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Digital Currencies in Cross-Border Payments: Use under Sanctions

L.V. Krylova
Financial University, Moscow, Russia

ABSTRACT

The digital transformation of the world economy has updated the issues of using digital technologies in the system of cross-border payments. The key moment was the introduction of virtual currencies into monetary systems and payment turnover. The circulation of cryptocurrencies along with fiat money in the global economy has created paradoxical situations that require research both scientific, theoretical and applied context. The **subject** of the study is the payment functionality of digital currencies. The **purpose** of the study is to explore the possibility of using cryptocurrencies and central bank digital currencies (CBDC) for cross-border payments within the existing traditional financial system, both in the general context and with the application of sanctions restrictions that hamper international settlements in traditional methods. In the process of research, content analysis, retrospective analysis, methods of logical and comparative analysis were used. This study is one of the first to explore the possibility of using bitcoin in cross-border payments under sanctions restrictions. It is shown that the volatility of cryptocurrencies is the most important characteristic that limits their use as payment instruments, but this risk can be neutralized by using cryptocurrency as a transit instrument, as a temporary intermediary in the exchange of fiat currencies. The **conclusion** is made about the possibility of using cryptocurrencies as a transit instrument in the implementation of exports and imports settlements in toxic currencies of unfriendly countries, and to use the Central Bank Digital Currencies in cross-border settlements within the framework of integration and non-integration interstate associations with the participation of Russia.
Keywords: cryptocurrencies; digital currencies; CBDC; bitcoin; fiat currencies; cross-border payments

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INTRODUCTION

The digitalization of the financial sector and the active development of digital currency projects by central banks across countries raise the question of their use in cross-border payments. This question is not trivial, as it relates to the definition of the configuration of the future global payment system, the strategic positions of the various digital currencies in the global monetary system, and the risks of their use in conjunction with the traditional financial system [1].

Even more complicated is the problem of competition between different classes of digital currencies: cryptocurrencies and central bank digital currency, including in the context of their capacity for cross-border payments.

Cryptocurrencies are mathematically decentralized convertible virtual currencies that are protected by cryptography. The issuance and circulation of such currencies is based on distributed registry technology (further — DLT). The first, but not the only representative of it is bitcoin (further — BTC).

The driving force of the BTC concept, and then its rapid implementation, was the confidentiality and anonymity of transactions. Already 6 years after its appearance, BTC could be exchanged for at least 40 national fiat currencies [2]. The possibilities of the technology used have caused the emergence of many varieties of cryptocurrencies, combined under the term altcoins.

Cryptocurrencies started to be actively introduced into the traditional financial system, relevant derivative financial instruments and margin trading appeared, in the class of cryptocurrencies began to distinguish secured (stablecoins) and unsecured cryptocurrency, which accounts for an estimated 95% of their total amount [3].

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And all this is happening in an unregulated financial environment.

Cryptocurrencies are the subject of active study of both Russian [4, 5], and foreign researchers [6, 7]. The main challenge was the attribution of this digital instrument in the context of money theory: whether it can be considered as modern forms of money reflecting the trends of the development of monetary systems on a new technological basis as an "attributive phenomenon of the digital economy" [8, p. 110], or whether it is a speculative financial asset capable in certain cases to perform individual functions of money.

Another class of digital currencies converted to fiat money is central bank digital currency (further — CBDC). Currently, it is being actively tested by the regulators of different countries, and primarily in the context of their use for cross-border payments.

To what extent can virtual currencies in general and cryptocurrencies, in particular, be used for export-import payments, and can they perform similar functions at all?

This setting of the question will allow not to go deeper into the consideration of the economic nature of cryptocurrencies, given that a single answer to the discussion question, whether they are money, the experts do not have. Nonetheless, most people agree that cryptocurrencies can be used as a form of payment, but they are not money because they do not perform most monetary functions, have no internal value, and are not a someone's obligation [9].

However, the practice of using cryptocurrencies as a means of payment clearly exists, which is confirmed by both scientific research and empirical data [10].

MATERIALS AND METHODS: SOLVING PROBLEMS

The purpose of the study is to explore the possibility of using cryptocurrencies and central bank digital currencies (CBDC) for cross-border payments and settlements within the existing traditional financial system, both in the general context and with the application of sanctions restrictions that hamper international settlement in traditional methods.

In the research process, content analysis, retrospective analysis, logical and comparative analysis methods were used.

Today, the following options are available for cross-border payments:

- *correspondent banking* — formed on the basis of agreements between banks of different jurisdictions and provide for their opening of correspondent accounts for the provision of payment services, including international settlements;
- in *single system (or closed loop)*, one payment service provider (further — PSP) performs payments in several jurisdictions without interacting with foreign PSP or foreign payment infrastructures;
- *multilateral platform* allows a PSP client — a member of that platform in one jurisdiction — to make payments to a client of another PSP, also a member on that platform, but already in other jurisdictions. However, in this model access to payment services for third-party users — non-participants of the platform are not possible;
- in the *peer-to-peer model*, payments are made directly without the involvement of intermediaries — PSP using DLT technology. Peer-to-peer solutions include crypto assets, stablecoin schemes, and some central bank digital currency projects.

An example of this is Binance's peer-to-peer crypto exchange service, which allows you to buy and sell cryptocurrency assets, in particular BTC. Bitcoin represents a decentralized one-ranking peer-to-peer system of digital virtual currency of the class of cryptocurrencies based on blockchain technology [11].

LocalBitcoins[1] is the world's largest Bitcoin

[1] On 9 February 92023, LocalBitcoins ceased operations, it banned the registration of new accounts, and on February 16 stopped trading and limited the functions of the wallet, leaving only the withdrawal of funds.

exchange that has been able to trade bitcoins in 135 different currencies. This service has served customers in 189 countries, including Russia.[2] The system did not use fiat currencies, which allowed national legislation and regulatory requirements to be ignored. Instead, there was an exchange of BTC between two anonymous private cryptocurrency wallets.

BTC exchanges were off-chain, and, despite the large number of accounts, LocalBitcoins was only one node in the blockchain. A LocalBitcoins client purchased a cryptocurrency in one jurisdiction for a national currency (or another currency in accordance with national law) and sold it to another owner of a Localbitcoins account located in another jurisdiction and possibly for a different currency, without registering a transaction on the blockchain. The service carried out the transfer of claims to BTC only after confirmation of payment outside the system. Since LocalBitcoins was only one block chain node, the only visible on-chain transfers were the transfers of bitcoins to and the withdrawal of BTC.

A significant problem with the use of cryptocurrencies, in particular bitcoin, as a means of payment (unless we take the legal aspect of the legality of such transactions in a jurisdiction) is the risk of their depreciation during the period of being on the account after receiving the payment for the commodity due to the high volatility of the exchange rate (*Fig.*).

The study [12] showed that the peak values of BTC-dollar volatility were 130–140% in 2013–2014 and 60, 20 and 15% in 2015, 2016 and 2017, respectively, while the average volatility of the euro-dollar pair is less than 4% and the maximum is below 6%.

According to the Bank of Russia, the volatility of the exchange rate of BTC in 2021 was 81%. This is significantly higher than the volatility of both gold prices (14.4%) and stock market instruments (14.8% for S&P500 and 16.8% for MOEX).[3]

The volatility of cryptocurrencies as a characteristic limiting their use as payment instruments, is the subject of research and many foreign authors, for example [13]. Similarly, this risk can be reduced by using cryptocurrency as a passing intermediary in the exchange of fiat currencies, i.e. using BTC as a transit instrument. In this case, one participant in an export-import transaction acquires bitcoins in its jurisdiction for a fiat currency, immediately transfers them to its counterparty, which immediately transfers them into the correct currency in another jurisdiction and credits the amount received to its bank account.

In this scheme, the funds are in the cryptocurrency for a very short time, as a result of which the risks of their depreciation are relatively small. Other risks remain the same: both financial and operational and technological, inherent in all transactions with cryptocurrencies. These, in part, include counterparty non-payment risks (counterparty risks) and liquidity risks, the level of which depends on the choice of a specific cryptocurrency for transit.

Short-term finding of funds in the cryptocurrency is a marker that allows to track transit cryptocurrency transactions and separate them from investment deals. Transit use of cryptocurrencies applies both for international payments and for capital withdrawal from the country in the presence of currency restrictions.

Transit BTCs can be bought and sold both on-chain, where these transactions are reflected and recorded in the blockchain, and off-chain as shown above. Inside-network transactions are only a small proportion of all bitcoin-transactions, most of which are "out-of-blockchain": for example, in services like LocalBitcoins. It is estimated that the volume

[2] In October 2022, the company announced that it could no longer serve customers from Russia.

[3] Cryptocurrencies: trends, risks, measures. Report for public consultations. Bank of Russia. 2022. P. 12. URL: http://www.cbr.ru/content/document/file/132241/consultation_paper_20012022.pdf (accessed on 22.07.2023).

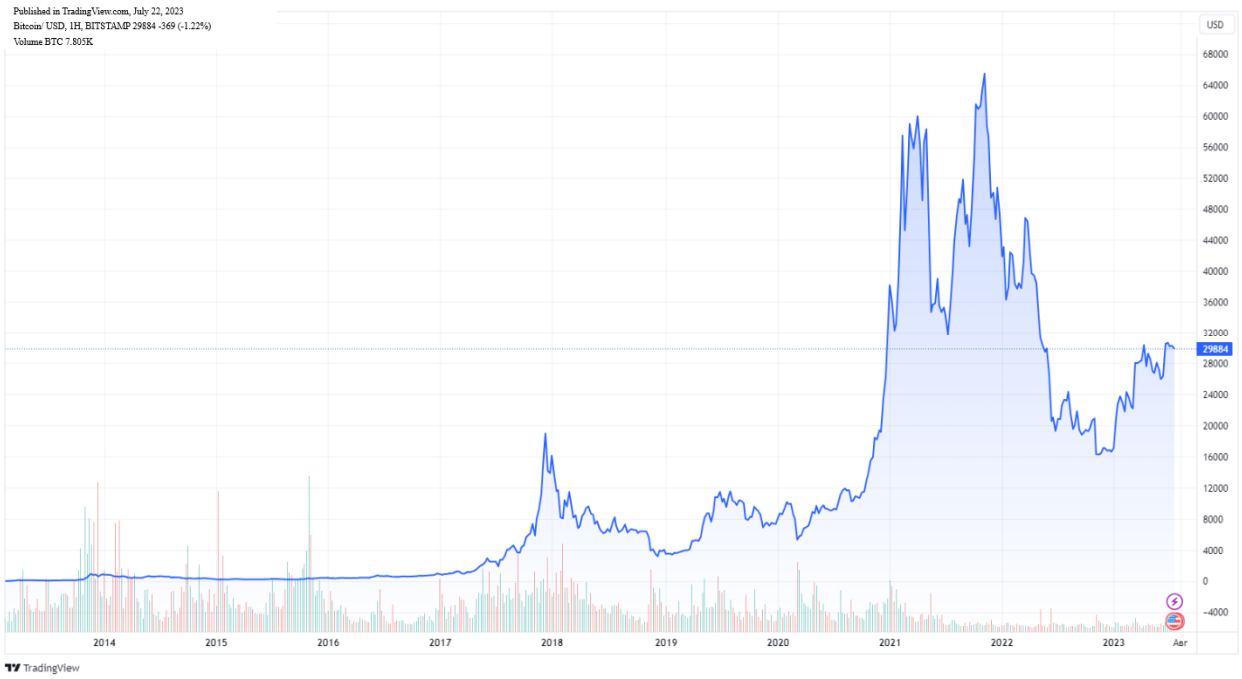

Fig. **The Bitcoin Exchange Rate Against the US Dollar 2014–2023**

Source: URL: https://ru.tradingview.com/chart/?symbol=BITSTAMP%3ABTCUSD (accessed on 22.07.2023).

of off-line BTC transactions is at least 10 times greater than that recorded in the BTC blockchain.[4]

At the same time, if transactions on the network are publicly available and directly monitored, the vast majority of off-the-line transaction is confidential information, which allows them to be used not only to circumvent currency restrictions, but also extraterritorial sanctions. However, if absolutely necessary, at the request of the national regulator, the corresponding IP-addresses can be transmitted to it by the operator of the crypto service. Nevertheless, even a national regulator is easier to track individual bitcoin transactions on the exchange than a peer-to-peer BTC transfer off-chain.

RESULTS OF THE STUDY AND DISCUSSION: CRYPTOCURRENCY PAYMENT POTENTIAL

Estimating the volume of transit transactions in the total turnover of cryptocurrencies is very difficult, but there are data that they account for an average of not less than 7.4% of all transaction, of which 20% represent a cross-border movement of currency, and this is probably underestimated data. For countries with restrictions on international capital movements, the share of cross-border payments in BTC transactions is higher (*Table*).

The small average transaction size in LocalBitcoins does not fully reflect the real picture and may be explained by the fact that when making P2P transactions counterparties may modify their settings to optimize operating costs.

The most transit transactions with bitcoin per capita in 2019 and 2020 were with the Venezuelan bolivar, due to strict currency controls and US sanctions. The second is the Russian ruble. Analysis of these transactions, as well as a number of other studies, show that they are actively used in the context of restrictions on cross-border movement of capital [15].

The use of cryptocurrencies in transit payment transactions will require changes to Russian legislation and the creation of

[4] CryptoCompare.com API, Blockchain.com API (accessed on 22.07.2023).

Table

Bitcoin Transit Transactions Data on LocalBitcoins for the Period 15.03.2017–23.07.2021

Indicator	Volume
Number of transactions, un.	45 528 193
Trading volume, USD	11.0 bln
Average transaction size, USD	242
Largest registered transaction size, USD	2.3 mln
Number of fiat currencies, un.	135
Transactions Colombian peso — Venezuelan bolivar,% of all transactions in original currency	24.8
Transactions USD — Nigerian naira,% of all transactions in original currency	24.3

Source: Clemens Graf von Luckner, Carmen M. Reinhart, Kenneth S. Rogoff. Decrypting New Age International Capital Flows. NBER Working Paper No. 29337. October 2021. URL: https://www.nber.org/system/files/working_papers/w29337/w29337.pdf (accessed 03.03.2023).

appropriate infrastructure for the circulation of digital currencies.

Federal Law from 31.08.2020 No. 259 "On digital financial assets, digital currency and amendments to certain legislative acts of the Russian Federation" (DFA Law) prohibits the use of digital currencies as a means of payment in the territory of Russia. But the Bank of Russia allows the possibility of using cryptocurrencies in cross-border transactions.

The Bank of Russia considers the long-term potential of the use of cryptocurrencies for payments limited, but it should be borne in mind that Russian foreign economic activities will still have to function in isolation from the traditional world financial system for a long time. In these circumstances, it is advisable to start using non-traditional tools.

Volumes of transactions of Russian participants with crypto assets are significant: they reach 5 bln USD per year. In 2020, in the context of the pandemic, Russia ranked in the ranking of 154 countries by the Global Crypto Adoption Index[5] 2nd place (1st place — Ukraine, 3rd place — Venezuela), which confirms the widespread use of cryptocurrencies in Russia, and by all components of this index.

In our view, it is advisable to share measures for the development of the infrastructure of legal circulation of cryptocurrencies in the Russian Federation and measures to introduce them into the payment circulation in transboundary transactions to circumvent sanctions. The first are strategic and the second are tactical.

As part of the first group of measures, the Federal Law "On experimental legal regimes in the field of digital innovation in the Russian Federation" from 31.07.2020 No. 258 has already been adopted. It will allow the application of experimental legal regimes (further — ELRs) in the field of digital

[5] The Global Crypto Adoption Index is calculated as a geometric average of four indicators: 1) value of the received cryptocurrency within blockchain transactions weighted by purchasing power parity (PPP) per capita; 2) PPP per capita value of cryptocurrency transferred in retail blockchain transactions; 3) number of cryptocurrency deposits weighted by number of Internet users; 4) volume of P2P trading, weighted by PPP per capita and the number of Internet users, is calculated on the basis of data from two major platforms — Paxful and LocalBitcoins. Cryptocurrencies: trends, risks, measures. Report for public consultations. Bank of Russia. 2022. URL: http://www.cbr.ru/content/document/file/132241/consultation_paper_20012022.pdf (accessed on 22.07.2023).

innovation and in the financial market,[6] but in accordance with para. 2 of art. 6 of this Law, the Bank of Russia has the right to establish various restrictions in this sphere. The ELR currently allows for the legal testing of schemes for the practical usage of digital currency in actual transactions. Such testing has already started.

Rosbank conducted the first pilot transactions to pay for imports of cryptocurrency in accordance with the requirements of Russian legislation and the restrictions of the Bank of Russia. The transactions were carried out through the Russian fintech service B-crypto, which for the money of the importer received through Rosbank, purchased in friendly countries abroad cryptocurrency and transferred it to a foreign supplier. At the same time, the foreign trade agreement should take into account the calculations of cryptocurrency and contain a reference to the cryptocurrency wallets of both the importer and the foreign exporter.

This mechanism allows cross-border settlements in cryptocurrency with counterparties from individual friendly countries. But it does not solve the problem of making cross-border payments in conditions of blocking sanctions from unfriendly countries, as the restrictions are localized in banks of external circle not regulated by national legislation. The Rosbank scheme requires the identification of the participants of the transaction with the cryptocurrency and the commodity — the object of the deal. It is the pilot of the legalization of the circulation of cryptocurrencies in Russia.

In February 2022 the US Finance Ministry imposed sanctions against systemically significant Russian banks, including them on the SDN list (Specially Designated Nationals List). This list of restrictions entails the forced closure of correspondent accounts, the blocking of assets of banks subject to sanctions and the prohibition of any transactions with local counterparties. Similar sanctions have been imposed by 27 Member States of the European Union and by a number of other States. At present, Rosbank is also under blocking sanctions from the US, the EU and the UK.

The banking version of cryptocurrency settlements does not effectively circumvent the sanctions of unfriendly states, because these transactions require compliance with KYC ("know your customer") procedures and can be freely tracked and blocked.

While the use of transit off-chain bitcoins significantly complicates the identification of subjects and purposes of transactions. This "non-banking" option of cross-border payments using cryptocurrencies creates the possibility of circumventing sanctions, but limits the control of the state regulator. This scheme should be tested as a temporary tactical measure.

The temporary nature of tactical measures is also related to the possibility of tighter sanctions in cryptocurrency markets. Thus, as part of the eighth sanctions package, the European Union restricted its companies from opening cryptocurrency accounts, wallets, or providing cryptocurrency storage services to Russian residents. But for that, they must at least be identified as such. The more anonymous a crypto service is, the more suitable it is for use under the sanction's regime.

Unlike DLT-based, non-nothing liabilities, CBDCs are central bank obligations denominated in the national currency that have a digital representation and are capable of acting as a means of payment, measurement and retention of value [16]. It is a new form of money intended to be used as a legitimate means of payment [17].

The introduction of CBDC was approved in 2021 by the leaders of the leading countries at the Rome Summit of the Group of 20. The cross-border payment development programme, currently characterized by high

[6] Art. 1 p. 2 pp. 4 Federal Law "On experimental legal regimes in the sphere of digital innovations in the Russian Federation" from 31.07.2020 No. 258.

tariffs, low transaction speed, limited access and insufficient transparency, consists of 19 building blocks (BBs) based on the CPMI[7] report to the G20. In accordance with international instruments, CBDCs are assessed to meet five criteria: they must not cause damage, disrupt existing systems, but contribute to increased efficiency and sustainability of payments, be compatible with traditional payment systems (PSs) and provide the necessary access to payment services.[8]

The *access criterion* for cross-border payments using CBDC assesses the principle and conditions of non-resident access (in the context of tariffs and limits) to the wholesale and retail CBDCs of a particular country.

The *compatibility criterion* evaluates the ability to use this CBDC PSP from other CBDC systems. Functional compatibility for CBDC systems includes scalability, legal regulation, management principles and business model features, AML/CFT, privacy assurance, technology standardization, risk management.

The central banks test various CBDC launch models, the design of which is determined by a combination of the following characteristics:

- retail or wholesale CBDC;
- centralized or decentralized;
- tokens or central bank accounts;
- one-level or two-level model.

Since CBDCs are projects of government regulators, it is essential to maintain control over participants and transactions while at the same time being in the trend of the global development of digital finance based on breakthrough technologies, in particular DLT.

The number of members of the system and the size of payments are determined by whether the CBDC is retail or wholesale, as wholesale CBDCs only involve authorized PSP banks. The wholesale format facilitates the process of introducing digital currencies into national payment circulation and control of their use by the central bank. It also strengthens the position of commercial banks. But this is rather a temporary, initial version of the introduction of CBDC in the national payment system (PS). The digitalization of world finances will soon require increased access to digital currencies by other participants in settlement and payment relationships.

Achieving an optimal balance between centralization and decentralization of digital finance in central banking projects is a key and most challenging issue.

The decentralized model (DeFi) involves the absence of intermediaries, the conclusion of transactions using smart contracts based on DLT and the direct control of users over the execution of transaction. DeFi tools allow you to make payments faster and at lower costs. But they are difficult to regulate due to the lack of an intermediary as an object of regulation, anonymity and the globality of transactions.[9] As a result, most CBDCs propose either a centralized or hybrid strategy, taking into consideration the DeFi opportunities.

It should be identified that the regulators' selection of the CBDC design comes mainly from a desire to preserve banks as intermediaries that can be regulated within the framework of CBDC systems. Their exclusion from the system or substantial weakening of positions will not only intensify the processes of disintermediation [18, p. 112], but will also reduce the effectiveness of digital currency control.

In the context of cross-border settlements, it is possible to use both CBDC in national currencies and the single digital currency, but as a rarer case.

For cross-border payments using CBDCs in different jurisdictions, there are three main methods of achieving functional interoperability: through the compatibility of national CBDC

[7] The Committee on Payments and Market Infrastructures (CPMI).

[8] Options for access to and interoperability of CBDCs for cross-border payments. Bank for International Settlements. Report to the G20. July 2022. URL: https://www.bis.org/publ/othp52.pdf (accessed on 22.07.2023).

[9] Decentralized finance. Report of the Bank of Russia. 2022. URL: https://www.cbr.ru/Content/Document/File/141992/report_07112022.pdf (accessed on 22.07.2023).

parameters, through the interlinking of CBDC systems, or through the creation of a single, country-to-country CBDC system.[10]

The first option (compatibility) is achieved through the use of common standards of key characteristics of national models — the minimum required for cross-border payments in the CBDC, the easiest and least costly option to implement in the short-term.

The other two options involve high initial costs and possible disagreements between the parties on the design and management policies of the CBDC. These options can be implemented where the benefits of large-scale cross-border payments outweigh possible differences between countries. These are countries with large bilateral trade volumes and similar concepts of CBDC design.

But these three options are not mutually exclusive: it is possible to create a single CBDC system, or interconnected systems with major trading partners, and for other countries to use combined CBDC models for cross-border payments (1st functional compatibility option).

A significant moment in the use of CBDCs in international settlements to be taken into account is the conditions of non-resident access.

Access to national CBDC for non-residents involves two aspects: for foreign PSP and for non-residents who are not PSP. The problems and risks associated with accessing a wide range of non-residents may be more significant than the problems associated with accessing only foreign PSP. Question of the extent to which access is granted to non-residents and how it will be conditioned by criteria, commissions and transaction limits.

For example, the Bank of England's digital pound project requires non-residents to have access to it under two conditions:[11]

- firstly, a "recognition mode" will be used to determine which PSPs outside the UK will be able to offer their customers digital pound wallets. This will ensure compliance with UK sustainability standards and FATF anti-laundering standards;
- secondly, the UK authorities reserve the right not to grant access to digital pounds to non-residents from certain high-risk jurisdictions.

Innovation Hub of the Bank of International Settlements (BIS) monitors, highlights and coordinates the testing of CBDC projects in different countries with an emphasis on the implementation of cross-border payments.

Tested different formats of cross-border interaction with single and different DLT platforms, with currency conversion and without. Consideration was made for international settlements on a common platform that would allow several CBDCs to be issued by different central banks (Dunbar project). Interoperability between CBDCs and traditional PSs were tested. Some projects tested the compatibility of CBDC with digital systems and securities market infrastructure. In general, these projects provided central banks with a comprehensive view of all transactions inside their respective countries.

The **Jasper-Ubin** project tested the possibilities of token-based wholesale CBDC on different DLT platforms in different jurisdictions for cross-border (between Canada and Singapore) cross-currency (CAD and SGD) payments. It was implemented in the interlinking format of the two DLT platforms and on the basis of the HTLC protocol[12] for the non-intermediate PvP settlement transaction. Commercial banks in their jurisdictions had access to their local network and could

[10] Options for access to and interoperability of CBDCs for cross-border payments. Bank for International Settlements. Report to the G20. 2022. July 2022. P. 28. URL: https://www.bis.org/publ/othp52.pdf (accessed on 22.07.2023).

[11] Bank of England. The digital pound: a new form of money for households and businesses? Consultation Paper. February 2023.— URL: https://www.bankofengland.co.uk/-/media/boe/files/paper/2023/the-digital-pound-consultation-working-paper.pdf (accessed on 22.07.2023).

[12] The Hash Time Locked Contracts (HTLC) protocol allows you to create payments with a limited term: the protocol includes both hash checks and check the expiration of payment lock time.

make multi-currency cross-border wholesale payments with their counterparties in another jurisdiction. The central bank in each country had full control over access for its banks. Testing demonstrated the possibility of using such a scheme for individual transactions and a number of problems with the increase in transaction numbers and jurisdictions.

The **Aber** project tested the capabilities of a unified cross-border interbank system based on CBDC wholesale issued in two different jurisdictions. Transactions were conducted with the Central Bank of Saudi Arabia, the United Arab Emirates Central Bank and six commercial banks, three from each country. The project used fiat money to test the interoperability of the CBDC system with the national RTGS PS.[13] Settlements between commercial banks were carried out without access to central bank nodes, with transaction validation by participants of transactions without the participation of central banks. The project demonstrated that a single cross-border system with the issuance of different digital currencies is technically viable and confirmed the prospect of DLT technology for domestic and international settlements.[14]

Among the *CBDC retail projects* being tested are e-CNY, Sand Dollar (Bahamas), eNaira (Nigeria), DCash (Eastern Caribbean Currency Union). Most of them are focused on improving the efficiency of domestic retail payments and currently do not have cross-border functionality.

However, Innovation Hub of the BIS considered it necessary to test the ability to use and retail CBDC for international settlements. The project involved the central banks of Israel, Norway, Sweden and the Innovation Hub of the BIS, which tested the possibility of cross-border cross-currency transactions on the basis of CBDC using DLT (Icebreaker project).

It used hub and spoke model[15] to connect the national retail CBDC systems, making it easy to scale transactions and the number of participants. Functional compatibility option — 2 (interlinking). Calculations were carried out using the PvP scheme using smart contracts (the HTLC protocol). The cross-border transaction was divided into two internal payments: one in each of the CBDC systems. At the same time, none of the CBDCs went beyond their jurisdiction. This was achieved by decoupling foreign exchange (FX) services from payment services. FX service providers buy CBDCs in one system and sell another CBDC in another system, supporting CBDC wallets in different national systems. The use of the HTLC protocol eliminates the temporary gap between payment initiation and settlement, helping to eliminate the counterparty risk in a cross-border transaction.

Analysis of the possibilities of CBDC systems of different configurations and designs gives reason to focus on the construction of the Russian system of cross-border settlements using wholesale CBDCs in a combined, hybrid option:

- with the participation of major trading partners, mainly Russia and China (possibly India), taking into account similar ideas about the feasibility of using CBDCs and their design, build national interlinking CBDC systems in functional compatibility with option 2 on the basis of its own CBDC for cross-border currency payments with conversion;
- for the other BRICS and EAEU member countries to use option 1 “compatibility national CBDC models” with the prospect of further accession to option 2.

The compatibility format of national CBDC systems using common standards of characteristics of national models is the

[13] RTGS (Real-Time Gross Settlement) — real-time calculations with individual processing of each transaction (gross basis). Used for large amounts and forward payments.

[14] Options for access to and interoperability of CBDCs for cross-border payments. Report to the G20. Bank for International Settlements 2022. July 2022. P. 42–54. URL: https://www.bis.org/publ/othp52.pdf (accessed on 22.07.2023).

[15] Exploring multilateral platforms for cross-border payments. Bank for International Settlements. January 2023. https://www.bis.org/cpmi/publ/d213.htm (accessed on 22.07.2023).

simplest solution, not involving advanced forms of economic and monetary integration, but requiring the agreement of the participating countries on the configuration parameters of the CBDC cross-border payment system.

Organizational and financial support for the EAEU countries can be provided on the basis of the Eurasian Development Bank (EDB), and for the BRICS countries — on the base of the New Development Bank.

CONCLUSION

The primary study attempted to assess the feasibility of using digital currencies for cross-border payments and reached the following conclusions.

It is advisable to use the capabilities of cryptocurrencies as a transit instrument in the implementation of settlements on exports and imports in foreign currencies of unfriendly countries, and within the framework of integration and non-integration interstate associations with the participation of Russia to emphasize the use of CBDC in cross-border settlement.

Central banks are free to choose the design of their CBDC system to the extent that it is functionally compatible with traditional PSs on the one hand and with CBDCs in other countries on the other, and subject to the five criteria mentioned above.

National CBDC models are dominated by two-level retail systems, allowing regulators to maintain control over the circulation of digital currencies and the functionality of commercial banks, while access for non-residents is limited and controlled.

It is appropriate to separate FX services in cross-border CBDC transactions from the provision of payment services to PSP clients of national jurisdictions by aggregating currency quotation offerings on a multilateral transboundary platform.

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ABOUT THE AUTHOR

Lyubov V. Krylova — Dr. Sci. (Econ.), Prof. of the Department of Global Economy and World Finance, Financial University, Moscow, Russia
https://orcid.org/0000-0002-9950-8060
LVKrylova@fa.ru

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