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Economic Comment

On central bank digital currencies

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In connection with the progress on the digital euro, as well as the global developments related to digital currencies, we explain in this text what central bank digital currencies (CBDC) are, why central banks are working on them, and what their issuance may entail. We explain that the innovativeness of CBDCs stems from their status as a widely accessibly digital payment instrument which is simultaneously a central bank liability. We also clarify that central banks are working on CBDCs in order to maintain the relevance of public money in an increasingly digital economy. Finally, we argue that even though issuing a CBDC may lead to an outflow of deposits from the banking sector, the actual impact of CBDC on the banking sector will depend on the CBDC's design and need not be negative.

Introduction

On October 30th, the European Central Bank announced that the digital euro project had entered the next phase – in 2026, the digital euro will be established legislatively, and in 2029, its first general issuance may take place. At the same time, China has been running a pilot programme for the digital renminbi since 2020, while in the Bahamas, Jamaica, and Nigeria digital currencies have already been officially introduced into circulation.

Although central bank digital currencies – or CBDCs – are increasingly moving from the realm of academic debate to real payment solutions, they may still remain unclear to many – after all, digital money and payments are nothing new.

This text aims to briefly explain what central bank digital currencies are, why central banks are working on them, and what their introduction may entail.

The essence of CBDCs

At the outset, it is worth noting that the term “digital currency” is misleading. As mentioned above, digital solutions are nothing new, and the innovativeness of CBDCs does not lie in their digital nature. What distinguishes CBDCs from other forms of money is the fact that they will be a digital means of payment that simultaneously constitutes a central bank liability.

This solution is innovative because, in most global economies, including Poland, public money – i.e., money issued by central banks – is currently available to individuals and most legal entities only in physical form, namely cash (coins and banknotes). Public money in digital form exists as reserves at the central bank, but these can only be held by commercial banks or certain selected institutions.

Money held in accounts maintained by commercial banks is not, contrary to popular belief, official public money, but private money issued by commercial banks and exchangeable on demand one-to-one for cash. In Poland, this convertibility is supported by additional state guarantees, primarily through the Bank Guarantee Fund.

The introduction of CBDCs would mean that everyone, not just commercial banks, could “hold reserves” at the central bank. For this reason, one of the leading participants in the CBDC debate, Professor Dirk Niepelt of the University of Bern, argues that a better name for CBDCs would be “reserves for all” (Niepelt, 2020).

Why do central banks need CBDC?

Central banks are considering introducing CBDCs primarily for one reason – to maintain the relevance of public money in an increasingly digital economy.

This motivation stems from the fact that public money plays a fundamental role in the current monetary system. As long as it is widely used and accepted, all forms of private

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money used in a given economy or monetary area are uniform and share a common unit of account equal to the unit of public money.

Thanks to these two common features of different forms of money – uniformity and denomination in the national unit of account – central banks can effectively conduct monetary policy and influence their economies. Their ability in this regard arises from the fact that central banks control the supply and interest rate of the national unit of account, i.e. public money.

As long as public money is widely available, accepted, and used, the current monetary system will continue to function in its present form. However, if public money were to lose its current significance, the monetary system could undergo a transformation.

Challenges of the digital world

The diminishing role of public money has become the subject of economic research and debate due to observed and anticipated changes associated with the ongoing digitalisation of the economy. Its most visible manifestation is the declining use of coins and banknotes in everyday transactions. However, economists also note the ease of creating and using new non-bank forms of private money – not only cryptocurrencies such as Bitcoin, but also currencies that could be created specifically for use on particular social and commercial platforms (Brunnermeier, James and Landau, 2019).

These phenomena attract attention because a potential increase in competition from new forms of private money (or foreign digital public money), combined with a continued decline in the use of physical public money, could theoretically lead to fragmentation of the national monetary system – the use of units of account other than the official national unit of account to express prices and conclude contracts, as well as the disappearance of uniformity among different forms of money. Such a situation would mean a reduction in a country's monetary sovereignty, a decline in the effectiveness of its central bank's monetary policy, and a decrease in the efficiency of the transaction system (Brunnermeier and Landau, 2022).

A wake-up call that these concerns are not merely academic speculation was Facebook's 2019 plan to create the global cryptocurrency Libra (later known as Diem). Facebook's intentions attracted so much attention that they triggered almost immediate announcements of a thorough review of Libra by the Financial Stability Board, the Fed and the Bank of England, the creation of a special G7 forum dedicated to risks associated with cryptocurrencies, and a call by the US House of Representatives for Facebook to immediately agree to a moratorium on any movement forward on Libra (Zetzsche, Buckley and Arner, 2021). Although Libra was ultimately not launched – the project, under the name Diem, was sold in 2022 to California's Silvergate Bank, which wrote it off in 2023 – it highlighted the potential competitiveness of private currencies against national currencies and the associated risks.

The introduction of CBDCs is intended as a way to safeguard the position of public money against new digital currencies – to ensure that everyone has access to safe public money adapted to the needs and capabilities of a digital payment system.

CBDCs – the end of cash?

At this point, it is worth briefly addressing a frequently raised concern about CBDCs: will their issuance mean the end of cash payments? The motivation for CBDC work outlined earlier suggests the answer – no, CBDCs will not replace cash.

From the perspective of central banks, it will be more advantageous to offer both cash and CBDCs, as public money will thus be able to meet the payment needs of a larger number of people. Greater satisfaction with public money will, in turn, strengthen its position.

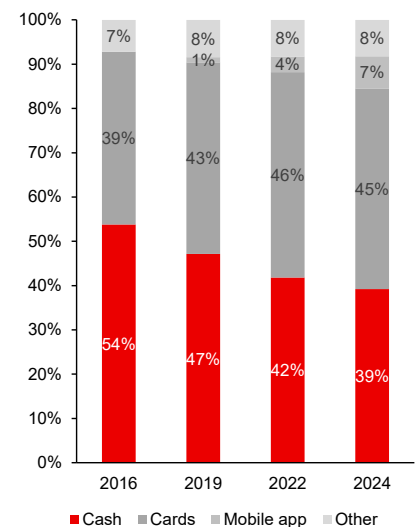
Leading central banks, including the ECB, the Fed, the BoE, the SNB and the BoJ, have also expressed no intention of replacing cash (BIS, 2020).

Risks and uncertainties

Nevertheless, the introduction of CBDCs involves uncertainty and potential consequences. From an economic perspective, the greatest risk associated with launching CBDCs is their impact on the banking system.

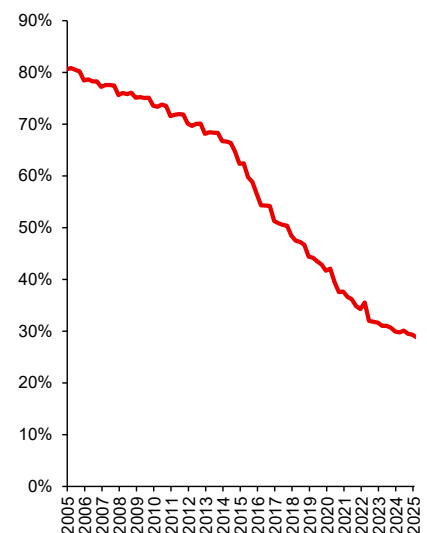
Since CBDCs would be an alternative to traditional bank accounts, their issuance could lead to an outflow of deposits from bank balance sheets. Depending on the scale, this could translate

Shares of payment instrument in the value of POS transactions in the euro area, results from the ECB's SPACE study



Source: ECB, Santander

Share of ATM withdrawals in the value of card transactions in Poland, %



Source: NBP, Santander

into reduced liquidity in the banking sector and a decline in lending activity. Lower lending activity would, in turn, have repercussions for the entire economy.

To address this risk, EU legislators asked the ECB to make a preliminary estimate of the potential scale of deposit outflows from the euro area banking sector as a result of introducing CBDCs. In its estimates, the ECB assumed that if CBDCs were issued, maximum holding limits would apply, ranging from EUR500 to EUR3,000.

Based on these assumptions, the ECB's preliminary results indicate that the introduction of CBDCs would not negatively affect the euro area banking sector – any outflow of deposits would not exceed their expected inflow in the coming years, related to the ongoing digitalisation of payments. Moreover, even assuming that the inflow of funds driven by digitalisation does not occur, the potential outflow of deposits from the banking sector would amount to just over EUR100bn, or around 0.3% of the euro area banking sector's assets.

These results were, of course, obtained under the assumption of limits on funds held in CBDCs. Nevertheless, it is worth noting that some economists argue that even without such limits, CBDCs need not negatively affect the banking sector. For example, Markus Brunnermeier and Dirk Niepelt (2019) argue that if deposit outflows from commercial bank balance sheets were offset by additional funding from the central bank (which would balance the increase in liabilities caused by CBDC issuance on the asset side), not only would there be no decline in banking sector liquidity, but its stability would actually increase, as one of the largest depositors of commercial banks would become the central bank itself.

Ultimately, the potential impact of CBDCs on commercial banks and the economy will depend on the creativity of the legislators introducing them – the application of appropriate mechanisms can limit, if not completely eliminate, the risks and uncertainties associated with issuing digital currency.

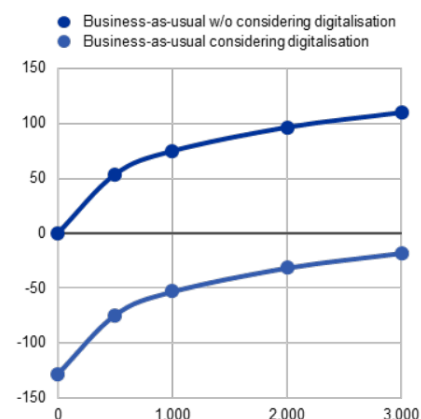
CBDC in Poland

Since the plans and analyses related to CBDCs discussed so far concern only foreign countries, mainly the euro area, it is worth concluding with how the National Bank of Poland views CBDC.

According to the NBP's official position, the Polish central bank currently sees no convincing justification for issuing a CBDC, as it does not perceive any specific needs of consumers or businesses that could not be met by payment service providers. Nevertheless, the NBP emphasises that it continuously monitors the progress of other central banks in implementing CBDCs and conducts its own analytical work on issuing digital currency (NBP, 2021).

Importantly, the NBP stated that the commencement of CBDC issuance in other countries, especially Poland's trading partners – primarily in the euro area – will be of significant importance. This may mean that further progress on the digital euro could prompt the NBP to reassess its stance on issuing a "digital zloty".

Outflow of deposits from the banking sector caused by issuing the digital euro, estimates of the ECB



On the X axis – assumed maximal holding limits.
On the Y axis – outflow of deposits from the euro area's banking sector, in EUR bn; negative values indicate that the outflow would not exceed the inflow of deposits caused by the ongoing digitalisation of payments.
Source: ECB, Technical annex on the financial stability impact of the digital euro

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