

CBDCs in emerging market economies¹

Key takeaways

- A two-tier retail model of the digital rouble will enable the Central Bank of the Russian Federation to take full advantage of the existing two-tier financial system and reduce clients' dependence on financial institutions.
- Overall, the introduction of a digital rouble will result in increased competition in the financial market, enhanced service quality and customer experience, as well as improved financial inclusion.
- The digital rouble will not affect the way the central bank implements monetary policy. Its current operating procedure will still allow it to achieve its monetary policy goals after the digital rouble is introduced.
- The digital rouble offers opportunities for improved financial sector efficiency and greater financial stability. Risks to financial stability exist but remain negligible.

Introduction

The past several years have been marked by rapid changes in the payments landscape, as well as a surge in research on central bank digital currencies (CBDCs). The motivations behind CBDC-related work vary across economies and depend on multiple factors. This paper contains a review of the key objectives of issuing a digital rouble, along with the main challenges for financial stability and monetary policy accompanying its introduction.

¹ The access of the Central Bank of the Russian Federation to all BIS services, meetings and other BIS activities has been suspended.

1. Main objectives of introducing a digital rouble

In recent years, many central banks have accelerated their research on CBDCs, with a number of them proceeding to more advanced stages and opting for different models, ie retail or wholesale CBDCs. In general, the design choices are determined by various policy objectives and shaped by local circumstances.

The Central Bank of the Russian Federation is among the central banks and other monetary authorities engaged in exploring and developing CBDCs. At present, the central bank is actively working on the digital rouble project. A digital rouble will be the third form of money issued by the central bank and will be the central bank's liability. Like other central banks around the globe, the Central Bank of the Russian Federation believes that the launch of a digital rouble will lay the foundation for a new payment infrastructure enabling a range of additional advantages for households, businesses and the state.

More specifically, the introduction of a digital rouble will help reduce clients' dependence on financial institutions, since customers will access their wallets through the infrastructure of any financial institution that holds their accounts. Moreover, transactions in the digital rouble will be charged under unified rules throughout the country and the cost will be minimal. Overall, these measures will be instrumental in increasing competition in the financial market, and improving service quality and customer experience.

Another key motivation for issuing a digital rouble lies in enhancing financial inclusion. The chosen model provides for maximum accessibility of the digital rouble for customers. The possibility of using it without internet access will allow for better financial inclusion, especially in remote and sparsely populated areas.

Furthermore, financial institutions will have the opportunity to develop and offer innovative financial services to households and businesses, particularly with the use of smart contracts.

The two-tier retail model has been selected as the target model for the digital rouble.

1. In Tier 1, the central bank:

- launches, maintains and develops the digital rouble platform;
- connects credit institutions to the digital rouble platform;
- defines the rules for carrying out transactions through the platform;
- issues digital roubles via the platform;
- ensures the creation of wallets for credit institutions and clients (individuals and legal entities) on the platform.

2. In Tier 2, credit institutions:

- engage and interact with clients;
- implement the procedures stipulated by the anti-money laundering/combating the financing of terrorism/countering proliferation financing (AML/CFT/CPF) legislation, and carry out client identification and anti-fraud checks for the purposes of foreign exchange control;
- create wallets on the digital rouble platform upon clients' instructions;

- execute payments and transfers via the digital rouble platform upon clients' instructions.

From a technological perspective, the central bank, based on its estimates, considers a hybrid IT architecture (consisting of both centralised system components and distributed ledgers) to be desirable during a test period.

With a view to securing client transactions, the central bank intends to develop a software module embedded in financial institutions' mobile applications and enable the digital rouble platform to interact with clients to confirm operations when they create wallets and deposit or transfer funds. Such a mechanism will ensure that digital rouble transactions are carried out only upon a client's authorisation.

Regarding the project's implementation stages it should be mentioned that a prototype of the digital rouble platform was developed in 2021 and currently its testing jointly with financial market participants is already underway. For this purpose a pilot group consisting of 12 banks was formed.

The development of the digital rouble platform is intended to be gradual. During the first stage, the plan is to start issuing digital roubles and to enable transfers between individuals. The second stage will launch more operational scenarios for households, businesses and the state, and enable the use of smart contracts. Subsequently, the central bank plans to introduce an offline mode and provide an opportunity to create wallets for non-resident clients, as well as to convert digital roubles to foreign currencies.

On balance, when considering the design of a CBDC, regulators may face a number of challenges, including those that concern monetary policy implementation, financial intermediation and financial stability, which will be touched upon below.

2. CBDC-related challenges for monetary policy, financial intermediation and financial stability

The emergence of a new form of money, besides the existing two – cash in circulation and bank deposits – will undoubtedly have an effect on monetary policy implementation, financial intermediation and financial stability. The magnitude of this effect will depend largely on the parameters of the digital rouble, including transaction and/or wallet size caps as well as its use by the public sector, eg for social security payments and other government expenditures.

The central bank is not planning to remunerate the funds in digital wallets. Therefore, the digital rouble will not be used as a monetary policy instrument. However, the introduction of a digital rouble will have an effect on how the central bank implements its monetary policy. Currently, the Russian banking sector is enjoying a moderate liquidity surplus. The central bank manages banking sector liquidity in a symmetric corridor framework, absorbing excess liquidity through its regular auctions. The digital rouble will likely drain liquidity from the banking sector, which will result in a shift to a liquidity deficit. However, both the central bank's approach to monetary policy implementation and the Russian banking sector are well adapted to such changes: during the periods characterised by a liquidity deficit over the last decade the central bank proved that it could retain control over short-term interest rates.

After a liquidity deficit emerges, the central bank will move from absorbing liquidity through deposits and bond issuance to providing liquidity through repos. If required, the central bank can expand its marketable collateral list, which currently contains only top-quality securities and, if need be, it can also initiate auctions for loans secured by non-marketable collateral. According to the central bank's estimates, the volume of potential collateral is sufficient to accommodate banks' demand for liquidity arising from the introduction of a digital rouble.

The switch to a liquidity deficit, in turn, will affect the position of the short-term money market interest rates in the central bank's interest rates corridor. Currently, due to small market inefficiencies the short-term rates have a predominantly negative spread to the central bank's main policy rate. The liquidity deficit means that the overnight money market rates will form in the upper end of the corridor. The factors behind the interest rates' spread to the policy rate are well researched, and once the liquidity situation is settled, the spread will stabilise at some level. Then, the central bank will be able to incorporate this spread into its policy rate decisions so as to set short-term rates on the desired trajectory.

During the transition period there might be some short-term interest rate volatility; however, this volatility is expected to be brief and its effect on the longer rates (and the economy in general) will be quite limited.

The liquidity drain may disproportionately affect large banks that rely more than others on cheap or free funds in their clients' current accounts, taking advantage, inter alia, of the network effect and their central role in payments. The profit margins of these banks will be compressed most prominently, which will even out the competition in the banking sector. Conversely, the banks offering their clients better conditions like remuneration of current accounts and other benefits will be able to attract clients more easily. Overall, since Russia is firmly in positive rates territory, a digital rouble will not compete with banks' liabilities as a means of saving, so the liquidity outflow from the banking sector will likely be moderate and will not result in any form of financial sector disintermediation.

The digital rouble will affect financial stability as well. On the one hand, the introduction of a new secure and sustainable means of payment will further promote financial stability as well as the emergence of new types of financial transactions such as transactions with automatic execution (smart contracts). On the other hand, the digital rouble could pose a threat to financial stability. In the event of an adverse external event a bank run could be facilitated by the existence of an extremely liquid (compared even to cash) and secure form of money. However, in reality such developments are unlikely, for several reasons. First, the central bank will establish transaction caps to ensure that clients cannot convert large sums from bank deposits into digital roubles at once. Second, the Russian banking sector enjoys much higher trust from the public than 5 or 10 years ago. In the previous periods of financial turmoil, the banks witnessed deposit outflows but even they were short-lived and manageable. With time, as both financial inclusion and the resilience of the payment system increases, the risk of "flight to safety" will further decline. Finally, the central bank has a strong lender of last resort framework, under which the banks can quickly borrow liquidity from the central bank against a wide pool of collateral. So overall, the balance of risks and opportunities for financial stability is positive.

Due to the already high level of financial inclusion in Russia, the introduction of a digital rouble will not substantially affect monetary policy transmission. The efficiency of monetary policy may increase somewhat over the long term owing to

greater competition in the banking sector and enhanced financial stability. The decrease in transaction costs will improve economic efficiency. The overall positive impact from the introduction of a digital rouble will increase over time, as its usage increases.

Conclusion

Amid ongoing digitalisation of the financial markets and a rapidly changing payments landscape, central banks are stepping up their efforts dedicated to CBDC research and development. The Central Bank of the Russian Federation has work under way in this area too, as it is aspiring to achieve enhanced quality of products and services, increased competition and financial inclusion. Despite a number of possible challenges related to the introduction of a digital rouble, it provides opportunities for improved financial sector efficiency and financial stability.