249. CENTRAL BANK DIGITAL CURRENCIES AND CRYPTOCURRENCIES: TWO VISIONS FOR THE FUTURE OF FINANCE

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The paper examines two models of digital money: central bank digital currencies (CBDCs) and decentralized cryptocurrencies. It is concluded that the future development of the financial system will be determined by the coexistence and competition of these two vectors.

The transformation of the monetary system under the influence of digital technologies has become one of the key trends of the last decade. The emergence of Bitcoin in 2009 marked the beginning of the cryptocurrency market, whose capitalization exceeded $3 trillion by early 2025. Concurrently, central banks in leading countries have accelerated the development of their own digital currencies (CBDCs). China has been testing the digital yuan since 2020, Sweden is working on the e-krona, and the Bank of Russia has introduced the concept of the digital ruble. This naturally raises the question: which path will the future development of the financial system take?

The aim of this paper is to conduct a comparative analysis of these two models of digital money and assess their prospects. The relevance of this topic stems from the impact these changes have on everyday financial practices and the structure of the banking system.

Central bank digital currencies represent a third form of national currency, alongside cash and non-cash money. The key difference from existing non-cash funds is that a CBDC constitutes a direct liability of the central bank, rather than a commercial one. This characteristic reduces the credit and liquidity risks for holders of such funds [1].

Cryptocurrencies function differently: they lack a single issuer, operate with algorithmic issuance, and feature decentralized validation. Bitcoin established the core principles: a limited supply (21 million coins), pseudonymity, and the irreversibility of transactions. Cryptocurrencies have already formed a significant user base and demonstrate transaction volumes comparable to traditional payment systems. CBDCs, in turn, are only beginning the phase of mass adoption [1, 2].

Stablecoins represent an attempt to overcome the volatility problem by pegging to fiat currencies or real assets. Ethereum has expanded the functionality of cryptocurrencies through smart contracts, enabling the creation of decentralized financial applications. The systematization of the main characteristics of the two models is presented in Table 2.

Table 2 – Comparative characteristics of CBDCs and cryptocurrencies

Characteristic	CBDC	Cryptocurrencies
Issuer	Central bank	None
Control	Centralized	Decentralized
Volatility	None	High
Anonymity	None	Pseudonymity
Programmability	Limited	Full

Comparing the two approaches reveals fundamental contradictions. The first concerns sovereignty: cryptocurrencies erode state control over money by creating a parallel financial system. The second pertains to confidentiality: CBDCs ensure transparency for regulators but raise privacy concerns, while cryptocurrencies guarantee pseudonymity — creating risks of illegal use but protecting legitimate transactions. The third contradiction lies between stability and innovativeness: CBDCs offer predictable purchasing power but limited financial experimentation, whereas volatile cryptocurrencies foster new instruments and business models like DeFi and NFTs.

Future development will likely follow a path of coexistence: CBDCs will be used for domestic settlements, while cryptocurrencies will serve for cross-border transfers, savings in conditions of distrust toward national currencies, and as a platform for financial innovation [3]. The emergence of hybrid solutions combining state guarantees with the technological advantages of distributed ledgers is also possible.

References:

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