

# PROSPECTS AND PROBLEMS OF CENTRAL BANK DIGITAL CURRENCY IMPLEMENTATION IN BRICS COUNTRIES

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**Abstract:** *the peculiarities of the current economic situation in the world have given a strong impetus to the development of financial, monetary and trade associations outside the influence of the global West. The most striking example of such rapid development is the BRICS economic forum. By 2024, more than 20 countries have applied to join, which indicates the expansion of the forum and its growing economic potential. The first serious step of the BRICS countries will be the creation of a common digital currency of the cross-border digital payment system (Cross-Border CBDC). It is necessary to consider all factors and risks when developing such a large-scale project. In this article, we will look at examples of other pilot projects of similar purpose, what problems may arise during their implementation, and what threats may arise for BRICS member countries in case of careless implementation of a common digital currency.*

**Keywords:** *economic cooperation, integration, digital currency, Cross-Border concept*

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## 1. Introduction

BRICS is an informal group of states, initially consisting of Brazil, Russia, India, China and South Africa, from the English name of which the name of this organization is made up (Brazil, Russia, India, China, South African Republic). Now, in addition to the initial five, Egypt, Iran, the UAE and Ethiopia have joined the BRICS.

The goal of BRICS is mutually beneficial cooperation among all member countries and accelerating the transition of these countries from "developing" to "developed". And we can see the impact of the BRICS on the economies of these countries – since the formation of this group, the share of GDP of the participating countries in the world economy has

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increased by 10.2%, while the indicators of the G7 (Great Britain, Germany, France, Italy, Japan, the United States and Canada) have decreased by 9.2% [1]

It follows that the BRICS countries may soon reach the same level as the United States of the post war period – to exert influence on much of the global economy. With the introduction of the BRICS Pay system, the dollar may have a competitor for the title of world currency, and even if the BRICS currency does not displace the dollar, it will in any case undergo some changes to make itself more competitive.

This article will take a closer look at the concept of Cross-Border CBDC, its advantages and disadvantages, possible ways of implementation, obstacles faced by countries in its implementation, possible consequences of its implementation for both the BRICS countries and the global community, and other elements of this complex system.

## 2. CBDC Concept

CBDC (Central Bank Digital Currency) is digital money issued by the central bank of the state. This is the next step in the development of money – from gold to fiat cash, from fiat cash to fiat non-cash, and the final step is digital. [2]

The essence of digital money is that it is issued by a state bank, just like cash, and it is stored in virtual wallets. This allows the state to regulate monetary policy, curb inflation, reduce the cost of large capital transactions, and gain a foothold in the field of blockchain technologies.

Digital money is similar in concept to cryptocurrencies, but they have several important differences. While cryptocurrencies are volatile in most cases, due to the poorly regulated issuance, central bank digital currency is regulated by the bank that issues it. Cryptocurrencies are also anonymous as they are decentralized, while digital currency is the complete opposite, as it is stored in central bank wallets and all transactions using them take place on the state bank system.

At the time of writing, 3 states have implemented digital currency – these are the Bahamas, Nigeria, and 8 Eastern Caribbean states that are members of the Organization of Eastern Caribbean States.

The first state to introduce CBDC back in 2020 is the Commonwealth of the Bahamas, with a "sand dollar". [3] It is accessed through a mobile application, and the account is opened on the platform of the Bahamas Central Bank. The need for digital currency appeared due to the geographical location of the country - the Bahamas is an archipelago, and a fifth of the total population did not have bank accounts.

The first experience of introducing digital currency was not entirely successful. By 2022, less than 1% of all transactions were made with sand dollars, and only 24% of the country's total population had digital wallets. Also, not all sellers accept payment in digital currency, which only exacerbates its authority in the eyes of the country's population. [3]

The second country to adopt a digital currency in 2021 was Nigeria with the eNaira. The reason for the introduction was the clumsiness of paper money, which was used by about 40% of the population who did not have bank accounts. The digital currency was supposed to displace cash and become the main currency in the country.

A year after the launch of the program, 0.5% of the population had an application to access a digital wallet, which is typical of a pilot project in a country with a population of 200 million people. At the end of 2022, the Central Bank of Nigeria allowed citizens without bank accounts to open an e-wallet using a mobile phone, and cash withdrawals were limited, which led to an increase in the number of digital currency users. By 2023, about 6% of the country's population used eNaira, which is currently the largest number of users of a non-pilot digital currency project.

The eNaira project can be considered a kind of standard for the introduction of digital currency, the pros and cons of which should definitely be taken into account when developing the BRICS Pay system.

**Table 1. Comparison of the key points of the e-currency projects of the central banks of the BRICS countries and Nigeria at the beginning of 2024**

Country	China	Russia	UAE	India	Nigeria
Name	Electronic Yuan	Digital ruble	Digital Dirham	Digital Rupee	eNaira
Short description	The project was launched in 2014 to improve retail. The pilot was launched in 2021. In third place among retail CBDCs	Initiated on August 1, 2023. On August 15, 2023, the pilot was launched. It was attended by 13 banks, about 600 people and 30 entrepreneurs in 11 Russian cities.	The project is key in the change in the financial structure of the UAE	The Reserve Bank of India has launched a CBDC pilot, the digital rupee.	The project was launched by the central bank of Nigeria. The goals are to increase the financial inclusion of the population, stimulate transactions, ensure traceability, and increase security. In first place among retail CBDCs
CBDC Form and Technology Access	Retail-oriented using account technology for circulation	A retail CBDC that uses a distributed ledger	Wholesale CBDC Using a Distributed Ledger	Wholesale CBDC using a distributed ledger / wholesale system development	A retail CBDC that uses a distributed ledger
Simplicity	Yes	Yes	Yes	Yes	No
Transaction Limit	Absent	Absent	Absent	Absent	Yes, there are limits on daily transfers and account balance
Insurance and currency emission	Commercial banks are engaged in the emission of	Distribution with the participation of the state.	Distribution with the participation of the state.	The pilot project has not yet been launched.	The Central Bank of Nigeria will issue the eNaira and financial institutions will act as intermediaries between the central bank and customers.

Applications	Domestic payments Offline payments	Domestic payments, International Transactions	Domestic payments, International Transactions	Domestic payments, International Transactions	Domestic payments
Intermediaries	Commercial banks. Authorized Central Bank Operator	Commercial banks Authorized Central Bank Operator	Banks Regulated financial institutions, not Banks	Banks Regulated financial institutions, not Banks	Traders Government Agencies Financial institutions licensed by the state
Results and ways of development	Formation of models for the development of the financial system. Implementation of security and business support measures.	The pilot project of transnational payments has not yet ended.	The Central Bank of the UAE has announced the mBridge project in collaboration with the Bank for International Settlements, the Hong Kong Monetary Board, the Bank of Thailand, and the Digital Currency Institute of the People's Bank of China	Possible applications of CBDC in wholesale trade: international transactions, interbank loans, and credit services.	The CBN envisions the eNaira not as a replacement for the national currency, but as an addition that will secure and speed up transactions. A greater effect of social and monetary policy is also expected because of the introduction of digital currency.

### 3. Cross-Border CBDC Concept

The next logical stage in the introduction of digital money is the economic unification of states using one digital currency. This has one main advantage - the simplification of transactions between the two states. This allows two or more countries, between which there is a large trade turnover, to simplify the procedure for financial transactions and customs declaration, thereby stimulating trade between each other.

Unlike the state digital currency, the interstate digital currency is regulated by the central banks of the member countries of the economic union. This is a more costly process, as banks must coordinate their efforts to achieve the desired result. Also, the desired result may differ from state to state, which implies an even greater degree of integration of the economies of countries.

The first integrated interstate digital currency is DCash, used from March 2021 to January 2024 in the Eastern Caribbean among 8 states (Antigua and Barbuda, Grenada, Dominica, Saint Vincent and the Grenadines, Saint Kitts and Nevis, Saint Lucia, Anguilla, and Montserrat). By March 2023, fewer than 10 thousand people had taken part in the program, and this number of people does not gain even one percent of the population of the Eastern Caribbean Commonwealth. [4]

A much more successful implementation of Cross-Border CBDC is ABER, the digital currency of Saudi Arabia and the UAE. A pilot project was launched in 2019 and now this system is undergoing some changes for full implementation at the national level. [5]



The project was coordinated by the Central Bank of Saudi Arabia and the Central Bank of the UAE. Their goals were:

1. To analyze the system of distributed ledgers for effective communication between banks and persons across the border
2. Find a solution that does not use distributed ledgers in case of their incompetence
3. Experiment with the maintenance of the same currency by two banks
4. Compare ABER's experience with other digital money pilots

This project was divided into 3 phases – between central banks, between central banks and commercial banks, and finally between commercial banks. [5]

Also, a distinctive feature of the ABER project was its decentralization. This step was made to simplify communication between commercial banks - they could exchange digital currency even if there was no connection between them and the state central bank. In their report, central banks argue that a possible digital money system should be subjected to even more decentralization than was undertaken in their pilot testing.

In implementing the project at this level, central banks faced some obstacles.

1. Round-the-clock communication support between banks. Central banks have said that communication should be instant to pay interest, and more attention should be focused on this in the future.
2. Legal uncertainty. Commercial banks were concerned about the possibility of electronic transactions of money and their "completeness". In other words, which party was responsible for the transaction and what guarantors of the non-repayment of money could be presented by the state.
3. The project used real money, but falsified clients and transactions. This is permissible for trial projects, but the conditions created may be too "hothouse", and do not reflect the real pace of transactions between individuals and legal entities both within the country and between states.
4. Setting the boundaries of the currency and the size of transactions. The maximum and minimum values of transactions, as well as the value of the currency, were fixed. This made it possible to prevent a possible overload of the system, the collapse of the experiment along with the collapse of the digital currency and prevent risks.

As a result, ABER is a pioneer in the integration of digital currency on the territory of several states on a large scale. The report of the Central Banks of the UAE and Saudi Arabia ends with possible ways to develop the Cross-Border CBDC concept for other countries, such as multiple currencies, more accurate interest calculation paths, improved DvP, further decentralization, and more. [5]

#### **4. BRICS PAY. Advantages for the participants.**

BRICS PAY is a program designed to facilitate transactions between BRICS countries and for other countries wishing to participate in this program. [7] In fact, BRICS PAY is a CBDC created for operations in several countries. Also, the BRICS PAY system is open, which allows countries that are not part of the BRICS economic bloc to take part in it.

According to the plans, BRICS PAY is intended for 5 BRICS member countries. These countries are developing a common digital currency due to the high degree of economic integration. [8] For Russia, the BRICS countries account for more than 50% of exports and 47% of imports, for Brazil – about a third, for India – 37% of exports and 19% of imports, South Africa is engaged in capital-intensive production of services, and China is the largest economy in the world, importing many raw materials, including from the BRICS countries. Considering Russia alone, the volume of exports in 2022 is more than 408 billion US dollars. The introduction of a system to speed up and standardize financial transactions will play into the hands of all BRICS members. [9] [10]

Also, another incentive for the development of a common financial transaction system is economic security. The countries of the post-Soviet space, including Russia, still suffer from the shadow economy, as does Latin America. To prevent undeclared fraud between the BRICS countries, a common financial platform is being developed. Any transactions that are not made through the BRICS PAY system can be considered suspicious, which will greatly simplify the search and suppression of the shadow sector of the economy. Of course, BRICS PAY will not be a prerequisite for international transactions, but this system will be much simpler than the old method, which will attract all respectable participants in foreign economic activity and simplify the capture of international criminals. [11] [12]

Digital currency has not yet been implemented on such a scale. The BRICS have a population of 3 billion people, their GDP is 66 trillion US dollars, and the BRICS countries occupy a leading position in the world market. Also, the BRICS countries trade with other countries, not all of which are ready to accept the BRICS PAY system. [1]

#### **5. Problems of introducing Cross-Border CBDC**

The implementation of any digital currency system comes with several challenges. Edward Snowden in his article calls digital currency another step towards "crypto-fascism" and total state surveillance of its citizens. He argues that China's ban on bitcoin, a currency very similar in concept to digital currency, leaves the Chinese with no alternative but to trade through the state, as the state issues banknotes and digital currency. [13]

Snowden also notes that the introduction of CBDC will not affect the life of an ordinary person in any way, since the only thing that will change in his life is the ability to pay for goods and services by bank transfer, which is already in the hands of the people thanks to credit cards. A very small part of citizens will make transactions in the international market if we consider interstate digital money. CBDCs can also be directed against citizens of the state, for example, the belated reaction of the suspicious transaction recognition system, which was supposed

to stop, for example, the transfer of money into the hands of an illegal organization, recognized the money as suspicious only a month later, when it passed into the hands of a single mother. Or a sudden power outage in the place where the servers are located, where all the digital money of the state is stored. And while such events may not happen often, the more users the system has, the more attention you need to pay to seemingly unfortunate circumstances. Small flaws in the system, affecting, say, 1 person in a million, on a scale of 3 billion people, will be very noticeable. [13]

Implementing a CBDC system at the cross-national level also faces several challenges. Let's say we have an economic union N, which has managed to introduce a digital currency and actively uses it when trading with each other. The fact that Union N is not all-encompassing, which is a given of the modern world, companies within it will specialize in trading with the member countries of Union N, and the rest of the international community. This problem can only be solved by expanding this union, which is impossible in the current political and economic climate.

**Table 2. Risks and benefits of implementing BRICS Pay for Member States**

BRICS member-country	Advantages	Risks
Russia Federussia	Monitoring financial transactions, including the size and timing of loans and the financing of the security and social sectors, will minimize corruption and abuse by commercial banks	The introduction of a large-scale digital payment system under centralized control by the state greatly increases the risks of increasing monopolization of the financial system
Brazil	The introduction of an international digital currency will help to significantly facilitate and accelerate the flow of foreign trade operations, which will reduce the vulnerability of the Brazilian commodity market to external global fluctuations in this industry	With the implementation of a cross-border CBDC system, high levels of corruption and corruption scandals (such as the Lava Jato scandal) in Brazil will create problems for attracting foreign investment through this system
India	The cross-border CBDC system will significantly increase the efficiency of existing payment systems and the level of transaction control, which will solve the problem of private issuers ignoring social costs	A significant share of India's economy is shadow (up to 38% of the country's GDP), which threatens to send the share of transfers using the BRICS Pay system into the shadows
China	In the context of slowing economic growth due to trade wars and significant labor and financial losses after the COVID-19 pandemic, expanding financial inclusion and lowering transaction costs will rehabilitate and strengthen the economy	China has extremely tense trade relations with the EU countries and especially with the United States, and China's involvement in the development of BRICS Pay may be perceived as a political step, which could lead to a new round of trade wars with China
South Africa	CBDC will increase the efficiency and security of the payment system without going through a clearing house, which will reduce the risk of failure or attack on the centralized system of any bank, and this will stabilize and strengthen the financial system	The energy crisis in South Africa threatens the very existence of the BRICS Pay system in the country
Egypt	With dependence on food imports and vulnerability to fluctuations in world prices, lower transaction costs, and the absence of the vulnerability of a third intermediary country will stabilize the economic sector and speed up trade procedures	Egypt's integration into the BRICS is one of the country's top priorities due to the acute shortage of foreign investment, but due to its aspirations, Egypt does not pay enough attention to the structural problems of the economy, which contributes to the deterioration of the investment climate

Ethiopia	The international digital currency system will make it possible to control and provide short-term liquidity assistance to those in need, which will make it possible to solve the problem of the ever-growing debt burden and irrational distribution of the state budget	Ethiopia regularly faces budget deficits generated by high levels of public debt (the country's debt-to-GDP ratio is around 45%), which may simply prevent Ethiopia from consistently cooperating and trading with other BRICS countries through the forum's CBDC
Iran	The international digital currency system will make it possible to circumvent the record number of sanctions applied against it and create stable trade ties with new partners in order to successfully withstand the pressure of the geopolitical crisis in the region	The unstable political situation in the region and the deterioration of Iran's diplomatic relations with many countries will scare away foreign investors and prevent them from using the full potential of BRICS Pay
UAE	The international digital currency system will diversify exports and reduce the economy's dependence on the energy industry, which will stabilize the country's position in the global market	Due to the favorable investment climate in the UAE, there is very fierce competition in the market due to the number of entrepreneurs. The introduction of the BRICS Pay system will make it easier for foreign businessmen to enter the market, but at the same time it will further complicate the conditions for young and small companies to exist in the market
Saudi Arabia	The international digital currency system will allow it to occupy a stable niche in the global market and withstand growing competition between the countries of the region	Saudi Arabia's economy is heavily dependent on oil prices, as the country specializes in the production and export of oil. World oil prices are very volatile: the slightest fluctuations in exchange rates can seriously shake the economy of Saudi Arabia. BRICS aims to create not only a digital payment system, but also a common currency for BRICS member countries; Illiterate implementation of projects in the world market can cause significant harm to the Arab economy
Common for all member countries	Overall potential benefits	General potential risks
	The creation of the BRICS Pay system and the strengthening of trade ties between the member countries of the forum will allow sanctioned countries (Russia, China, Iran) to circumvent the imposed sanctions. BRICS Pay will also attract foreign capital and investment and diversify the economies of the member states.	There is a high probability that the forum will be politicized. Any types of interstate economic associations, integrations and organizations always carry the risk of losing the economic independence of the participating countries.

We sincerely believe that such an approach is incorrect, because for real development it is necessary to consider absolutely all factors and possible consequences, both negative and positive.

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