

**CENTRAL BANK DIGITAL CURRENCIES (CBDCs)**

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**Abstract**

This article covers the digital currency produced by the Central Bank - CBDC. That is, the main difference of the digital currency of the central bank from other digital currencies, its types and practical use have been theoretically studied. The practical situation and statistical data related to the implementation and development of this digital currency, as well as the countries that study and want to introduce this currency, have been researched. Also, along with the positive results of the CBDC, the risks affecting the country's economy as a result of its introduction were studied, systematized, and relevant conclusions and proposals were given.

**Keywords:** CBDC, digital currency, cryptocurrency, transactions, payment, money laundering, blockchain technology, retail, wholesale, interest rates, GDP, quantitative easing, financial stability, risk, operation risk.

**Introduction**

The revolutionary changes that have taken place in the world of financial services in recent years have completely changed generally accepted ideas. The impact of digital transformation on financial services is not limited to changing the service delivery platform. The growing interest in cryptocurrencies has created the risk of central banks losing control over money supply and payment systems. As a result, a number of countries have announced initiatives to create CBDCs, unlike cryptocurrencies, which are unregulated and decentralized by their Central Banks.

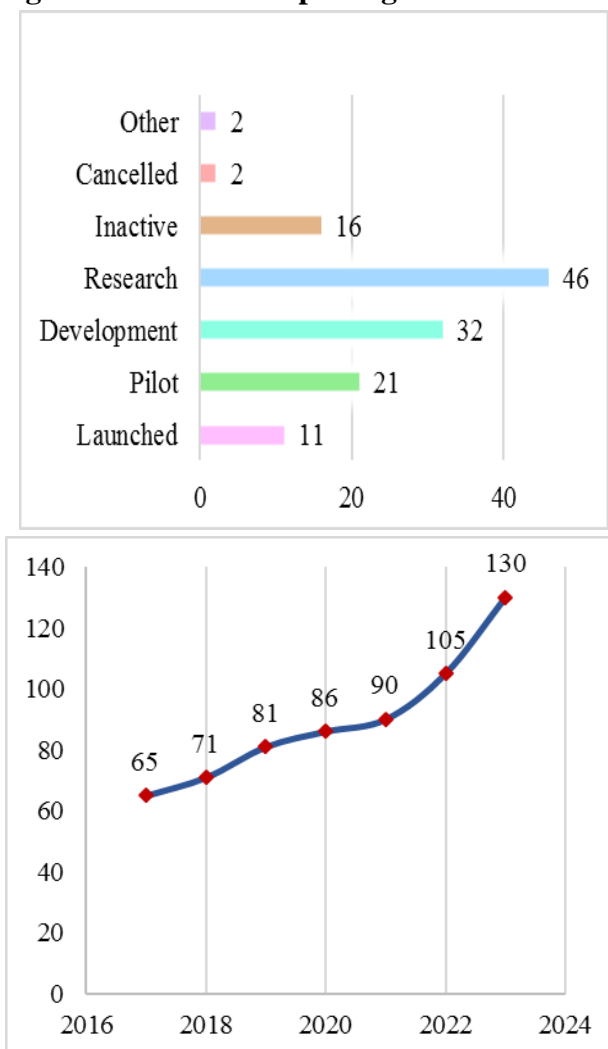
**Central Bank Digital Currencies (CBDCs)** are digital versions of fiat currencies issued and backed by a country's central bank. These currencies are meant to be used for transactions and payments as legitimate tender. The main differences between CBDC and cryptocurrencies are:

- centralized;
- used only for payments and other monetary transactions (*cryptocurrencies can be used for speculative purposes and for payments*);  
legal tender and widely accepted;
- stable value;
- can be tracked and monitored to a certain extent, which ensures compliance;
- operates within the framework of existing financial regulations and anti-money laundering measures.

With the advent of blockchain technology, the viability of digital currencies and wallets has been tested over the years, and many countries are now exploring the implementation of digital currencies at the state level (*Figure 1*).

According to the Bank for International Settlements (BIS), in 2017–2018, the public statements of central banks on digital currencies were **only negative**, but at the beginning of 2020, more than **80 percent** of central banks are CBCDs engaged in **research and development** in the field.

**Figure 1. Countries exploring CBDC over time**



Source: BIS data.

Specifically, based on the Atlantic Council's “Central Bank Digital Currency Monitor” (June 2023), it is noted that **130 countries**, representing **98% of global GDP**, are exploring CBDC. **11 countries** have **fully launched** the digital currency, namely the 8 member states of the Eastern Caribbean, the Bahamas, Jamaica and Nigeria.

**Table 2. Amount of CBDC in circulation**

As of 12.2022	Nigeria-eNaira	Bahamian Sand Dollar	China-e-CNY
CBDC in circulation	3 billion eNaira	303,785 Sand dollars	13.61 billion e-CNY
Percentage of total currency in circulation	0.01 percent	0.17 percent	0.13 percent

Source: Bruegel based on Central Bank of Nigeria, Central Bank of Bahamas and People's Bank of China.

In other words, according to the Bank for International Settlements Digital Payments Industry Statistics (2022), **9 out of 10 central banks** are **actively exploring** central bank digital currencies (CBDCs). About **62 percent** of central banks are already conducting CBDC **experiments and proofs of concept**. About **26 percent** of central banks are in **advanced stages of developing or launching experiences** in CBDCs.

While many central banks are investing heavily in the digital economy, the U.S. Federal Reserve is taking the opposite stance. As a result, there is a risk that the European Union will fall behind India and China, and the US dollar will gradually lose its dominant role in the world economy<sup>1</sup>.

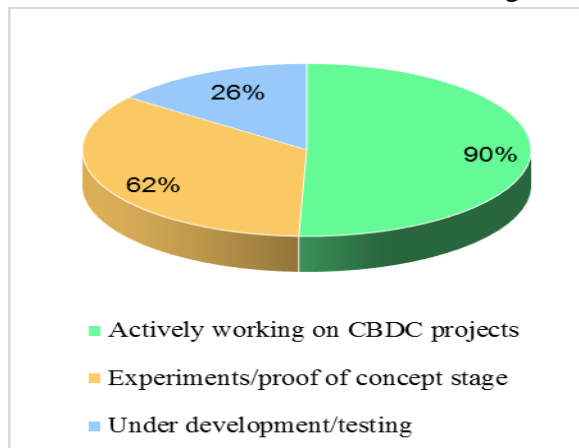


Figure 2. Central Banks Exploring CBDC (percentage)

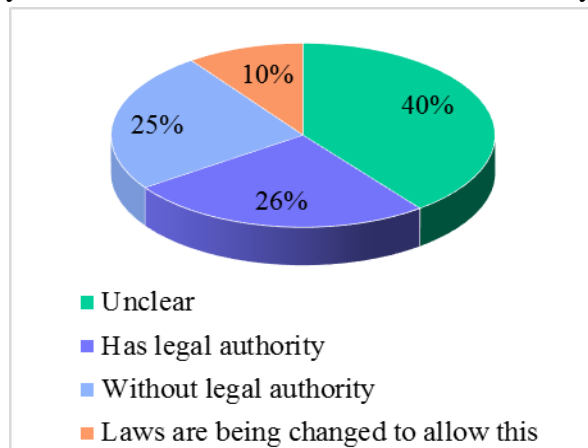


Figure 3. Share of central banks with the right to issue (percentage)

Source: Bank for International Settlements Digital Payments Industry Statistics (2022)

There are usually 2 types of CBDC: retail, wholesale. They, in turn, are divided into separate types.

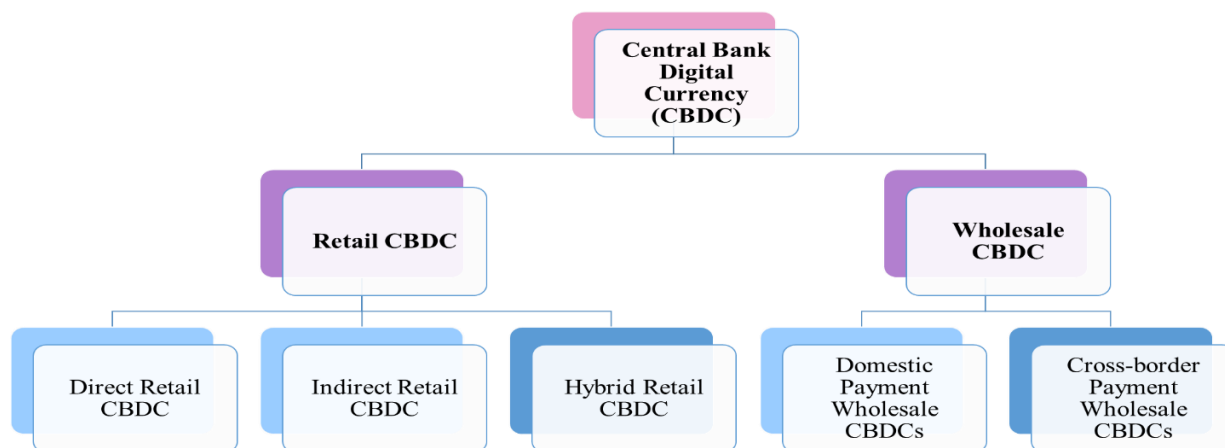


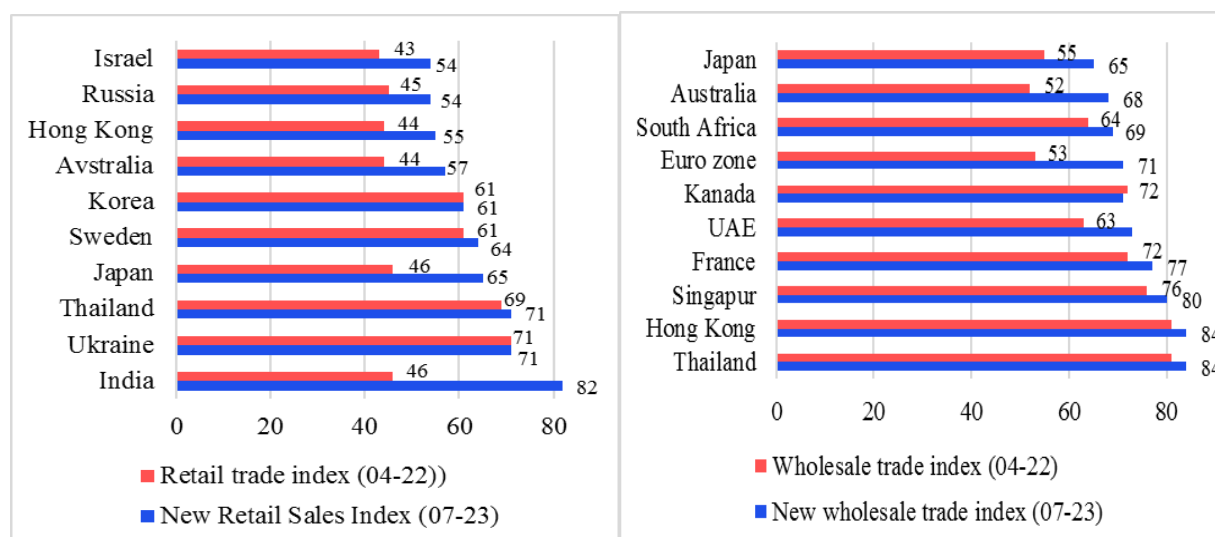
Figure 4. Types of Central Bank digital currency.

<sup>1</sup> Atlantika Kengashining ma`lumotlari

**Retail CBDC** is a form of central bank digital currency used by the general public. Retail CBDCs are designed to act as a digital currency equivalent, allowing users to make everyday payments and transactions. Retail CBDCs can be accessed through digital wallets, smartphone apps, or other payment systems.

On the other hand, **wholesale CBDC** is used between banks and other licensed financial institutions for interbank payments and securities transactions.

They can be used to support high-volume transactions such as interbank transfers and securities settlements.



**Figure 5. Trade index by types of CBDC in 2022-2023**

Source: BIS data.

According to BIS data, Thailand is the country with the most sales in the retail and wholesale CBDC trade indices. From these trade trends, it can be seen that the use of CBDC in the sphere of economic processes brings certain conveniences.

Based on this, the following can be seen as the advantages of CBDC:

1. Financial inclusion: One of the key benefits of CBDC is its potential to enhance financial inclusion. By providing an open digital currency to everyone, including the unbanked, it will reduce the income gap.

2. efficiency and cost reduction: CBDC has the potential to simplify financial transactions and make them more efficient. This reduces reliance on intermediaries and associated transaction costs.

3. Implementation of monetary policy: Can help central banks adjust monetary policy and respond more effectively to economic changes.

- *interest rates: Central banks can exercise more precise control over interest rates by offering interest-bearing CBDC accounts;*

- *transaction data: CBDCs provide central banks with real-time transaction data, enabling better analysis of economic activity and financial stability.*

- *quantitative easing: Central banks can more effectively use non-traditional monetary policy tools such as "helicopter money" through CBDC.*

- *financial stability: CBDC can improve financial stability by providing a safer alternative to privately issued digital currencies.*

4. Tackling illegal activities: By providing a transparent digital pathway, CBDC can help authorities enforce regulations and mitigate financial crimes.

Digital identity-based CBDCs can improve cross-border payments and limit the risk of currency swaps. Multi-CBDC agreements can overcome barriers to sharing digital identities across borders, but require international cooperation.

#### Disadvantages of CBDC Issuance

**Table 3. The risk of digital currency transactions in MB for a wide range of users**

For consumers	For finance / banking system	For the state / regulator
<b>Cyber risk is the loss of money due to theft and unauthorized intervention by third parties</b>	Risk of loss of liquidity of credit institutions	Reputation and strategic risks of the central bank
<b>Operational risks</b>	Loss of commission income for credit institutions	Potential decrease in the efficiency of monetary policy of the Central Bank
<b>Other risks</b>	Increasing interest costs of credit organizations	Potential use of money for money laundering (for hidden forms of payments)

The introduction of CBDC may affect the transmission of monetary policy. For example, a CBDC could change the demand for and composition of the monetary base in unpredictable ways, as well as change the sensitivity of the demand for money to changes in interest rates. Monetary policy can be sustained when central banks ensure stable funding through the channel of bank credit, which affects bank creditworthiness and cost of funding, and by recycling deposits into the banking system.

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