlation with traditional markets, while limiting the impact of significant drawdowns. In 2025, hedge funds' interest in the crypto sector was firsly fueled by a sharp rise in prices due to a series of records high that was set by Bitcoin during that period, partly thanks to favorable signals from the US political arena (public support for the industry from the Trump administration). It is worth noting that many funds choose indirect investment methods: 67% of them use cryptocurrency derivatives (futures, options), which allows them to gain exposure to price movements without directly owning the underlying digital assets. This tactic reduces the operational risks of storing crypto assets, but at the same time can introduce additional market risks associated with leverage and the infrastructure characteristics of the derivatives market. Financial market regulators, for their part, are closely monitoring the growing involvement of hedge funds in crypto.

Not only hedge funds but also large asset managers and banks are also integrating digital finance into their activities. For example, BlackRock begun offering Bitcoin and specialized products to its clients. In January 2024, BlackRock launched new ETFs linked to Bitcoin, attracting more than $100 billion in assets in a short period of time. The lion's share of these funds went to BlackRock iShares' Bitcoin Trust, which reached up to $70 billion [18]. This demand indicates significant interest from institutional investors in regulated crypto products. In its analytical report, BlackRock Investment Institute officially recommended for the first time that clients consider small allocations to Bitcoin: up to 2% of the portfolio for investors who can afford increased risk due to high volatility. According to BlackRock analysts, adding Bitcoin can benefit a portfolio due to its low correlation with other asset classes and as a source of alternative returns13. At the same time, they emphasize the need for careful control and said that more than 2% reaching up to 4% weighting significantly increases the risk exposure of the portfolio due to the volatility of Bitcoin and the asset itself remains prone to sharp declines and periodically moves in sync with risky stocks. Thus, the strategy of leading financial institutions is to moderately and carefully integrate digital assets. Small shares, regular review of correlations, market dynamics and development of infrastructure for secure access to these assets, as well as flexible reactions based on current geopolitical situations and regulations form central banks also determine strategies.

Other financial giants are also taking steps towards digital assets. Fidelity Investments, one of the largest investment companies in the US, had previously created a division called Fidelity Digital Assets and launched its own cryptocurrency funds in 2024. Fidelity offered investors the first two crypto ETFs in the industry: Wise Origin Bitcoin Trust (FBTC) and Ethereum Fund (FETH), focused on Bitcoin and Ether, respectively. The company emphasizes that these products are intended for investors with a high risk tolerance, due to the fact that underlying assets are highly volatile and may lose liquidity in extreme conditions, for instance the price collapse at the end of 2025th. Moreover, they also issuing their stable coin in Fidelity Digital Dollar (FIDD) "at a time of increasing regulatory clarity to better support our customers' needs"[19] in 2026. Despite the underlying risks, the emergence of such funds from traditional market players indicates the gradual institutionalization and adoption of stablecoin and digital assets, — they are becoming a recognized part of the spectrum of investment instruments, especially due to instability of financial markets due to current unstable geopolitical situation as well as other factors that could influence on them (e.g. crash of gold futures price in 2026).

The role of banks in the development of stablecoins and tokenized solutions

Investment bank JPMorgan Chase introduced its own digital token(JPM Coin)[20] for instant settlements between corporate clients in 2020. As for 2024, it transformed its blockchain division, Onyx, into the Kinexys platform, expanding its functionality to multi-currency settlements and tokenization of real assets. JPMorgan also participated in Siemens project — its Onyx blockchain network was used for settlements on Siemens digital commercial papers, which set an important precedent for cooperation between banks and corporations in the field of finance tokenization. At the same time, consortia of large banks are considering joint stablecoin projects. According to Reuters, in 2025[21, 22], several of the largest US banks (JPMorgan, Bank of America, Citigroup, etc.) discussed the possibility of issuing a joint stablecoin for interbank settlements. Although these initiatives were at an early stage, the very fact of such discussions not only means but even emphasises the recognition of the potential of stablecoins in modernising the payment infrastructure. Bankers note that the use of stablecoins could speed up payments, reduce their cost, and even strengthen the global position of the US dollar through its tokenized versions. Thus, financial institutions are using digital finance both to diversify their client portfolios (through investment products) and to reduce operational risks and increase efficiency (through their own digital currencies and blockchain platforms).

Comparative analysis: share of digital assets and risk hedging

Institutional investors usually limit themselves to 1-2% of Bitcoin in their portfolios (BlackRock), most hedge funds also do not exceed 2%, with only a few bringing the share up to 7%.

Financial corporations (Fidelity) one one hand offer crypto products as small, high-risk alternative investments as well as believe in stablecoins and implement them as a leading technology. The exception is innovative financial companies such as MicroStrategy, where Bitcoin accounted for the majority of liquid assets and approximately 3.2% of global supply in 2025, accompanied by high volatility and atypical for standard risk management.

Cryptocurrencies provide diversification through moderate correlation (0.5 with stocks, 0.2 with bonds). Bitcoin can partially hedge market and inflation risk, although its protective properties are unstable (decline in 2022 despite inflation). Stablecoins hedge liquidity and currency risks, enabling fast USD payments 24/7. Risks: issuer reliability and regulatory requirements. Tokenized bonds reduce operational and counterparty risks, speed up settlements (example: Siemens), and increase transparency and liquidity through fragmentation and global access. Regulatory and reputational risks remain significant: tighter controls in the US and EU encourage institutions to use only regulated instruments (ETFs). Thus, digital finance allows for diversification of market, operational, and compliance risks, provided that implementation is controlled.

CONCLUSIONS:

The development of digital finance in 2024—2025 has enormously expanded due to opportunities for risk diversification for global investors and businesses as well as transactions optimizations. MNEs and hedge funds, are gradually integrating crypto assets and mostly focused on implementing stable coins into their portfolios and operations.

Digital assets used both for investment and for optimizing financial activities. This help companies to become more resilient in global operations, despite the fact that it requires measuring volatility and complying with regulatory norms, which is hardly influenced by current geopolitical situations.

Hedge funds and investment companies include cryptocurrencies as an alternative class in multi-component portfolios, based on MPT, however usually in moderate amounts, which improves diversification but still with high attention to a big volatility of crypto assets. According to survey the trend is ongoing and more than half of funds are already in the game, expecting the role of digital assets to grow further

Financial institutions (banks) are using digital finance to improve the reliability and speed of financial services by issuing stablecoins and using blockchain platforms, due to understanding of ongoing trends(legalisations of stablecoins and ongoing regulations of cryptocurrency)

Overall, participants of finance market showed that digital finance, especially crypto currencies and stable coins are an effective diversification tools. MNEs and banks also consider it to be a great technology in order to be implemented for eliminating risks connected with exchange rate and settlements procedure. Due to the nature of digital assets, it can improve a portfolio's risk/return profile, but it is still critically important to be aware of drawbacks of these assets. Corporate financiers adhere to the principle of experimenting with new instruments on a limited share of capital, investing in the development of expertise and control, and complying with regulatory requirements.

Digital finance is looking promising to companies, therefore there are an expectations to an ongoing trend of tokenized obligations(started by Siemens) and ensuring usage of stablecoins. However, the main benefits of crypto could be still offset by strong regulations, that is ought to be implemented by different countries. In future, digital assets can be expected to become a common component of global portfolios and solutions for different MNEs—alongside stocks, bonds, and commodity assets, allowing for more effective risk distribution and optimisations of transaction risks in an uncertain global financial environment.

This study has several limitations that should be considered when interpreting the results. The empirical analysis is based on historical market data and focuses on a limited set of representative assets, which may not fully capture the diversity of digital financial instruments and institutional portfolio strategies. In addition, correlation estimates are time-varying and may differ across market regimes, particularly during extreme stress periods. The portfolio analysis relies on fixed asset weights and does not account for dynamic rebalancing or transaction costs.

Future research may extend the analysis by incorporating a broader range of digital assets, applying regime-switching or dynamic correlation models, and examining the impact of regulatory developments on the role of digital finance in institutional risk management.

Further studies could also explore firm-level data and cross-country differences in the adoption of digital financial instruments by multinational enterprises.

Література

1. Bakry W. Bitcoin as a portfolio diversification tool: Evidence from conditional risk measures. Journal of Asset Management. 2021. vol. 22, № 4. P. 289—304.

2. Lehto E., Nasiri F. and Luoma A. Cryptocurrencies in emerging market portfolios: Risk-return and diversification effects. Emerging Markets Review. 2022. vol. 51. URL: https://www.emerald.com/cfri/article-abstract/12/1/20/509835/Cryptocurrencies-and-portfolio-diversification-in?redirectedFrom=fulltext&utm_source=researchgate.net&utm_medium=article. (дата звернення: 03.02.2026).

3. Sharma M. Does Bitcoin add to risk diversification of alternative investment fund portfolio? International Journal of Financial Studies. 2025. vol. 13, № 4. P. 1—18.

4. Markowitz H. M. Portfolio selection. The Journal of Finance. 1952. vol. 7, № 1. P. 77—91.

5. Investing.com. MicroStrategy halts Bitcoin buying, holds $44 billion worth, 2025. URL: https://www.investing.com/news/stock-market-news/microstrategy-halts-bitcoin-buying-holds-44-billion-worth-93CH-3846070 (дата звернення: 03.02.2026).

6. Reuters. Bitcoin hoarder Strategy reveals $17.44 billion unrealized loss in fourth quarter, 2026. URL: https://www.reuters.com/business/bitcoin-hoarder-strategy-reveals-1744-billion-unrealized-loss-fourth-quarter-2026-01-05/ (дата звернення: 03.02.2026).

7. Siemens AG. Siemens issues first digital bond on blockchain, 2024. URL: https://press.siemens.com/global/en/pressrelease/siemens-issues-first-digital-bond-blockchain (дата звернення: 03.02.2026).

8. Siemens AG. Siemens remains pioneer: another digital bond successfully issued on blockchain, 2025. URL: https://press.siemens.com/global/en/pressrelease/siemens-remains-pioneer-another-digital-bond-successfully-issued-blockchain (дата звернення: 03.02.2026).

9. Ledger Insights. Siemens digital bond traded on regulated trading venue 360X, 2025. URL: https://www.ledgerinsights.com/siemens-digital-bond-traded-on-regulated-trading-venue-360x/ (дата звернення: 03.02.2026).

10. BitcoinTreasuries.NET. Tesla, Inc. — Bitcoin treasury holdings and analysis, 2026. URL: https://bitcointreasuries.net/public-companies/tesla (дата звернення: 03.02.2026).

11. Visa Inc. Stablecoins and the future of on-chain finance, 2025. URL: https://corporate.visa.com/en/solutions/crypto/stablecoins/stablecoins-and-the-future-of-onchain-finance.html (дата звернення: 03.02.2026).

12. Mastercard Inc. Mastercard unveils end-to-end capabilities to power stablecoin transactions from wallets to checkouts, 2025. URL: https://www.mastercard.com/news/press/2025/april/mastercard-unveils-end-to-end-capabilities-to-power-stablecoin-transactions-from-wallets-to-checkouts/ (дата звернення: 03.02.2026).

13. PayPal Holdings, Inc. PayPal drives crypto payments into the mainstream, reducing costs and expanding global commerce, 2025. URL: https://newsroom.paypal-corp.com/2025-07-28-PayPal-Drives-Crypto-Payments-into-the-Mainstream,-Reducing-Costs-and-Expanding-Global-Commerce (дата звернення: 03.02.2026).

14. Європейський парламент. Regulatory perspectives on digital assets and stablecoins, 2025. URL: https://www.europarl.europa.eu/cmsdata/296400/DEZERNAT%20June%202025_FINAL.pdf (дата звернення: 03.02.2026).

15. Center for Global Development. Are international financial institutions doing enough to prepare for the stablecoin tsunami?, 2024. URL: https://www.cgdev.org/sites/default/files/are-international-financial-institutions-doing-enough-prepare-stablecoin-tsunami.pdf (дата звернення: 03.02.2026).

16. The White House. Establishment of the Strategic Bitcoin Reserve and United States Digital Asset Stockpile, 2025. URL: https://www.whitehouse.gov/presidential-actions/2025/03/establishment-of-the-strategic-bitcoin-reserve-and-united-states-digital-asset-stockpile/ (дата звернення: 03.02.2026).

17. Alternative Investment Management Association (AIMA). Crypto-friendly regulatory changes accelerate institutional investment, 2025. URL: https://www.aima.org/article/press-release-crypto-friendly-regulatory-changes-accelerate-institutional-investment.html (дата звернення: 03.02.2026).

18. BlackRock. How Bitcoin is defining financial services and portfolios, 2025. URL: https://www.blackrock.com/au/insights/ishares/how-bitcoin-is-defining-financial-services-and-portfolios (дата звернення: 03.02.2026).

19. Fidelity Digital Assets. Fidelity Investments® to expand digital asset investment lineup with stablecoin launch: Fidelity Digital Dollar (FIDD), 2026. URL: https://www.fidelitydigitalassets.com/research-and-insights/fidelity-investmentsr-expand-digital-asset-investment-lineup-stablecoin (дата звернення: 03.02.2026).

20. Reuters. JPMorgan Chase to create digital coins using blockchain for payments, 2019. URL: https://www.reuters.com/article/technology/jpmorgan-chase-to-create-digital-coins-using-blockchain-for-payments-idUSKCN1Q3235/ (дата звернення: 03.02.2026).

21. The Fintech Times. J.P. Morgan becomes first bank to issue USD deposit token on a public blockchain, 2025. URL: https://thefintechtimes.com/j-p-morgan-becomes-first-bank-to-issue-usd-deposit-token-on-a-public-blockchain/ (дата звернення: 03.02.2026).

22. Ledger Insights. JP Morgan launches blockchain-based Kinexys Digital Payments in GBP/UK, 2025. URL: https://www.ledgerinsights.com/jp-morgan-launches-blockchain-based-kinexys-digital-payments-in-gbp-uk/ (дата звернення: 03.02.2026).

23. CoinGecko. Cryptocurrency Market Capitalization Charts. CoinGecko, 2025. URL: https://www.coingecko.com/uk/charts (дата звернення: 03.02.2026).

References:

1. Bakry, W. (2021), "Bitcoin as a portfolio diversification tool: Evidence from conditional risk measures.", Journal of Asset Management, vol. 22, no. 4, pp. 289—304.

2. Lehto, E., Nasiri, F. and Luoma, A. (2022), "Cryptocurrencies in emerging market portfolios: Risk-return and diversification effects", Emerging Markets Review, [Online], vol. 51, available at: https://www.emerald.com/cfri/article-abstract/12/1/20/509835/Cryptocurrencies-and-portfolio-diversification-in?redirectedFrom=fulltext&utm_source=researchgate.-net&utm_medium=article. (Accessed 3 February 2026).

3. Sharma, M. (2025), "Does Bitcoin add to risk diversification of alternative investment fund portfolio?" International Journal of Financial Studies, vol.13 no. 4, pp. 1—18.

4. Markowitz, H. M. (1952), "Portfolio selection", The Journal of Finance, vol. 7, no. 1, pp. 77—91.

5. Investing.com (2025), "MicroStrategy halts Bitcoin buying, holds $44 billion worth", available at: https://www.investing.com/news/stock-market-news/microstrategy-halts-bitcoin-buying-holds-44-billion-worth-93CH-3846070. (Accessed 3 February 2026).

6. The official site of Reuters (2026), "Bitcoin hoarder Strategy reveals $17.44 billion unrealized loss in fourth quarter", available at: https://www.reuters.com/business/bitcoin-hoarder-strategy-reveals-1744-billion-unrealized-loss-fourth-quarter-2026-01-05/. (Accessed 3 February 2026).

7. The official site of Siemens AG (2024), "Siemens issues first digital bond on blockchain", available at: https://press.siemens.com/global/en/pressrelease/siemens-issues-first-digital-bond-blockchain. (Accessed 3 February 2026).

8. The official site of Siemens AG (2025), "Siemens remains pioneer: another digital bond successfully issued on blockchain", available at: https://press.siemens.com/global/en/pressrelease/siemens-remains-pioneer-another-digital-bond-successfully-issued-blockchain. (Accessed 3 February 2026).

9. The official site of Ledger Insights (2025), "Siemens digital bond traded on regulated trading venue 360X", available at: https://www.ledgerinsights.com/siemens-digital-bond-traded-on-regulated-trading-venue-360x/. (Accessed 3 February 2026).

10. The official site of BitcoinTreasuries.NET (2026), "Tesla, Inc. — Bitcoin treasury holdings and analysis.", available at: https://bitcointreasuries.net/public-companies/tesla. (Accessed 3 February 2026).

11. The official site of Visa Inc. (2025), "Stablecoins and the future of on-chain finance", available at: https://corporate.visa.com/en/solutions/crypto/stablecoins/stablecoins-and-the-future-of-onchain-finance.html. (Accessed 3 February 2026).

12. The official site of Mastercard Inc. (2025), "Mastercard unveils end-to-end capabilities to power stablecoin transactions from wallets to checkouts", available at: https://www.mastercard.com/news/press/2025/april/mastercard-unveils-end-to-end-capabilities-to-power-stablecoin-transactions-from-wallets-to-checkouts/. (Accessed 3 February 2026).

13. The official site of PayPal Holdings, Inc. (2025), "PayPal drives crypto payments into the mainstream, reducing costs and expanding global commerce." available at: https://newsroom.paypal-corp.com/2025-07-28-PayPal-Drives-Crypto-Payments-into-the-Mainstream,-Reducing-Costs-and-Expanding-Global-Commerce. (Accessed 3 February 2026).

14. The official site of European Parliament (2025), "Regulatory perspectives on digital assets and stablecoins.", available at:https://www.europarl.europa.-eu/cmsdata/296400/DEZERNAT%20June%202025_-FINAL.pdf. (Accessed 3 February 2026).

15. The official site of Center for Global Development (2024), "Are international financial institutions doing enough to prepare for the stablecoin tsunami?", available at: https://www.cgdev.org/sites/default/files/are-international-financial-institutions-doing-enough-prepare-stablecoin-tsunami.pdf. (Accessed 3 February 2026).

16. The official site of The White House (2025), "Establishment of the Strategic Bitcoin Reserve and United States Digital Asset Stockpile.", available at: https://www.whitehouse.gov/presidential-actions/2025/03/establishment-of-the-strategic-bitcoin-reserve-and-united-states-digital-asset-stockpile/. (Accessed 3 February 2026).

17. The official site of Alternative Investment Management Association (AIMA) (2025), "Crypto-friendly regulatory changes accelerate institutional investment", available at: https://www.aima.org/article/press-release-crypto-friendly-regulatory-changes-accelerate-institutional-investment.html. (Accessed 3 February 2026).

18. The official site of BlackRock (2025), "How Bitcoin is defining financial services and portfolios", available at: https://www.blackrock.com/au/insights/ishares/how-bitcoin-is-defining-financial-services-and-portfolios. (Accessed 3 February 2026).

19. The official site of Fidelity Digital Assets (2026), "Fidelity Investments to expand digital asset investment lineup with stablecoin launch: Fidelity Digital Dollar (FIDD)", available at: https://www.fidelitydigitalassets.com/research-and-insights/fidelity-investmentsr-expand-digital-asset-investment-lineup-stablecoin. (Accessed 3 February 2026).

20. The official site of Reuters (2019), "JPMorgan Chase to create digital coins using blockchain for payments.", available at: https://www.reuters.com/article/technology/jpmorgan-chase-to-create-digital-coins-using-blockchain-for-payments-idUSKCN1Q3235/. (Accessed 3 February 2026).

21. The official site of The Fintech Times (2025), " J.P. Morgan becomes first bank to issue USD deposit token on a public blockchain", available at: https://thefintechtimes.com/j-p-morgan-becomes-first-bank-to-issue-usd-deposit-token-on-a-public-blockchain/. (Accessed 3 February 2026).

22. The official site of Ledger Insights (2025), "JP Morgan launches blockchain-based Kinexys Digital Payments in GBP/UK.", available at: https://www.ledgerinsights.com/jp-morgan-launches-blockchain-based-kinexys-digital-payments-in-gbp-uk/. (Accessed 3 February 2026).

23. The official site of CoinGecko. (2025), "Cryptocurrency Market Capitalization Charts. CoinGecko.", available at: https://www.coingecko.com/uk/charts. (Accessed 3 February 2026).

Отримано редакцією журналу / Received: 02. 03.26
Прорецензовано / Revised: 09. 03.26
Схвалено до друку / Accepted:17.03.26