THE ROLE OF CRYPTOCURRENCIES IN MODERN BANKING

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Abstract:

Cryptocurrency is a digital currency that uses cryptography. Most cryptocurrencies are not issued and regulated by a central authority and use blockchain technology in the decentralized system. For the purpose of developing this article, existing statistics, reports of international institutions, and the opinions of experts were examined. Since 2009, the global cryptocurrency market has shown significant growth in terms of number and capitalization, with the main focus being on Bitcoin. International practice demonstrates the growing popularity of cryptocurrencies as a means of payment in e-commerce systems. All of the above created important opportunities for banking development by offering services for carrying out cryptocurrency transactions. The activity of crypto banks, cryptocurrency-friendly banks and neobanks is also remarkable. New related regulations have been approved for this in many countries. Banks must also take into account the need to manage security systems and related risks in the cryptocurrency market.

Keywords: *cryptocurrency; blockchain; payment instrument; money laundering*

JEL classification: *B17, E42, F31*

Introduction

Cryptocurrency (also called "crypto") is a digital (or virtual) currency, the implementation of which takes place within decentralized networks based on blockchain technology. The security of cryptocurrency transactions is ensured by verifying and maintaining records by a decentralized system using cryptography. Cryptocurrency can be used to purchase goods and services or can be traded to obtain profit from investment or speculative operations. (*Cryptocurrency*, n.d.) (Investopedia,2024), (Oswego), (Rosen, 2024)

Currently, four types of cryptocurrencies are known (CFI), (Investopedia, 2024), (Kraken, 2024):

➢*Payment cryptocurrency* is a digital currency intended to be used as a medium of exchange and performs the function of electronic cash in a purely peer-to-peer version based on a dedicated blockchain. The most popular currency of this type is Bitcoin. Based on data provided by CoinMarketCap, the main cryptocurrency on this market is Bitcoin whose market capitalization increased from $14.8 billion on 12/24/2016 to $2.1 trillion on 12/17/2024. And the market price of this cryptocurrency increased from $463.55 on 12/19/2016 to

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$106,030.69 on 12/17/2024. (CoinMarketCap, 2024)

➢*Utility Token* is a form of cryptocurrency intended to provide access to a specific function or service within a blockchain ecosystem. That is, it is a cryptographic asset that runs on top of another blockchain. (Barchat, 2024), (Trust Machines) The most eloquent cryptocurrency of this kind is Ethereum, whose market capitalization increased from $133.13 billion on 07/11/2022 to $443.46 billion on 12/18/2024. (Ycharts) The market price of Ethereum increased from $142.11 on 04/03/2020 to $3886,88 on 12/18/2024. (CoinMarketCap, 2024)

➢*Stablecoin* is a type of cryptocurrency whose value is tied to another asset (fiat currency, commodity, financial instrument) to maintain a stable price. (Coinbase),

The main forms of stablecoins are:

- Fiat-backed stablecoin is tied to a fiat currency (most commonly the US dollar or euro);
- Commodity-backed stablecoin is a cryptocurrency tied to the market value of commodities such as gold, silver, or oil.
- Crypto-collateralized stablecoin is backed by other cryptocurrencies.
- Algorithmic stablecoin may or may not hold a reserve asset, the stability of which is maintained by controlling its supply through an algorithm, essentially a computer program.

The most representative stablecoin is Tether (USDT), which is pegged to the US dollar.

The Tether's market capitalization increased from $0.01 billion on August 2016 to $118.1 billion on August 2024. (Statista, 2024)

•*Central Bank Digital Currency (CBDC)* is a form of cryptocurrency issued by a central bank based on blockchain technology, maintaining full authority and regulation over it. CBDC is issued in the form of a token or with an electronic record associated with the currency and linked to the national currency of the issuing country or region. Currently, CBDCs have been launched in 9 countries, and they are being explored in 78 countries. (IBM)

In the opinion of Josh Howarth, the global number of cryptocurrencies has increased from 50 in the year 2013 to 13217 in March 2024. (Howarth, 2024)

Powered by CoinGecko, in the period 01.01.2014-17.12.2024 the level of capitalization of the global cryptocurrency market increased from $10.6 billion to $3908.2 billion. (CoinGecko, 2024)

The information published by Dorothy Neufeld and Christina Kostandi (2024) demonstrated that in 2024 an estimated 562 million people worldwide (up 142 million by 2023 (Triple A, 2024)). It is an equivalent of 6.8% of the global population. Of which 326.8 million live in Asia, 72.2 million - in North America, 55.2 million - South America, 49.2 million - Europe, 43.5 million - Africa.

The purpose of this work is to highlight the specific aspects of the activity of banks on the cryptocurrency market.

Also, the conducted research set the following tasks:

- Determining the areas of banking activity of the application of cryptocurrencies.
- Highlighting the necessary conditions and risks of such activities.

Description of the Problem

Over the past eight years, a new segment has been dynamically forming on the global financial market, which offers banks certain opportunities for activity.

After examining the reports of specialized companies, the existence of a global cryptocurrency banking market can be noted.

In 2021, Data Bridge Market Research valued the cryptocurrency banking market at $1.49 billion and forecasted this value to grow to $2.52 billion in 2029, achieving a CAGR of 6.80%. (Bridge Market Research, 2022)

In 2022, Market Research Future estimated the size of the cryptocurrency banking market at $2.52 billion and forecasted the growth of that market to $3.23 billion in 2023, $4.14 billion in 2024, and up to $30.0 billion by 2032. And during the forecast period, the CAGR will be approximately 28.1%. (Market Research Future, 2025)

Market Research Future also presented the structure of the cryptocurrency banking market in current and prospective view (Table 1).

Among the products offered by banks in the examined market are Cryptocurrency Wallets whose market value may increase from $1 billion in 2023 to $9.0 billion in 2032.

And from a geographical point of view, North America has an important value, which is set to grow from $1.5 billion in 2023 to $14.0 billion in 2032.

The development of banking activities in the cryptocurrency market is linked to a complex of specific aspects, which will be examined further.

Methodology and Data

The object of the research is the use of cryptocurrencies in banking activity. The information base of the research was formed from the data provided by specialized companies and the views of experts in the field published in various articles on the Internet.

Table 1

Cryptocurrency banking market structure ($billion)

Basic segments	2023	2032	Geographic distribution	2023	2032
Cryptocurrency Wallets	1.0	9.0	North America	1.5	14.0
Crypto Lending	0.8	7.0	Europe	0.9	8.5
Crypto Merchant Services	0.6	5.0	APAC	0.7	5.5
Payment Processing	0.5	4.0	South America	0.07	1,0
Investment Services	0.3	5.0	MEA	0.06	1.0

Source: (Market Research Future, 2025)

After analyzing the accumulated information, its synthesis was carried out to present a general picture of the opportunities for banking activities on the global cryptocurrency market.

Results

The development of banking activity on the cryptocurrency market has been influenced by certain factors:

Increasing acceptance of digital currencies: As previously mentioned, the number of cryptocurrency users globally has recently shown significant growth as an attractive alternative to traditional banking solutions. It is also worth mentioning certain benefits of these currencies Yasar Kinza (2023):

Decentralization: Cryptocurrency is not issued by a single financial or governmental entity and its value is not dictated by a central bank or authority.

Lower transaction fees: Cryptocurrency transacting fees are either very low or zero due to the elimination of intermediaries from the process. They are also faster due to the lack of foreign exchange procedures, thus increasing the efficiency of operations and reducing costs.

Inflation protection: Cryptocurrencies have limited supply, which makes them considered as a hedge against inflation.

Potential for high returns: While cryptocurrencies come with significant potential risks, most cryptocurrency investments at the moment are seen as having a high rate of return. According to data presented by Allied Market Research (2024), the global cryptocurrency market value was $2.3 billion in 2023 and was estimated to grow to $5.5 billion in 2033, thus allowing a CAGR of 7.5% over the forecast period.

Accessibility: Cryptocurrencies, due to the operation of decentralized networks, can be accessed with an internet connection and a crypto wallet, and opening a crypto wallet does not require identity verification, background checks, or credit checks.

Transparency: Cryptocurrency transactions are anonymous, but data recorded in a public blockchain ledger is available for viewing by the holder using a public key used for identification.

Requesting cryptocurrencies in e-commerce: As the cryptocurrency market expands, they are increasingly accepted in various sectors, including e-commerce. In 2022, the value of consumer (B2C) cryptocurrency transactions in global e-commerce amounted to $11.6 billion, with an increase forecast to $39.0 billion in 2026. At the same time, the share of these transactions in global e-commerce, respectively, increased from 0.19% to 0.5%. (Statista, 2025)

Cryptocurrency infrastructure development: The crypto infrastructure constitutes a complex of hardware, software and network components designed to ensure the smooth functioning of cryptocurrency applications and blockchain networks. (Williams, 2023) The recent growth in the number of cryptocurrency exchanges and platforms that simplify the buying, selling, and storing of digital assets is remarkable.

Technological advances in Blockchain: Innovations in the application of blockchain technology have increased the security, speed, and transparency of cryptocurrency transactions. As blockchain technology matures, new protocols and frameworks are being applied, enabling more efficient transactions and improved scalability. One effect of advances in the application of blockchain technology has been the development of decentralized finance (DeFi) and non-fungible tokens (NFTs). DeFi is an emerging digital ecosystem designed to enable people to send, buy, and exchange financial assets without using the services of banks, brokers, or exchanges. (Montevirgen) NFTs are certain assets that have been tokenized through a blockchain, represent unique identification codes created from metadata through an encryption function, and can be traded for money,

cryptocurrencies, or other NFTs. (Sharma, 2024) In this regard, the authors Lennart Ante and Ingo Fiedler (2024) state: ”The evolution of DeFi and NFTs highlights a shift towards more decentralized and community-driven models of finance and ownership. DeFi, by enabling a permissionless and transparent ecosystem, allows for financial products and services to be accessed without centralized control. Similarly, NFTs are redefining digital property rights, offering a pathway for creators to directly manage, monetize, and transfer their work in a manner that bypasses traditional gatekeepers.”

Growing regulatory clarity and government support: Authorities in many countries have recognized the potential benefits of cryptocurrencies and blockchain technology, leading to the creation of supportive regulatory frameworks. As these regulations are improved, the uncertainties and risks associated with cryptocurrency transactions are reduced, encouraging both traditional financial institutions and new players to participate in the market. These regulations also encourage innovation and increase consumer confidence. For example, in the United Kingdom, the regulation of digital assets is carried out through the Financial Services and Markets Act, which granted the government the ability to designate crypto-asset activities and establish reporting and operational requirements, as well as in relation to consumer protection. (Bajpai, 2024) In Switzerland, a law on distributed ledger technologies (DLT) was approved in 2020, introducing the concept of “DLT securities” and allowing tokenization for rights, claims, and financial instruments. (Garnett, 2025) In the European Union, this includes the Markets in Crypto-Assets Regulation (MiCA) and privacy laws such as the General Data Protection Regulation (GDPR). (Alpha Point, 2024) Likewise, the statement of expert Dave McKenzie (2024) can be remembered: ”…introducing comprehensive frameworks like the EU’s MiCA regulations has provided greater clarity, encouraging traditional banks to enter the crypto space. The SEC’s approval of Bitcoin and Ethereum ETFs in the US has signaled growing institutional acceptance.”

At the same time, some experts draw attention to the following aspects related to the acceptance of cryptocurrencies by banks (McKenzie, 2024), (One Safe):

High Volatility: Major cryptocurrencies, such as Bitcoin, exhibit a significant level of volatility. During the period 11.11.2021-10.11.2022, the market price of Bitcoin decreased from $64978.89 to $15883.15, and then increased through oscillations to $104293.57 on 16.12.2024. (CoinMarketCap, 2024)

Reputational concerns: Banks are advised to beware of associations with potential scams, market manipulation, or criminal activity. Given that cryptocurrencies are not officially controllable and the exchange rate varies widely, according to banking standards, many institutions prefer to avoid the risk.

Compliance challenges: Cryptocurrency flows and transactions can often be opaque or too complex to satisfy banks involved in crypto exchanges.

Regulatory hurdles: In some countries, navigating the various regulations regarding cryptocurrencies can be very complicated and daunting. It is also important to keep in mind that in some countries (such as Algeria, Bangladesh, Egypt, Qatar, etc.) the use of Bitcoin is considered illegal.

KYC difficulties: Promoting the Know Your Customer principle is more complicated when anonymity is one of the selling points of crypto.

Investment in related technologies: in order to effectively monitor transactions (and identify suspicious ones), banks need advanced technologies, the implementation of which imposes significant costs.

The development of the global cryptocurrency market has led to the emergence of two new types of banking institutions: crypto friendly banks and crypto banks.

Crypto friendly bank is a financial institution that has adopted policies and practices to support cryptocurrency transactions and related activities. (Rotkiewicz, 2025)

A crypto friendly bank is a banking institution that accepts cryptocurrencies. This means that they have integrated cryptocurrencies and blockchain technology into their core services. (*What is…*, n.d.)

The service offering of these banks is related to meeting the needs of cryptocurrency users and includes (Rotkiewicz, 2025):

- Secure custody solutions for digital assets;
- Lending products;
- Conversion of fiat currencies into cryptocurrencies and vice versa.

Crypto bank is a financial institution that offers the same financial services as traditional banks, but with a preference for cryptocurrencies. Essentially, a crypto bank is a platform designed to conduct traditional banking operations with cryptocurrencies. It can be organized in various forms, from traditional banks with crypto licenses to digital asset platforms with crypto bank functionality. (Petraschuk, 2023)

Crypto bank's activity is based on advanced technologies, such as Blockchain, Database, Artificial Intelligence, Machine Learning and WEB 3.0.

Unlike a traditional bank, a crypto bank adds decentralized financial services, offering blockchain transactions, crypto investments, wallets, loans, and more. In this way, a crypto bank bridges the gap between centralized and decentralized economies, combining crypto and fiat services into a single entity. (Alhalabi, 2023)

Expert Hazem Alhalabi (2023) mentions the following special offers from crypto banks:

- *Crypto accounts:* It is about opening accounts and managing digital assets through crypto wallets. Based on Web 3.0 technology, account owners can send and receive virtual money and allocate funds for various investments. It can also be about currency exchange operations.
- *Crypto investments*: Users are turning to crypto investment opportunities such as staking, yield farming, liquidity pools, and other DeFi projects. It is also possible to invest in cryptocurrencies by simply trading virtual currencies or by holding digital assets for the long term.
- *Security:* Banks are dedicating significant resources to securely adapt to the specific environment for storing cryptocurrencies and transacting with fiat and digital money, given the process of increasing cyber threats on decentralized platforms, where various breaches and hacks have occurred. This involves applying the most advanced security technologies and authentication measures.
- *Fiat-to-crypto exchange:* Crypto bank acts as a bridge between traditional banking and the decentralized ecosystem, enabling transactions and data exchanges. This bank's offerings enhance the user experience, with all functionalities located in a single application or website, where the user can purchase cryptocurrencies using fiat currency.
- *Crypto payment gateways:* Crypto gateways are integrated interfaces designed to process payments on various websites, e-commerce stores, and exchange platforms. They use application programming interfaces (APIs) that exchange data between servers and consoles. Crypto gateways form the user interface on the checkout page, the speed of the transaction, the fees, and the currencies accepted.

Cryptocurrencies have come into the sights of neobanks.

Neobanks (or digital banks) operate entirely online. Their service offering consists of checking and savings accounts, loans, and some investment options and is aimed at a tech-

savvy audience. (One Safe)

A neobank (also known as a fintech bank, challenger bank, or digital bank) is a digital financial company that offers banking services without having a physical location. The basic goal of such a banking institution is to streamline banking by providing financial services in a customer-centric format only digitally. (Antosz, 2023)

As the popularity of cryptocurrencies increases, these financial institutions are increasingly adopting crypto services. (Alpha Point, 2024) Neobanks like SoFi and Revolut have integrated crypto services into their platforms, allowing customers to diversify their portfolios directly in their accounts, which further differentiates them from traditional banks, which have been slow to adopt crypto. (Alpha Point, 2024)

Experts from Alpha Point (2024) presented the following arguments for banks to accept activity in the cryptocurrency market:

- *New sources of revenue:* When it comes to the opportunity to increase banks' revenues from the offer of crypto services, the following can be mentioned (Alpha Point, 2024):
  - *Trading:* Banks can offer customers the opportunity to buy, sell, and trade cryptocurrencies on their platforms, charging trading fees.
  - *Custody:* The bank may allow customers to store cryptocurrencies using an internal wallet, which would allow for transaction fees to be earned.
  - *Tokenization:* It is a process of creating a digital representation of a real thing on a banking platform for both experienced and new investors to digitize real-world assets.
- *Improve existing products:* Cryptocurrencies can replace traditional services such as savings accounts and remittances. Remittances provide a major source of revenue for many banks. Banks can use crypto to avoid intermediary fees, giving customers an easy and affordable way to send money. Banks can also offer customers crypto savings accounts.
- *Bigger market share:* Banking institutions can expand their customer base by introducing cryptocurrency into their service offerings, especially from tech-savvy customers, often Millennials and Generation Z, as well as unbanked and underbanked populations. This, in turn, could increase the bank's market share.
- *Enhanced security:* Banking institutions are investing significant financial resources in developing robust security technologies and protocols to protect themselves and their customers. Some experts believe that protecting banks from fraudulent activities is possible using Blockchain technology. This is because Blockchain records all transactions that cannot be altered and external forces do not have access to their management. Blockchain is also highly encrypted to prevent money manipulation, fraud, and money laundering schemes.
- *Quicker transactions:* An international transfer in fiat currency can take 1-5 business days, and crypto transactions can take between 30 minutes and two hours to complete due to the fact that they are decentralized and have no exchange rates. In this context, expert Marissa A. Scicchitano states: ”…banks can utilize public blockchains, including stablecoins, to speed up their payment processes. Blockchain technology provides a faster and less expensive alternative to clearing houses when processing transactions. The clearing and settlements could occur at a much faster rate if banks utilized blockchain technology.”

Some experts also point out the problem of smart contracts.

These are digital agreements stored and executed on a blockchain network, which are programmed to perform specific actions once predefined conditions trigger them. (Cryptopedia, 2025)

There is a low level of trust between the parties when a smart contract transaction is concluded, because the transaction is based on computer code and not on the behavior of a person. Banks could strengthen this trust by becoming a trusted third party, which can use smart contracts for mortgages, commercial loans, letters of credit or other transactions. (Scicchitano)

Based on the views of some experts on the benefits of accepting Bitcoin by banks, certain conclusions can be drawn regarding its impact on the respective market: (Moomoo, 2024)

Increased legitimacy and trust: Institutional acceptance of Bitcoin increases its credibility and signals to other market participants about the safety and legitimacy of this cryptocurrency.

Impact on market volatility: Some banking institutions are interested in long-term investments, which can bring stability to the volatile Bitcoin market. But on the other hand, institutional investors typically trade relatively large volumes, which could amplify Bitcoin's inherent volatility if they buy or sell significant volumes in a short time frame.

Increased liquidity: The involvement of banks with higher trading volumes in the Bitcoin market can increase its liquidity.

Market infrastructure development: Banks participating in the Bitcoin market are developing market infrastructure, providing custody services, trading platforms, and payment systems, making Bitcoin more attractive to retail investors and companies.

Diversification for institutional portfolios: Bitcoin, as a decentralized asset, is not directly correlated to traditional assets like stocks and bonds, making it a diversification tool.

Stimulus for innovation in digital asset technology: The institutional involvement of banks in the cryptocurrency market encourages innovation through investments in research, development, and product improvement.

Concentration of Bitcoin ownership: Institutional acceptance may lead to a concentration of Bitcoin ownership among a small number of large entities, reducing the decentralized essence of Bitcoin.

The expert group led by Kumshe Hauwa Modu (2024) came up with the following recommendations in light of the implementation of cryptocurrency activities in banking:

Traditional banking institutions should promote technological innovation by incorporating blockchain technology into their operational processes.

Banking institutions are advised, using their regulatory expertise, to implement cryptocurrency services, including custody solutions and cryptocurrency trading platforms, in order to attract new customers and generate additional revenue.

It is important for banks to work with regulators to establish coherent and effective legal frameworks for cryptocurrencies, as well as compliance with established legal norms. This partnership can help reduce risks associated with cryptocurrencies, such as money laundering and fraudulent activities, while simultaneously encouraging innovation.

Banking institutions should make efforts to educate customers about the benefits and risks associated with cryptocurrencies and blockchain technology. In this way, banks can help their customers make informed decisions and reduce the likelihood of becoming victims of fraudulent schemes.

Banks are encouraged to actively engage in discussions and pilot programs related to Central Bank Digital Currencies (CBDCs), as CBDCs can provide the benefits of digital currencies while maintaining financial stability. Collaboration between banking institutions and central banks on the development and implementation of CBDCs can ensure their integration into the current financial landscape.

Conclusions

The global cryptocurrency market is rapidly expanding both in terms of the number of coins and market capitalization. Currently, cryptocurrencies have found their place in the financial market, becoming interesting financial instruments for certain categories of actors. Given that cryptocurrencies have been recognized under regulation in a large number of countries, it has become possible to accept them for carrying out specific banking activities. It is also recognized that there are certain risks to banks accepting cryptocurrencies, such as high levels of volatility, the danger of fraud, etc. The increase in the scale of bank activity in the cryptocurrency market tends to make essential changes in its functioning. To the extent that the security issues of cryptocurrency operations are resolved, banks will be able to expand the range of services offered to customers, increasing the volume of commissions collected.

Future Directions

At the moment, three directions for further research are visible.

The first is related to observations on the evolution of the global cryptocurrency market and the existing opportunities for banks to improve their related banking activity.

The second direction could be to examine the possibilities of integrating banking services with cryptocurrencies in the metaverse. The metaverse is a 3-D-enabled collective digital space that merges physical and digital reality, utilizes virtual reality, augmented reality, and other advanced technologies, designed to allow users to interact as customizable avatars. (McKinsey, 2022), (Ortiz, 2024)

A third long-term direction of investigation is the ongoing research into the transformation of banking as CBDCs are implemented.

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