

Are there relevant reasons to introduce a retail CBDC in the Czech Republic from the perspective of the payment system?

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Many central banks are currently intensively considering questions related to the possible introduction of a central bank digital currency (CBDC),² examining the need for it, its benefits and risks, as well as technical solutions and legal aspects. The Czech National Bank (CNB) is also examining the issue of the possible introduction of a CBDC available to the general public – a retail CBDC. For this purpose, an internal working group was established in February 2021 whose task is to monitor and analyse trends abroad, in particular in jurisdictions with similar characteristics to the Czech Republic, and to discuss the reasons for the issue of a Czech CBDC and the impact of such step on the central bank, the domestic financial sector and the wider Czech economy.

Our analysis is built on the premise that the introduction of a CBDC in the Czech Republic should be preceded by a thorough assessment of its need and added value in our specific conditions, and that the central bank should consider issuing a CBDC only if it can identify the existence of a serious shortcoming (market failure); a problem or risk that the CBDC could effectively resolve; or room for a material improvement for users or for increasing market efficiency that for some reason is not already realised by the private sector. At the same time, the present two-tier banking system should be retained. The CNB has not taken any decision on the issue of its own CBDC or its possible parameters. At the working level, however, analytical work is continuing to examine the topic from a number of perspectives, including assessment of legal and monetary policy aspects, impacts on financial stability, currency circulation, risk management, etc.

In this article³ we will concentrate on assessing the need for a CBDC for the Czech Republic from the perspective of the domestic payment system. For this assessment, we used a joint report of seven developed economy central banks⁴ and the BIS from October 2020,⁵ which, in Section 2.1 *Payment motivations and challenges*, states a total of seven motivations for investigating the introduction of a CBDC relating to payments. These are stated below (the text of the report in italics, without notes) and

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² 68 central banks have communicated publicly about their retail CBDC work as of January 2022, including the CNB. Most are in the research phase. See Raphael Auer, Giulio Cornelli and Jon Frost, *Rise of the central bank digital currencies: drivers, approaches and technologies*, BIS Working Papers No 880, August 2020.

³ This article expresses its authors' opinions and may not fully reflect the CNB's official position.

⁴ The central banks of Canada, Japan, Sweden, Switzerland, the United Kingdom and the United States, as well as the ECB.

⁵ See Group of Central Banks, *Central bank digital currencies: foundational principles and core features*, October 2020.

there is a subsequent analysis of the extent to which each is relevant, currently and in the near future, for the CNB and the Czech Republic.

1. Continued access to central bank money

In jurisdictions where access to cash is in decline, there is a danger that households and businesses will no longer have access to risk-free central bank money. Some central banks consider it an obligation to provide public access and that this access could be crucial for confidence in a currency. A CBDC could act like a “digital banknote” and could fulfil this obligation.

In some developed, in particular Scandinavian, countries, there has been a gradual increase in the use of electronic payment methods at the expense of cash payments to such an extent that the volume and importance of cash is falling. In such cases, there is a relevant debate about whether and how to replace the functions of cash, and what role a central bank should play in this.⁶

As far as this relates to the Czech Republic, it can be said that the trend of decreasing cash usage in some countries is going in the opposite direction in the Czech Republic (where cash in circulation is still rising both in absolute terms and relative to GDP), despite the Covid-19 pandemic crisis. Trends in currency in circulation in the Czech Republic are comparable to those in the euro area, Poland, the United Kingdom and United States.⁷ The problem of public access to cash is therefore not relevant in the Czech Republic, even after the first waves of the pandemic. Although it seems that the ratio of electronic to cash payments has increased, this has not affected the volume of cash in circulation.

2. Resilience

Cash serves as a backup payment method to electronic systems if those networks cease to function.⁸ However, if access to cash is marginalised, it will be less useful as a backup method if the need arises. A CBDC system could act as an additional payment method, improving operational resilience. Compared to cash, a CBDC system might provide a better means to distribute and use funds in geographically remote locations or during natural disasters. However, significant offline capabilities would need to be developed, both for the CBDC system and any dependencies (eg some availability of electricity for mobile devices).

Counterfeiting and cyber risk present a challenge. Cash has sophisticated anti-counterfeiting features and large-scale issues rarely occur. Theoretically, a successful

⁶ A related sub-question is then whether cash should be retained in parallel to a CBDC or if it should be replaced completely. Based on statements by central banks until now, the complete replacement of cash is not assumed anywhere.

⁷ See also J Duchacek, “What about cash or the Czech Republic with banknotes and coins”, 3 August 2020, www.cnb.cz/cs/o_cnb/cnbblog/Jak-je-to-s-hotovosti-aneb-Cesko-s-bankovkami-a-mincemii/.

⁸ One example is the outage of Visa systems in the summer of 2018: see “The recent outage of Visa card systems affected five million transactions”, *Aktuálně.cz*, 20 June 2018.

cyber attack on a digital CBDC system could quickly threaten a significant number of users and their confidence in the wider system (as it could for a large bank or payment service provider). Defending against cyber attacks will be made more difficult as the number of endpoints in a general purpose CBDC system will be significantly larger than those of current wholesale central bank systems.

The functionality of a CBDC as a backup payment variant, eg in the event of natural disasters, terrorist attacks, cyber attacks on payment systems or on leading banks, or in connection with the Covid-19 pandemic and possible unwillingness of the public to pay in cash for hygiene reasons, has recently been examined by the ECB.⁹ A CBDC could always perform a backup role at least for card systems, which currently dominate retail payments in bricks-and-mortar stores and also predominate in internet payments, because it would operate on a different, non-card infrastructure. If a CBDC's infrastructure were parallel to the existing Czech system of interbank payments (CERTIS) operated by the CNB, it could be a backup for outages of this system or problems on the part of participating banks. A CBDC would be able to perform a much more important role in offline payments, as it would not be influenced by internet outages and would better handle partial electricity outages. In the event of natural disasters, such as the flooding in the Czech Republic in 2002, a CBDC supporting offline payments could, in addition, work as a backup for cash payments.

We are, however, of the opinion that a CBDC as a reserve means of payment would become relevant in the Czech Republic only in the event that cash stops performing this function. Nothing indicates that this will happen and the current legal provisions on cash as legal tender in the Czech Republic should prevent us getting into, for example, the Swedish situation in the near future.¹⁰ Although it can be assumed that the share of cash payments will fall, the number of retailers accepting payments in cash should not fall, so the infrastructure for cash payments (banks accepting cash at branches, the wide postal branch network and the ATM network) should be retained, albeit to a smaller extent.

As regards the offline payments functionality for a CBDC, based on available information it seems that sufficiently secure solutions are not sufficiently user-friendly and require the use of eg special chip cards.¹¹ The standard of comfort and speed to which the population of the Czech Republic is accustomed (contactless payments by a plastic payment card or its digital version in a mobile phone) is not currently provided by these solutions. In order for it to work during unforeseen events, it would have to be an ordinary method of payment to which the population is accustomed and for which retailers are prepared (ie appropriately equipped). For the near future we therefore think that for resilience in the Czech Republic it is more important to concentrate on maintaining the role of cash and reducing the costs of its infrastructure. If needed in the future it could be possible to adopt a sufficiently user-

⁹ See European Central Bank, *Report on a digital euro*, October 2020, p 13.

¹⁰ In the Czech Republic the laws establish a general duty to accept cash with narrowly stipulated exceptions (over 50 coins in one payment, payment using damaged money). Refusing domestic money without a lawful reason is potentially criminally punishable as endangering the circulation of domestic money. At present, the Government Council for Human Rights is proposing that the rejection of cash could also be punished by an administrative fine.

¹¹ See, for example, Bank of Japan, "Bank of Japan research: offline payments for central bank digital currency", 3 July 2020.

friendly offline-capable CBDC solution, should one be developed and implemented abroad.

3. Increased payments diversity

Payment systems, like other infrastructure, benefit from strong network effects, potentially leading to concentration and monopolies or fragmentation. Payment service providers have the incentive to organise their platforms as closed-loop systems. When a small number of systems dominate, high barriers to entry and high costs (especially for merchants) can occur. Where more systems exist, fragmentation may still occur as systems often have proprietary messaging standards, increasing the cost and complexity of interoperability. Fragmentation of payment systems means that users and merchants may face costs and difficulties paying users of other systems. This is inconvenient and socially inefficient. CBDC could provide a common means to transfer between fragmented closed-loop systems (although an accessible fast payment system can also achieve the same end).

The current payment infrastructure in the Czech Republic seems to be sufficient for the provision of electronic payments. The only system for interbank payments in Czech koruna (CZK) in the Czech Republic is the CNB's CERTIS system. A certain limit on its use stems from the fact that the group of CERTIS participants is limited by European legislation (the Directive on Settlement Finality¹²) to credit institutions only. Other providers of payment services, such as payment institutions and electronic money institutions, must make CZK payments through CERTIS participants, which could put up barriers to their business (eg the absence of access to instant payments) and increase their costs. The introduction of a CBDC in the Czech Republic could make electronic payments in CZK available to non-bank payment service providers as well. The current CERTIS restrictions could, nevertheless, be resolved legislatively, in the form of an amendment to the Directive on Settlement Finality, which is currently being considered by the European Commission.

For a number of years, the Czech Republic has been among the global leaders in contactless card payments¹³ and in 2018 the CNB supplemented the card infrastructure with instant payments. At the time of writing, they are used by the majority of leading domestic banks and from June 2021 there has been an increase in the maximum limit on one instant payment from the original CZK 400,000 to CZK 2,500,000, which should enable their use among businesses. The CNB has also recently offered banks the opportunity to maintain a register for the use of a mobile number as an identifier for payment as an alternative to an account number (ie mobile proxy).

It can be concluded that the Czech Republic has an available system of instant payments that, together with cash, ensures sufficient competition for card payments. Rather than thinking about a CBDC, we think it is more appropriate to focus on supplementing functions in CERTIS for the purpose of improving the current

¹² See Directive 98/26/EC of the European Parliament and of the Council on settlement finality in payment and securities settlement systems, May 1998.

¹³ See, for example, "The rise of contactless payments around the globe", Visa, www.visa.com/bs/visa-everywhere/innovation/contactless-payments-around-the-globe.html.

infrastructure for domestic and cross-border payments, which will enable payment service providers to come up with useful innovations and increase the security of payments (it is possible to think, in particular, about the functionality of a request for payment by the beneficiary¹⁴ or checking the name of the intended beneficiary/account owner; the topic of connecting payment systems is also topical).¹⁵ On balance, compared to a well functioning instant payment system, and in cases in which there are no doubts about the use of the data it generates or anti-money laundering (AML) risks, our view is that a retail CBDC does not provide any material advantages.

4. Encouraging financial inclusion

For the central banks contributing to this report, most of the adult population in their jurisdictions can conveniently access electronic payments. However, increasing digitalisation could leave some sections of society behind as potential barriers around trust, digital literacy, access to IT and data privacy concerns create a digital divide. For central banks in many emerging market economies, a key driver for researching CBDC is the opportunity to improve financial inclusion.

Yet for a CBDC to increase financial inclusion, it must address the causes of exclusion, which vary by jurisdiction and are often complex. Given the complexity of this issue and possible underlying obstacles to digital inclusion (eg illiteracy), any CBDC initiative would likely need to be embedded in a wider set of reforms.

Financial inclusion is not generally a problem for the Czech Republic, as a developed economy and a member of the European Union (EU). Access to bank accounts with basic features is a guaranteed right in the EU.¹⁶ An analysis of publicly available data shows that the level of account ownership in the Czech Republic is stable at around 80% of the population. An informative overview published by the European Commission¹⁷ shows that most Czechs who do not have a payment account do not have it because they neither need nor want it. In terms of financial inclusion, the Czech Republic is at an advanced level also according to many studies.¹⁸ The solution to probably the only significant problem in the Czech Republic in the area of financial inclusion, ie making electronic payments available to a substantial number of persons whose bank accounts are garnished due to debt enforcement, should,

¹⁴ A "request to pay". This is a more modern form of direct debit, where the beneficiary sends the payer for confirmation a request for the transfer of a certain amount. In the event this is confirmed by the payer it is executed in the form of an instant payment. In contrast to direct debit, there is no need to obtain the payer's prior consent to the setting up of the account from which the direct debit is to be taken and its limits.

¹⁵ In 2021, the Monetary Authority of Singapore (MAS) was the first in the world to connect the instant payment system it operates in Singapore dollars with the Thai baht instant payment system, and in 2022 it plans to connect it to the systems in Malaysia and India.

¹⁶ Directive 2014/92/EU of the European Parliament and of the Council on the comparability of fees related to payment accounts, payment accounts switching and access to payment accounts with basic features.

¹⁷ See European Commission, Directive on payment accounts - Factsheet 3: Access to payment accounts.

¹⁸ The most detailed analysis is by the World Bank from 2017: <https://globalfindex.worldbank.org/>.

after a number of years, be provided by the newly introduced provisions on a garnishment protection account valid from July 2021.¹⁹ The motive for introducing a CBDC of potentially increasing financial inclusion is thus irrelevant in the Czech Republic.

5. Improving cross-border payments

Cross-border payments are inherently more complex than purely domestic ones. They involve more, and in some cases numerous, players, time zones, jurisdictions and regulations. As a result, they are often slow, opaque and expensive. An interoperable CBDC (ie one that is broadly compatible with others) could play a role in improving cross-border payments.

We do not see any reasons to consider a domestic CBDC in this regard either. Most Czech foreign trade is realised with the euro area and therefore in euros; otherwise the US dollar is used for international trade. Both the euro area and US central banks are only just beginning to think about CBDC issuance, and an interoperable Czech CBDC would have to be developed reactively in response to a digital euro or dollar.

In any case, payments in euros, which are the most important for the Czech economy, are relatively transparent and cheap thanks to the Single Euro Payments Area (SEPA) and related European regulation (including price regulation that sets forth that payments in euros must cost the same as corresponding CZK payments).²⁰ We thus think it is more appropriate to concentrate on the question of transaction speed (ie to support domestic banks in offering instant payments in euros – Sepa Instant Credit Transfer). An interesting possibility which merits a more detailed discussion is the alternative of connecting CERTIS to the ECB's Target2 system. The Swedish²¹ and Danish central banks²² are going even further in this regard, as they are preparing to completely replace the payment systems they operate with the Target2 system. A material improvement in cross-border payments in the medium term should, regardless of a CBDC, be ensured by the activities of the G20 and the Financial Stability Board (FSB), whose plan to strengthen cross-border payments assumes the achievement of the majority of aims set out by 2027.²³

¹⁹ In practice debtors make use of CZK accounts in other countries, for example using Revolut.

²⁰ Regulation (EU) 260/2012 of the European Parliament and of the Council establishing technical and business requirements for credit transfers and direct debits in euros, and Regulation (EU) 2021/1230 of the European Parliament and of the Council on cross-border payments in the Union.

²¹ See Sveriges Riskbank, "The Riksbank wants to use the Eurosystem's T2 and TARGET2-Securities platforms", 23 September 2021.

²² By 2025; see Danmarks Nationalbank, "Migration of Danish kroner to Target Services", 16 December 2020.

²³ See Financial Stability Board, *Targets for addressing the four challenges of cross-border payments: consultative document*, May 2021.

6. Supporting public privacy

A key feature of cash is that no centralised records of holdings or transactions exist. Some have argued that the main benefit a CBDC could bring would be some level of anonymity for electronic payments.

Full anonymity is not plausible. While anti-money laundering and combating the financing of terrorism (AML/CFT) requirements are not a core central bank objective and will not be the primary motivation to issue a CBDC, central banks are expected to design CBDCs that conform to these requirements (along with any other regulatory expectations or disclosure laws).

For a CBDC and its system, payments data will exist, and a key national policy question will be deciding who can access which parts of it and under what circumstances. Striking this balance between public privacy (especially as data protection legislation continues to evolve) and reducing illegal activity will require strong coordination with relevant domestic government agencies (eg tax authorities).

After the terrorist attacks in France in 2015, European AML legislation greatly limited the option of making anonymous electronic payments – up to a maximum of EUR 150 for goods and services in bricks-and-mortar stores and EUR 50 on the internet. Anonymous electronic payments between users are not possible at all. An anonymous CBDC is therefore hard to imagine in the EU. We also think that it would be a marked reputational risk if the central bank wanted lighter AML regulation than that governing commercial banks' digital money for its new digital money, whose issue could be fairly controversial by itself. For the same reasons, we do not think it is realistic to create a CBDC that copies cash in the aspect of user and transaction anonymity. In any case, we do not regard ensuring a certain degree of anonymity as relevant or sufficient motivation for the Czech Republic to consider CBDC issuance.

On the contrary, as regards the question of users' privacy when making payments, it is appropriate to state, in agreement with the BIS,²⁴ that public digital money could protect users' privacy in an increasingly digital economy better than is the case currently for private digital money. It should be possible to develop a CBDC in such a manner that neither private entities nor public authorities (obviously with the exception of authorities active in criminal proceedings), including the central bank, have access to individual payers' and beneficiaries' data. By itself, however, this does not justify issuing a CBDC, if there are no other reasons for it. Also, the data footprint of payments, albeit important,²⁵ is certainly neither the only nor the greatest one that users leave in a digital economy. Users are aware that data generated about their behaviour, interests and forthcoming purchases are consideration for digital services used "for free", as well as discounts in bricks-and-mortar stores or on the internet. Despite this, most of society makes use of such services. In addition to this, data about goods or services purchased can be obtained in other ways than directly

²⁴ See Bank for International Settlements: "CBDCs: an opportunity for the monetary system", *Annual Economic Report 2021*, June. This report deals with the question of privacy and gathering, administration and use of payment data. See the part on *Identification and privacy in CBDC design* and the discussion on "data-network-activities" ("DNA" loop).

²⁵ For example, but not only from the viewpoint of monitoring the success of digital marketing.

from transactional data,²⁶ so a CBDC could only increase privacy partially, but we cannot rule out the possibility that it would not increase it at all (if it created motivation to obtain the data in other ways).

7. Facilitating fiscal transfers

For some jurisdictions, the Covid-19 pandemic illustrates the benefits of having efficient facilities for the government to quickly transfer funds to the public and businesses in a crisis. A CBDC system with identified users (eg a system linked to a national digital identity scheme) could be used for these payments.

Although a CBDC could play a role in making fiscal transfers more efficient (especially in jurisdictions with greater unbanked populations), on its own, it would not be necessary or sufficient. A linked digital identity system would be a necessity to realise real improvement. If such a system were in place, the incremental benefit of CBDC over transfers to (eg) commercial accounts, etc could be small, depending on designs. Additionally, if fiscal transfers were made with CBDC there is a risk of blurring the division between monetary and fiscal policy and a potential reduction in monetary policy independence.

We are of the opinion that the topic of how CBDC could make fiscal transfers more effective is one for countries with larger unbanked populations, which is not the Czech Republic's case. Fiscal transfers can be performed through existing bank accounts or using postal services.

Conclusion

In this document we assessed the need for the introduction of a CBDC for the Czech Republic based on seven key payment system viewpoints and arguments that are often stated in this area as possible benefits of CBDC issuance and reasons for its introduction. In the Czech Republic, the quantity of cash in circulation is growing and its acceptance is ensured by relatively strict legal tender provisions. Therefore, it is possible to state that the problem of public access to cash is not relevant. Cash also performs the function of a fallback means of payment and the current payment infrastructure seems to be sufficient for the provision of electronic payments. The Czech Republic has a high-quality and well functioning instant payment system and, at the moment, it is more sensible to concentrate on additional improvements to the current infrastructure than on creating a brand-new system for a CBDC. In addition, residents have a legally guaranteed right to a basic payment account, and improvements in access to electronic payments are achievable not only through the introduction of a CBDC, but also through legal provisions on garnishments. The financial inclusion motive for CBDC introduction is therefore absent as well. The question of use of a CBDC for the facilitation of cross-border payments is not topical, as it would have to be developed reactively, in connection with the establishment of

²⁶ Google obtains these data automatically, eg from emails in the Gmail service: see J Winston, "Google keeps an eye on what you buy, and it's not alone", Fast Company, 8 June 2019, www.fastcompany.com/90349518/google-keeps-an-eye-on-what-you-buy-and-its-not-alone.

a digital euro or US dollar. With regard to existing EU legislation on combating money laundering and terrorism financing, the introduction of an anonymous CBDC in the Czech Republic is inconceivable. In contrast to this, it is true that central bank digital money could protect private users more than digital money at present, but there is the question of whether this would, in practice, be a sufficient reason for the introduction of a CBDC. We can conclude that from the perspective of payments in the Czech Republic there are currently no convincing reasons for the issuance of a retail CBDC. With regard to dynamic trends in this area, it is nevertheless appropriate to continue to carefully monitor further activities by central banks and their CBDC projects and to be prepared, if necessary, to increase the attention paid to considerations about a possible future CBDC issuance in the Czech Republic.