

## ORIGINAL PAPER

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# The Digital Ruble in Russia and Worldwide

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## ABSTRACT

In the era of the fourth industrial revolution and changes in the international financial system, there has been a growing interest in non-fiat currencies. In order to strengthen sovereignty and effectively manage monetary policy, many countries are actively exploring the use of digital currencies. At present, 134 countries, representing 98% of the global GDP, are developing central bank digital currencies (CBDCs). However, digitalization faces new challenges. Economic sanctions pose obstacles for businesses, particularly for Russia. To overcome these challenges, it is essential to create tools that can help circumvent restrictions. A possible solution could be the development of a stablecoin backed by the Russian ruble. **The purpose** of this study is to examine international progress in digitalizing the economy and using digital technologies to facilitate cross-border payments. Additionally, it aims to develop recommendations for applying this experience to Russian realities. The study also aims to explore solutions for restoring ties with international markets amidst sanctions pressure. **The research methods** include comparative analysis, statistics, mathematics, generalization, concretization, systematization, and deduction. **The research results** include the concept of the CBDC and its main functions and benefits. This is supported by examples from other countries' practices based on data from the Atlantic Council. Additionally, the current status of Russia's digital ruble development, its integration with international financial systems, and potential obstacles are investigated. Furthermore, the phenomenon of stablecoins, their operations, and their impact on international commerce and financial transactions are analyzed. Successful cases of stablecoin use in various countries and their potential integration with the Russian economy are also discussed. It has been concluded that the introduction of the digital ruble represents a significant step for the Russian financial system. This innovation makes services more accessible, reduces transfer fees, enhances control and transparency, and fosters technological advancement. To ensure the successful implementation of the digital ruble, it will be necessary to develop appropriate infrastructure, strengthen cybersecurity measures, and improve regulatory frameworks.

**Keywords:** digital ruble; retail CBDC; cryptocurrency; bitcoin; stablecoin; fiat currencies; cross-border payments; sanctions

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## INTRODUCTION

The digital transformation has led to a marked decrease in physical cash payments, a trend further exacerbated by the COVID-19 pandemic. For example, in the eurozone, from 2016 to 2022, the share of cash payments at points of sale decreased from 79% to 59%. This was mainly due to the growing popularity of card payments.<sup>1</sup> In the United States, the use of cash decreased from 40% in 2012 to 19% in 2020, and in Sweden from 33% to 10% over the same period.<sup>2</sup>

Cryptocurrencies are becoming more common in everyday life. Due to the possibility of conducting transactions without a central intermediary and government intervention, they become more attractive to the financial sector. Since its introduction in 2009, the total volume of bitcoin transactions has reached approximately \$ 36.6 trillion in 2023,<sup>3</sup> which is significantly higher than the volume of Visa transactions, which amounted to about \$ 15 trillion in the same year.<sup>4</sup> This highlights the rapidly growing role of cryptocurrencies in the global payment system.

Fabio Panetta, a member of the Executive Board of the European Central Bank, noted that digital currencies that are issued and controlled by private individuals can threaten existing payment systems.<sup>5</sup>

There is also a threat of the formation of payment oligopolies, when several private

companies gain a dominant position in the payment market. An example of this is Facebook's<sup>6</sup> (now Meta) attempt to launch its Libra (later Diem) stablecoin, backed by a basket of bank deposits and short-term government securities for each Libra unit created. Facebook's huge user base of more than 2.5 billion people immediately raised concerns among the U.S. House of Representatives<sup>7</sup> and the European Parliament<sup>8</sup> that network effects would allow a commercial company to control the ways in which its participants conduct economic transactions, which could give a commercial company the opportunity to influence government monetary policy.

Concerns about the declining role of central banks and proposals for the issue of a national digital currency were expressed by the United States<sup>9</sup> and Denmark.<sup>10</sup>

In the current conditions, the introduction of the Central Securities Market looks like a necessary measure. This is a response to the growing digitalization and evolution of the cryptocurrency ecosystem. It is also a reaction to the increasing power of private actors, who are becoming the only intermediaries in international transfers. In addition, the Central Securities Exchange is a way to regain control over payments and confirm its monetary and technological independence.

<sup>1</sup> Study on the payment attitudes of consumers in the euro area (SPACE). 2022. European Central Bank. URL: [https://www.ecb.europa.eu/stats/ecb\\_surveys/space/html/ecb.spacereport202212~783ffdf46e.en.html](https://www.ecb.europa.eu/stats/ecb_surveys/space/html/ecb.spacereport202212~783ffdf46e.en.html) (accessed on 05.10.2024).

<sup>2</sup> Money and Payments: The U.S. Dollar in the Age of Digital Transformation. The Board of Governors of the Federal Reserve System. Washington, USA. URL: <https://www.federalreserve.gov/publications/january-2022-cbdc.htm> (accessed on 05.10.2024).

<sup>3</sup> Annual Crypto Industry Report. CoinGecko. 2023. URL: <https://www.coingecko.com/research/publications/2023-annual-crypto-report> (accessed on 05.10.2024).

<sup>4</sup> Annual Report 2023. URL: [https://s29.q4cdn.com/385744025/files/doc\\_downloads/2023/Visa-Inc-Fiscal-2023-Annual-Report.pdf](https://s29.q4cdn.com/385744025/files/doc_downloads/2023/Visa-Inc-Fiscal-2023-Annual-Report.pdf) (accessed on 05.10.2024).

<sup>5</sup> The present and future of money in the digital age. European Central Bank. URL: <https://www.ecb.europa.eu/press/key/date/2021/html/ecb.sp211210~09b6887f8b.en.html> (accessed on 05.10.2024).

<sup>6</sup> The Meta organization and Facebook, to which we refer in this work, are recognized as extremist and banned in the territory of the Russian Federation.

<sup>7</sup> Committee Democrats Call on Facebook to Halt Cryptocurrency Plans. US House of Representatives, 2019. URL: <https://democrats-financialservices.house.gov/news/documentsingle.aspx?DocumentID=404009> (accessed on 05.10.2024).

<sup>8</sup> What if Libra disrupted the financial system? European Parliamentary Research Service. September 2019. URL: [https://www.europarl.europa.eu/RegData/etudes/ATAG/2019/634443/EPRS\\_ATA\(2019\)634443\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2019/634443/EPRS_ATA(2019)634443_EN.pdf) (accessed on 05.10.2024).

<sup>9</sup> Policy Objectives for a U.S. Central Bank Digital Currency System. URL: <https://www.whitehouse.gov/wp-content/uploads/2022/09/09-2022-Policy-Objectives-US-CBDCSystem.pdf> (accessed on 02.10.2024).

<sup>10</sup> New types of digital money. Danmarks Nationalbank 23 June 2022. No. 8. URL: [https://www.nationalbanken.dk/en/publications/Documents/2022/06/ANALYSIS\\_no%208-New%20types%20of%20digital%20money.pdf](https://www.nationalbanken.dk/en/publications/Documents/2022/06/ANALYSIS_no%208-New%20types%20of%20digital%20money.pdf) (accessed on 02.10.2024).

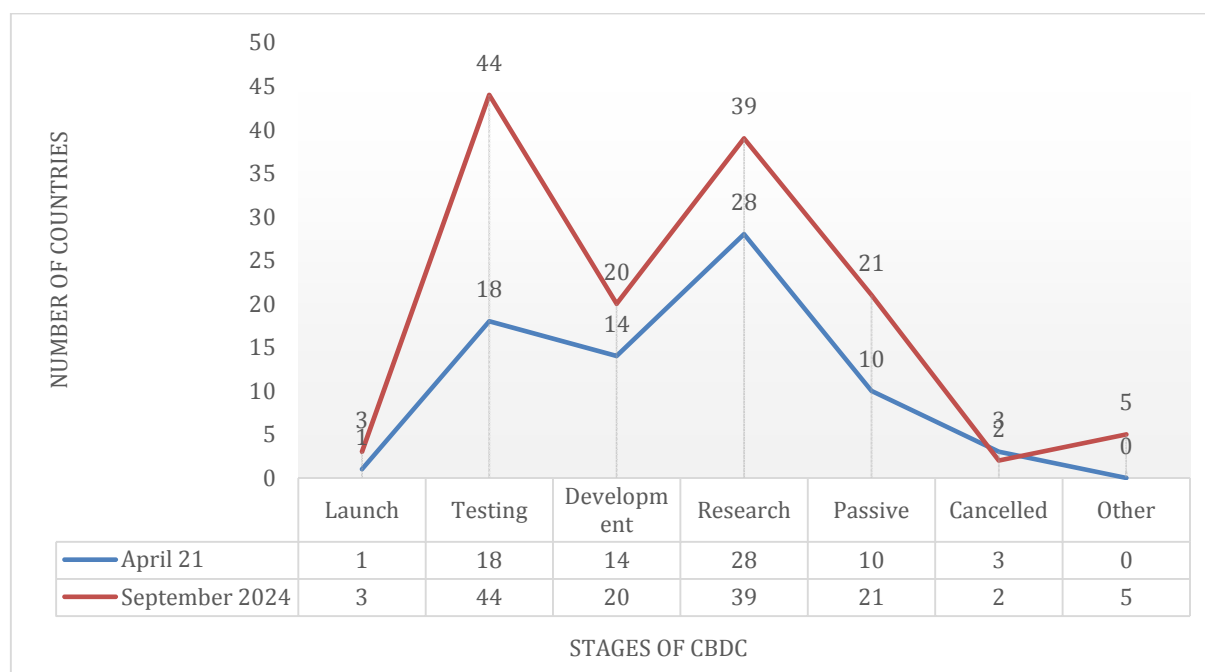


Fig. 1. Changes in Countries' Interest in Implementing the CBDC from April 2021 to September 2024

Source: Compiled by the authors based on Data from the Atlantic Council.

The article analyzes the progress in the field of the introduction of CBDCs, and also examines the Russian experience of their application. Particular attention is paid to identifying the shortcomings of central securities in the context of cross-border transactions. Key aspects such as the impact on financial stability, legal and technical barriers, as well as the potential risks and benefits associated with the use of securities in international trade are being investigated.

### INTERNATIONAL PROGRESS ON THE IMPLEMENTATION OF THE CBDC

The Atlantic Council<sup>11</sup> provides an up-to-date and dynamic analysis of the international process of developing and implementing CBDC, assessing the progress of each country and the specifics of their efforts.<sup>12</sup> CBDC

projects are classified into active and passive stages. The active stage includes: research, development, piloting, and launched.

According to the Atlantic Council data<sup>13</sup> shown in Fig. 1, international progress in the implementation of the CBDC has increased significantly over three years: from April 2021 to September 2024, during this time, the number of countries showing interest in the CBDC has increased from 74 to 134, accounting for 98% of global GDP.

In comparison with April 2021, the number of countries with fully launched CDDC increased from 1 to 3, the number of countries at the pilot stage increased from 18 to 44, at the development stage from 14 to 20, and at the research stage from 28 to 39. A visual representation of the progress is shown in Fig. 1.

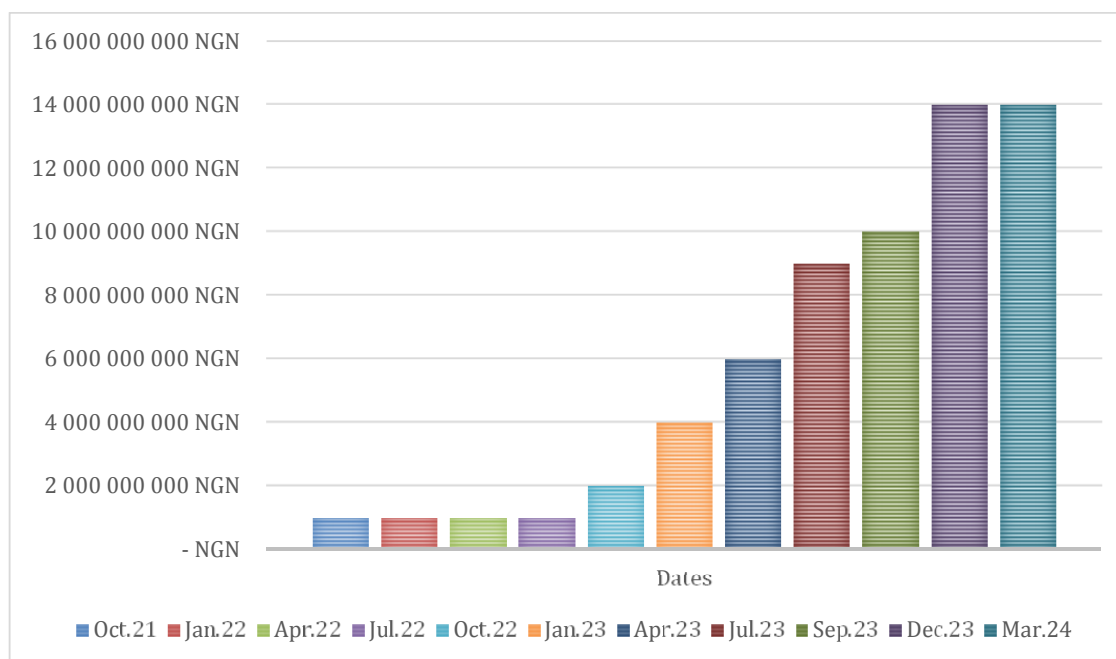
Developing countries are more willing to pilot and/or use CBDC driven by the need to increase financial accessibility and improve payment efficiency [1]. Nigeria (eNaira),<sup>14</sup>

<sup>11</sup> The Atlantic Council is an American think tank founded in 1961 under the North Atlantic Treaty Organization. It is a forum for political, business and intellectual international leaders. URL: [https://ru.wikipedia.org/wiki/%D0%90%D1%82%D0%BB%D0%B0%D0%BD%D1%82%D0%B8%D1%87%D0%B5%D1%81%D0%BA%D0%B8%D0%B9\\_%D1%81%D0%BE%D0%B2%D0%B5%D1%82](https://ru.wikipedia.org/wiki/%D0%90%D1%82%D0%BB%D0%B0%D0%BD%D1%82%D0%B8%D1%87%D0%B5%D1%81%D0%BA%D0%B8%D0%B9_%D1%81%D0%BE%D0%B2%D0%B5%D1%82) (accessed on 05.10.2024).

<sup>12</sup> Central Bank Digital Currency Tracker. Atlantic Council. URL: <https://www.atlanticcouncil.org/cbdctracker/> (accessed on 05.10.2024).

<sup>13</sup> Central Bank Digital Currency Tracker. Atlantic Council. URL: <https://www.atlanticcouncil.org/cbdctracker/> (accessed on 05.10.2024).

<sup>14</sup> The website of the CBDC in Nigeria is eNaira. URL: <https://enaira.gov.ng/> (accessed on 05.10.2024).



**Fig. 2. The Total Amount of eNaira in Circulation from 2021 to 2024 (in NGN Billion)**

Source: Compiled by the authors based on Data from the Atlantic Council.

Jamaica (Jam-Dex)<sup>15</sup> and the Bahamas (SandDollar)<sup>16</sup> were the first to fully implement the CSB project. Thus, the launch of eNaira in Nigeria was largely motivated by political forces that wanted to promote financial inclusion, ensure the payment of benefits to citizens, facilitate foreign money transfers, etc. [2].

According to the Atlantic Council data<sup>17</sup> shown in Fig. 2 and Fig. 3, in just three years, the circulation of eNaira and SandDollar has grown by more than 100%. This means that the launch of the CBDC in Nigeria and the Bahamas fully meets the goals set.

For the central banks of developed countries, the introduction of digital currencies is becoming important due to the digitalization of the economy, the growing prosperity and popularity of electronic payment systems, as well as a decrease in the use of cash [3].

Experts of the International Monetary Fund note that CBDCs from different countries have several common characteristics,<sup>18</sup> namely:

- digital nature;
- implementation of the issue by the national central bank;
- recognition as legal tender in the territory of the relevant State.

Thus, CBDCs are a specific type of digital money issued and regulated by national central banks in order to increase the efficiency of payment systems and ensure greater security and reliability in financial transactions.

In the context of international settlements, CBDCs offer a number of significant advantages:

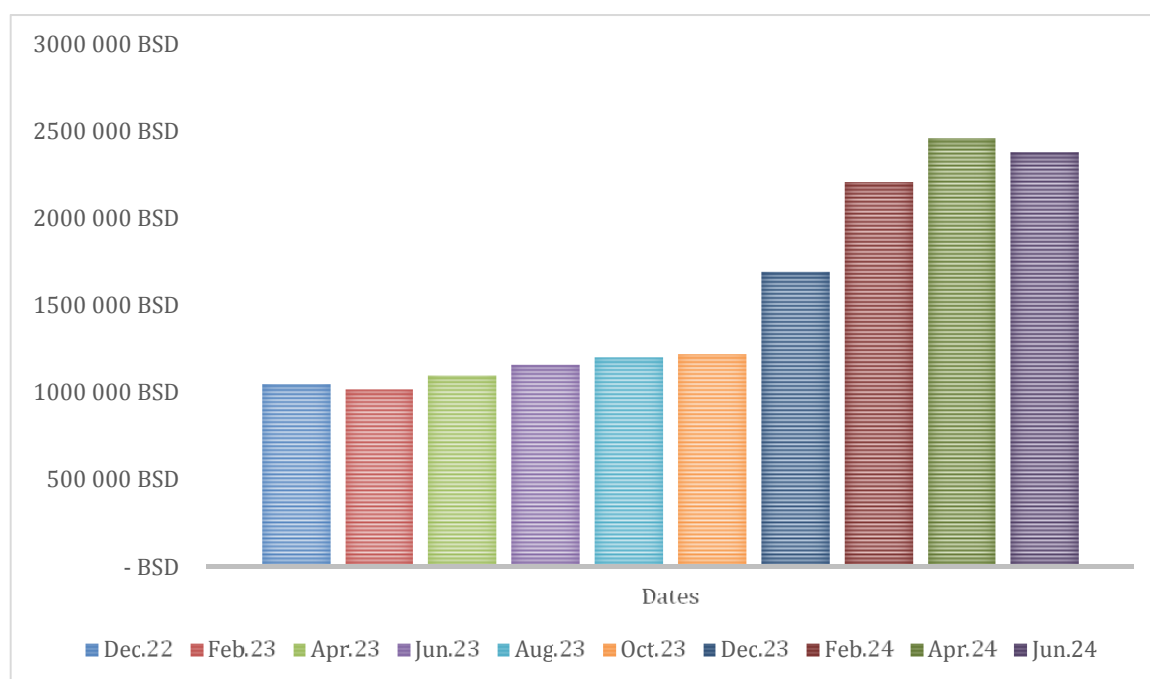
1. Reducing costs and time for cross-border transfers. Traditional interbank transfer systems are often characterized by long processing times and high fees, especially for cross-border transactions. CBDCs can speed up and reduce the cost of payments

<sup>15</sup> The CBDC website in Jamaica is Jam-Dex. URL: <https://boj.org.jm/core-functions/currency/cbdc/> (accessed on 05.10.2024).

<sup>16</sup> The CBDC website in the Bahamas is Sand Dollar. URL: <https://www.sanddollar.bs> (accessed on 05.10.2024).

<sup>17</sup> The Atlantic Council website. URL: <https://www.atlanticcouncil.org/cbdctracker/> (accessed on 05.10.2024).

<sup>18</sup> Central bank digital currencies: foundational principles and core features. Bank for International Settlements, 2020. URL: [https://www.bis.org/publ/othp33\\_summary.pdf](https://www.bis.org/publ/othp33_summary.pdf) (accessed on 05.10.2024).



**Fig. 3. The Total Amount of SandDollar in Circulation from 2022 to 2024 (in BDS Million)**

Source: Data from the Atlantic Council.

by simplifying and standardizing settlement processes.

2. Increase transparency and security. Using distributed ledger technology (blockchain) to process transactions using CBDC can significantly increase the transparency and security of payments, while reducing the risk of fraud.

3. Financial inclusion. CBDCs can facilitate access to financial services for citizens who do not have access to traditional banking infrastructure, including residents of remote regions.

4. Strengthening currency control and monetary policy. The introduction of CBDCs provides central banks with additional tools to better manage the currency supply and conduct monetary policy.

With rapid digitalization and a changing landscape of payment systems, the introduction of CBDCs is becoming an important step for countries seeking to maintain control over monetary policy and ensure financial inclusion. The decline in the use of cash and the growing popularity of cryptocurrencies emphasize the need to adapt

to new conditions. CBDCs issued by national central banks have unique characteristics such as their digital nature and recognition as legal tender. CBDCs can serve as a response to the challenges associated with the dominance of private operators and the threat of the formation of payment oligopolies. Successful examples such as eNaira in Nigeria and SandDollar in the Bahamas show that even low-income countries can benefit from digitalization of payments.

### CBDC IN RUSSIA: PROS AND CONS

Russia is actively engaged in the digitalization of the economy, including developing and implementing projects related to digital finance, including the concept of the digital ruble, the central bank's digital currency, issued by the Central Bank of the Russian Federation.

The project to introduce the national digital currency of Russia began with the publication of a report by the Central Bank of the Russian Federation entitled "Digital Ruble — for public discussion", which was presented in October 2020. This report highlights that



Table 1

**Comparative Analysis of the Advantages and Disadvantages of Introducing the Digital Ruble**

No.	Advantages	Disadvantages
1	Free service: account opening and transactions in digital rubles have no fees	No joint accounts: Joint accounts in digital rubles, as well as accounts in precious metal digital rubles and the creation of a group of digital ruble accounts, are not permitted, making it less attractive compared to bank cards and savings accounts. The “one user, one wallet” principle will be applied
2	Offline transfers: the ability to conduct transactions without an Internet connection, which is especially important for remote areas	Non-anonymous transactions require registration and identification, which may be a deterrent for users in regions with well-developed payment infrastructure
3	Reliability: The digital ruble is an obligation of the Central Bank of the Russian Federation, which makes it safer than funds in commercial banks	Technical requirements: The need to install special software in order to access the platform could become an additional obstacle
4	24/7 access, 7 days a week	
5	Personal data security: since the currency exists in virtual form and is managed by a secure program developed by the Central Bank of the Russian Federation, all data about the account holder of the digital ruble (digital wallet) will be securely protected	

Source: Compiled by the authors based on [6].

unlike “cryptocurrencies” and “stablecoins”, the central bank’s digital currency is a full-fledged form of national currency. Its reliable functioning in the interests of citizens and businesses is ensured by the state through the central bank, which is trusted with the existing national currency.<sup>19</sup>

Thus, according to the concept of the Central Bank of the Russian Federation, the digital ruble is not a cryptocurrency or a stablecoin. The digital ruble is centrally issued by the Central Bank of the Russian Federation, which acts as a guarantor of the security of payments.

The digital ruble concept involves the issuance of a retail digital ruble under a two-

tier distribution model, which assumes that the Central Bank of the Russian Federation will issue digital currency and open digital wallets for accredited banks, distributing the currency in exchange for one hundred percent coverage. Commercial banks will be able to conduct interbank transactions and open wallets for their customers using a centralized blockchain. At the same time, they will be required to perform customer verification (ALM/KYC) [4]. Each level of the system will have its own technological and supervisory features [4].

The digital ruble will be issued in the form of a retail CBDC, which implies accessibility to a wide range of economic entities, including legal entities and individuals, while wholesale CBDCs are intended exclusively for credit institutions [3].

The release of the digital ruble in Russia is an important step that is changing the

<sup>19</sup> The digital ruble. A report for public consultation. October 2020. The Central Bank of the Russian Federation. URL: [https://www.cbr.ru/StaticHtml/File/112957/Consultation\\_Paper\\_201013.pdf](https://www.cbr.ru/StaticHtml/File/112957/Consultation_Paper_201013.pdf) (accessed on 02.10.2024).

country's financial landscape. This process raises many questions: how to interact with users, how to take into account the features of existing payment systems, and how the new currency will affect traditional banks and the financial regulator.

On the one hand, an increase in the customer base will require an organizational restructuring of the Central Bank of the Russian Federation, and possible failures in the system may negatively affect the reputation of both the regulator itself and the state as a whole [5], and on the other hand, the turnover of the digital ruble may help improve control over the incomes and expenses of Russian citizens, as well as reduce the risk counterfeiting of funds, which will potentially lead to a decrease in criminal activity in the economic sphere [4].

The impact on end users is manifested in the presence of both advantages and disadvantages, which can be seen in *Table 1*.

The launch of the digital ruble carries certain risks, including an outflow of liquidity from the banking sector. This innovation may lead to a reduction in deposits in commercial banks, since economic agents can transfer part of their funds intended for settlements into digital currency [6, 7]. A decrease in the liabilities of commercial banks may negatively affect lending volumes and lead to higher loan prices, which, in turn, may reduce investment and consumption of durable goods. There is a risk of weakening the role of commercial banks as financial intermediaries between savers and borrowers [7].

The integration of the digital ruble into the existing digital payment infrastructure presents both opportunities and challenges. Effective digital payment systems already exist in India and China, which raises the question of whether the digital ruble will complement or compete with these established mechanisms. Digital Rupee Design (CBDC-R) The Reserve Bank of India (RBI) and the digital yuan (e-CNY) of the People's Bank of China illustrate a thoughtful approach to this integration.

To launch the Chinese e-CNY, a separate infrastructure was created, including a social credit system for legal entities and individuals, centralized mining, and a unified mobile application with a programmable interface (super API) [8].

The Reserve Bank of India has created a centralized system for processing and calculating transactions with CBDC-R. This system is designed to function similarly to a physical currency while taking advantage of digital transactions. Unlike other digital payment methods, CBDC-R uses central bank money, which can reduce the risks of settlements and counterparties while ensuring the finality of transactions [9].

In the case of the digital ruble, the technological basis on which the entire system will be built remains unclear at the moment.

One of the disadvantages of the digital ruble concept is the ambiguity of its legal nature.

There is a point of view in the literature that the digital ruble should not be considered as a separate type of national currency. The authors emphasize that the introduction of the digital ruble creates uncertainty about its "objectability". If we consider the digital ruble as a form of money, the question arises about its role in economic turnover [10]. It is also noted that the classification of forms of money into cash and non-cash is exhaustive [11]. Russian legislation also supports this position by classifying the digital ruble as non-cash, according to article 128 of the Civil Code of the Russian Federation.

Nevertheless, from an economic point of view, the digital ruble as a third form of currency is justified, since it is a unique tool with technological advantages that enhance payment efficiency and financial inclusion [12].

The introduction of the digital ruble represents an important step in the evolution of Russia's financial system. From an economic point of view, it offers new opportunities to improve payment efficiency and financial inclusion. Legally, the digital ruble, being a kind of non-cash money, opens up new horizons for

regulation and control by the state. However, it should be borne in mind that the use of the digital ruble in international transactions does not eliminate the risks associated with sanctions and other restrictions. Thus, for the successful implementation of the digital ruble, it is important not only to develop the technological infrastructure, but also to take into account international realities, providing protection from potential threats. In general, currency digitalization can become a powerful tool for strengthening Russia's financial stability and competitiveness on the global stage.

### CROSS-BORDER PAYMENTS UNDER SANCTIONS

In the context of the economic sanctions that Russia is facing, there is a need to adapt foreign economic calculations. A significant obstacle to cross-border payments is concerns about possible sanctions for interacting with sanctioned countries, banks and companies. For example, in 2024, payments between Russia and Brazil practically stopped, as Brazilian banks stopped accepting bank transfers from Russia not only in rubles and US dollars, but also in Brazilian reals. Similarly, Chinese banks began to actively abandon settlements with Russia.<sup>20</sup>

In this situation, even CBDCs such as the digital ruble cannot be a panacea, since the restrictions imposed on banks and financial institutions do not depend on the form of the currency, whether it is cash or non-cash.

One of the potential solutions to the problem could be the use of cryptocurrencies, due to their extraterritorial nature. Cryptocurrencies are digital currencies with which transactions are verified and recorded by a decentralized system using cryptography.<sup>21</sup> Such currencies include bitcoin and other

altcoins, which offer many advantages: faster transactions, lower costs, easy access, and a high level of privacy [13]. However, bitcoin and other cryptocurrencies are highly volatile, which casts doubt on their reliability and stability [14]. For example, from 2022 to 2024, the price of Bitcoin dropped from \$ 62,000 to less than \$ 20,000, before rising again to \$ 73,000 in March 2024.<sup>22</sup>

As a more stable alternative, it is proposed to use stablecoins. These tokens are linked to liquid and stable underlying assets, such as national currencies or precious metals, which minimizes the risks of volatility [13]. The second defining characteristic of a payment stablecoin is its primary purpose for general payments [15].

Initially, stablecoins were used primarily as cash balances for crypto exchanges and traders. In 2019, for every dollar of a stablecoin, there was an average of about \$ 5 in daily cryptocurrency trading volume. This ratio was significantly higher compared to trading supported by retail broker account balances and fiat currency aggregates in traditional assets. However, the widespread adoption of stablecoins outside of trading has occurred rapidly over the past five years, marked by a more than ninety percent cumulative decline in the volume of trade supported for every dollar of stablecoin. This shift is also not related to fluctuations in activity on the crypto market [4].

Special attention should be paid to stablecoins backed by national currencies. The main advantages of such stablecoins include high exchange rate stability, ease of issue and stabilization mechanism, as well as low cyber risks [16].

The main advantages of stablecoins in payments [17]:

1. Speed and efficiency: stablecoins ensure the rapid movement of values between users, thanks to blockchain technology. Transactions

<sup>20</sup> Chinese banks refuse to accept payments from Russia. What will happen to the ruble. RBC News. May 2024. URL: <https://pro.rbc.ru/demo/6620e4829a7947f8411db8db> (accessed on 03.10.2024).

<sup>21</sup> Review of the Bank of Russia on cryptocurrencies, ICOs and approaches to their regulation. Moscow. December 2017. URL: [http://www.cbr.ru/content/document/file/36009/rev\\_ico.pdf](http://www.cbr.ru/content/document/file/36009/rev_ico.pdf) (accessed on 04.10.2024).

<sup>22</sup> Cochintu C. Bitcoin Forecast & Price Prediction: Retreat before Recovery in Q2? Capex. May 2024. URL: <https://capex.com/en/overview/bitcoin-price-prediction> (accessed on 01.10.2024).



can be processed in seconds, eliminating delays that often occur in traditional banking systems, especially for international transfers.

2. Cost reduction: fees for transactions with stablecoins are very low. For example, the analysis shows that fees can be as low as 1/100 of a cent, while traditional bank transfers can cost two dollars or more. This cost reduction can lead to significant savings for the business.

3. Accessibility: users are not required to have a traditional bank account to participate in transactions with stablecoins, they only need a digital wallet on the stablecoin network. This opens up opportunities for people and companies without access to banking services, improving financial inclusion.

4. The programmability of stablecoins makes it possible to automate payments and use smart contracts, which help companies optimize their operations. This feature can improve cash flow management by allowing payments to be made at the right moment based on invoices or other triggers.

5. Liquidity Management: For large organizations, managing liquidity between different branches can be challenging. Stablecoins can simplify this process by allowing immediate capital allocation and reducing the need for expensive interim financing.

Stablecoins are becoming an important tool in the field of payments, offering many advantages for both domestic and international transactions. Their ability to function independently of traditional payment systems allows for faster and cheaper transfers, which significantly reduces the friction associated with classical payment methods [15].

The potential of stablecoins to simplify international payments is particularly noteworthy. The current international payment infrastructure often leads to long delays and high costs, which can make global trade difficult. Using stablecoins, companies can make currency transfers faster and cheaper, which increases their competitiveness in the global market [15, 17].

At the global level, regulators are aware of the growing use of stablecoins for cross-border transactions that offer effective alternatives for transferring money. The concept of global stablecoins, defined by the Financial Stability Board (FSB), highlights their potential to operate in multiple jurisdictions [18].

Currently, the total capitalization of the stablecoin market is about \$ 150 billion, with Tether (USDT) and USD Coin (USDC) occupying dominant positions with shares of 75% and 22%, respectively.<sup>23</sup> According to the Lookonchain analytical service, in June 2024, the daily trading volume involving USDT on the Tron platform increased to \$ 53 billion, which significantly exceeded the usual daily average of transfers through the Visa bank payment system of \$ 42 billion. The unprecedented daily trading volume involving USDT marks a fundamental shift in financial dynamics.<sup>24</sup>

In October 2019, the G7 working group on stablecoins released a report on the impact of global stablecoins. In the document, experts acknowledged that stablecoins exhibit many properties of crypto assets and seek to improve price stabilization by tying them to a pool of assets. This, in turn, contributes to their better use as a means of payment and savings. In addition, stablecoins can contribute to the development of global payment systems that are faster, cheaper and more accessible than existing ones.

December 5, 2019 The Council of the EU and the European Commission, referring to the above-mentioned report of the G7 working group, published a joint statement on stablecoins, in which they recognized that technological innovations can bring great economic benefits to the financial sector

<sup>23</sup> Less Than 10% of Stablecoin Transaction Volume Coming from Real Users: Report. CoinDesk. May 2024. URL: <https://www.coindesk.com/policy/2024/05/06/less-than-10-of-stablecoin-transaction-volume-coming-from-real-users-report/> (accessed on 05.10.2024).

<sup>24</sup> USDT Surpasses Visa with Unprecedented \$ 53 Billion Daily Transaction Volume on Tron Network. Coinotag. Jun 2024. URL: <https://en.coinotag.com/usdt-surpasses-visa-with-unprecedented-53-billion-daily-transaction-volume-on-tron-network/> (accessed on 05.10.2024).

by promoting competition and financial integration, expanding consumer choice, increasing efficiency and providing cost savings for financial institutions and the economy as a whole.<sup>25</sup>

Using the example of Nigeria, we propose to consider the advantages of introducing a stablecoin backed by the national currency. As mentioned earlier, Nigeria has already launched its CBDC called eNaira.<sup>26</sup> While the country's central banks are actively developing eNaira, some private companies have begun to develop alternative cryptocurrencies that are less susceptible to volatility and whose value will be pegged to a liquid underlying asset, such as the national currency. This led to the idea of a stablecoin called cNGN, which is being developed by the Africa Stablecoin Consortium (ASC) coalition, which includes Nigerian financial institutions, fintech companies, and blockchain experts [19].

The decision to launch cNGN was driven by several key factors<sup>27</sup>: first, cNGN is designed to provide faster and more efficient payments both within and outside the country. Stablecoin can significantly simplify transactions by reducing processing time and costs, which is especially important for businesses and consumers; secondly, cNGN will facilitate smooth cross-border payments. In the context of a globalized economy, the need for reliable and fast international settlements is becoming increasingly urgent. A stablecoin tied to a stable underlying asset can become a reliable tool for currency exchange, providing greater predictability and security; in addition, the launch of cNGN will expand

access to financial services for people with bank accounts. This is especially important in Nigeria, where a significant portion of the population still does not have access to traditional banking services.

The key characteristics of cNGN are [19]:

1. Provision of reserves: The cNGN stablecoin will be provided with reserves of the Nigerian naira, which will be stored in reliable commercial banks.

2. Conversion rate: The cNGN exchange rate will be fixed at 1:1 to the Nigerian Naira, which will ensure stability and predictability for users.

3. Governance: The development and management of the stablecoin will be carried out jointly by Nigerian banks and fintech companies, which guarantees the transparency and reliability of the system.

4. Compatibility with blockchains: cNGN will be integrated with several public blockchains, which will ensure flexibility and accessibility for users.

*Table 2* shows in detail why eNaira as a CBDC and cNGN as a stablecoin should exist simultaneously, complementing each other in terms of functionality.

cNGN stablecoin has the potential not only to improve financial transactions in Nigeria, but also to create a new standard for financial innovation on the African continent. Its implementation can lead to significant changes in the ways of doing business and making payments both inside and outside the country. In addition, unlike eNaira, cNGN can be used in international settlements, bypassing sanctions and other restrictions.

Thus, based on the experience of Nigeria, in Russia we also propose to consider the concept of a stablecoin backed by a national currency in order to continue to feel part of the global economy, taking into account the fact that Russia's political views have shifted from a conservative approach in 2015 to a more liberal one in 2024.

In 2015, QIWI initiated the registration of the trademark "bitruble" and issued URLs in

<sup>25</sup> Joint statement by the Council and the Commission on "stablecoins" dated 05 December 2019. URL: <https://www.consilium.europa.eu/en/press/pressreleases/2019/12/05/joint-statement-by-the-council-and-the-commission-on-stablecoins/> (accessed on 05.10.2024).

<sup>26</sup> CBDC website in Nigeria — eNaira. URL: <https://enaira.gov.ng/> (accessed on 05.10.2024).

<sup>27</sup> Adoption and Hurdles of Stablecoins in Nigeria: An In-Depth Exploration. Medium. May 2024. URL: <https://medium.com/@razoredmanchi/adoption-and-hurdles-of-stablecoins-in-nigeria-an-in-depth-exploration-fe65693e3f2d> (accessed on 07.10.2024).

Table 2

## Comparative Analysis of eNaira and cNGN

No.	Criterion	cNGN	eNaira
1	Main goal	Simplification of payments and optimization of international transfers	Be a payment instrument and help the central bank achieve government policy goals such as G2P transfers, financial inclusion, and the provision of digital public goods
2	Digital form	A private cryptocurrency similar to USDT	The central bank's digital currency
3	Competition or coexistence	cNGN will co-exist with eNaira	eNaira will co-exist with cNGN
4	Reserve assets	Participating banks will keep cNGN as part of their reserves	Deposit banks will keep eNaira as part of their reserves
5	Product Promotion	Participating banks will actively promote cNGN	The Central Bank will promote wholesale eNaira
6	Scale of retail trade versus wholesale trade	cNGN will be used mainly for retail purposes	eNaira CBDC is used mainly for wholesale purposes
7	Type of blockchain	Public blockchains	Distributed ledger technology of the private blockchain, built on the corporate structure of hyperledger
8	Usefulness for public policy purposes	cNGN is not intended to be a tool for achieving public policy goals	eNaira can be used to achieve public policy objectives
9	State control	Limited or no government control	Full state control
10	The Naira Reserve Keeper with a link	cNGN is linked to Naira reserves held in commercial bank accounts	eNaira is linked to the Naira reserve held in the accounts of the central bank
11	Usefulness for monetary policy	cNGN is of little use for monetary policy. It is ineffective in managing monetary policy objectives	eNaira has significant applications for monetary policy
12	User supervision	Full user supervision is not possible when using cNGN	Full supervision of eNaira users is possible
13	Financial stability risk	The risk of financial stability can be transferred through the cancellation of the link	Financial stability risk is largely controlled through price and quantity constraints on assets
14	Impact on foreign exchange reserves	It has an impact, as international transactions will be conducted with reserves held at the central bank	It is not used in international trade, so transactions with it do not affect foreign exchange reserves

Source: Compiled by the authors based on [19].

the domain zones.com,.org,.li and.ru,<sup>28</sup> which was the first attempt to issue a ruble-backed stablecoin. However, due to the tough stance of the Central Bank of the Russian Federation, the plans were not implemented.

In 2022, Sergey Mendeleev, CEO of Indefibank, announced the development of a tokenized cryptoruble based on Ethereum. This was supposed to simplify Russians' access to international exchanges and allow settlements with foreign counterparties. The issue was planned through a decentralized smart contract with a 1-ruble exchange rate.<sup>29</sup>

In 2022, the Central Bank of the Russian Federation opposed stablecoins, emphasizing the risks and lack of stability guarantees. At the same time, the Ministry of Finance of the Russian Federation supported the idea of creating a stablecoin linked to a stable physical asset — ruble, gold, oil or grain.<sup>30</sup>

However, in 2024, the situation changed: Russian President Vladimir Putin signed a law allowing the mining of cryptocurrencies. From November 1, companies and individual entrepreneurs will be able to engage in mining upon registration in the register of the Ministry of Finance of the Russian Federation. Individuals will also be able to mine within the established limits of energy consumption. Advertising of cryptocurrencies and offering digital coins to the general public is prohibited. Since September 1, external calculations in cryptocurrency are allowed as part of the experiment.<sup>31</sup>

<sup>28</sup> Qiwi has applied for registration of the trademark "Bitruble". Interfax. September 2015. URL: <https://www.interfax.ru/business/470366> (accessed on 02.10.2024).

<sup>29</sup> An Ethereum-based cryptoruble is being created in Russia, Sergey Mendeleev said at the Blockchain life 2022 forum. September 2022. URL: <https://hashtelegraph.com/v-rossii-sozdaetsja-kriptorubl-na-baze-ethereum-soobshhil-sergej-mendelev-na-forume-blockchain-life-2022/> (accessed on 02.10.2024).

<sup>30</sup> The Central Bank commented on the idea of creating a Russian stablecoin. Vedomosti. July 2022. URL: <https://www.vedomosti.ru/finance/articles/2022/07/11/930783-tsb-prokommentiroval-ideyu-sozdaniya> (accessed on 02.10.2024).

<sup>31</sup> Federal Law No. 221-FZ dated 08.08.2024 "On Amendments to Certain Legislative Acts of the Russian Federation", date of publication: 08.08.2024. URL: <http://publication.pravo.gov.ru/document/0001202408080016?index=1> (accessed on 02.10.2024).

What seemed completely impossible in 2015, and was not supported in 2022, is resolved in 2024.

In addition, there is an understanding in Russian society of the need to establish cross-border transfers limited by sanctions risks. Thus, in the explanatory note to the draft law No. 540256–8,<sup>32</sup> it was noted that under the conditions of foreign policy pressure, the traditional channels of interbank settlements in the currencies of unfriendly countries have lost their reliability, which increases the risks of asset blocking. This requires a transition to new international settlement mechanisms.

We consider it advisable to propose the most liberal approach to the launch and circulation of digital currencies backed by national currencies, using the example of Nigeria, and as a first step, allow unlimited access to all non-residents, and introduce experimental restrictions for Russian citizens during 2025.

Russia could develop a ruble-backed stablecoin with similar requirements as USDT or cNGN. This solution would become an independent tool for international settlements from the United States, which would be useful for exporters and importers in conducting international settlements.

The proposal to create a ruble-backed stablecoin on an open infrastructure such as Ethereum could become a key tool for exporters and importers, allowing them to circumvent sanctions restrictions. It is important to take into account that stablecoins can not only strengthen the Russian payment system, but also change existing approaches to international settlements, providing new opportunities for economic cooperation.

Bitcoin and its derivatives have been ignored for a long time. However, stablecoins have now become a serious threat to the traditional payment system and are opening up new horizons for its development [20].

<sup>32</sup> Draft Federal Law No. 540256–8 On Amendments to the Federal Law on Digital Financial Assets and Digital Currency and on Amendments to Certain Legislative Acts of the Russian Federation.



## CONCLUSIONS

The world of the 21st century is in the midst of the fourth industrial revolution. Traditional financial instruments are no longer sufficient to meet the needs of modern society. With cash primarily used for savings, there is a growing need for a central bank digital currency (CBDC). For countries seeking to maintain their financial sovereignty, introducing their own digital currency is becoming an essential step to control transactions and ensure economic stability.

CBDCs are playing an increasingly important role in the global digital transformation, allowing governments to control financial transactions and maintain economic stability. The implementation of CBDCs requires a comprehensive approach that considers legal, technological, and educational aspects.

It is essential to consider the potential impact of CBDCs on financial inclusion, particularly for underserved communities. By promoting equal access to financial resources and services, CBDCs can help ensure a more equitable distribution of wealth.

Successful examples of CBDC implementations, such as eNaira and SandDollar, can serve as a basis for developing guidelines for CBDC implementation in other countries. These cases demonstrate how approaches can be tailored to the specific circumstances of each nation.

The introduction of the digital ruble is a significant step forward for the Russian financial system. It offers several advantages, including:

1. **Financial Inclusion:** The digital ruble makes it easier for people to access financial services, especially those in remote areas. This promotes financial inclusion, which is important for economic growth.

2. **Cost Savings:** Digital transactions are typically cheaper than traditional methods, such as cash or checks. The digital ruble helps reduce the cost of transferring and making payments, which can benefit both individuals and businesses.

3. **Transparency and Security:** The use of blockchain technology ensures greater transparency and security in financial transactions. This helps prevent fraud and other financial crimes, which are a concern for all countries.

The introduction of the digital ruble stimulates the development of new technologies and services, which can enhance Russia's competitiveness on the global stage. However, successful implementation requires attention to infrastructure, cybersecurity, and regulatory measures. If all stakeholders' opinions are taken into account, the digital ruble has the potential to modernize the economy.

The introduction of central bank digital currencies (CBDCs) is an important step in the evolution of financial systems. However, it is not a magic solution for all problems in international settlements. While CBDCs may offer new ways to simplify transactions, they do not address existing complexities, such as sanctions and blockages, which can still complicate business processes.

Sanctions imposed on certain countries create a need for alternative payment methods. In this regard, stablecoins backed by fiat currencies have become an attractive option. Their independence from traditional financial systems enables faster and more cost-effective transfers, which is crucial for maintaining business operations under challenging circumstances.

The potential of stablecoins to simplify international payments is particularly significant, given the existing problems with delays and high costs in international trade.

The proposal to create a stablecoin backed by the ruble on an open blockchain platform like Ethereum has practical importance for both exporters and importers. This could potentially become the foundation for new tools in international trade and payments. The recommendation to introduce limited use of this system for Russian citizens during 2025 allows for testing new mechanisms



with minimal risk to the economy. This is an important step towards introducing innovative financial instruments, and could lead to the development of more efficient and secure international payment systems. The study also highlights the potential use of stablecoins as a way to avoid the risks associated with sanctions, which could significantly impact international trade relations and strengthen the economic security of the country.

Thus, the introduction of central bank digital currencies (CBDCs) and stablecoins backed by fiat currencies represents an important step in the evolution of international payments. However, while CBDCs offer a promising solution, they do not solve all the challenges of cross-border

financial transactions. In fact, they may face some of the same limitations as traditional payment systems, such as sanctions and blockages. In the face of sanctions and blockages, entrepreneurs are forced to look for alternative settlement mechanisms, and stablecoins are becoming an attractive solution due to their independence and lower transaction costs. The introduction of a stablecoin backed by the ruble can ensure the continuity of business processes and increase financial stability. Therefore, further research and implementation of these technologies not only enhances the theoretical knowledge base, but also provides practical recommendations that contribute to the development of the Russian financial system and the global market.

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