

Digital central bank currency: Curse or blessing?

Berlin, 19th February 2020

Following the announcement of Libra and with the start of Christine Lagarde's presidency of the ECB, the ECB's efforts in the area of „Central Bank Digital Currency“ (CBDC) have noticeably intensified. The basic idea behind CBDC is the transfer of physical cash into the digital world. The chief economists of the Sparkassen-Finanzgruppe emphasise that before introducing digital central bank money, the effects on society as a whole must be critically reflected:

- The impacts of a CBDC system on the banking and financial sector, the social acceptance and the monetary policy options of the central bank depend crucially on its design.
- Central banks can best achieve their objectives if they are independent. In addition to political and financial independence, this also applies to technical autonomy. This independence must not be violated by the concrete design of digital currency.
- The stability and efficiency of the financial system must be preserved. A CBDC system would be at least a partial substitute for fiat money. However, the creation of digital central bank money must not jeopardise the intermediation function of the banking system. This also applies to the promotion of entrepreneurial creativity, for example, by granting loans.

Authors

Uwe Burkert - LBBW
Uwe Dürkop - Berliner Sparkasse
Jochen Intelmann - Haspa
Dr. Ulrich Kater - DekaBank
Christian Lips - NORD/LB
Dr. Jürgen Michels - BayernLB
Dr. Gertrud Traud - Helaba
Prof. Dr. Carsten Wesselmann
- Kreissparkasse Köln

Coordinators

Dr. Reinhold Rickes
Reinhold.Rickes@dsgv.de
Dr. Sonja Scheffler
Sonja.Scheffler@dsgv.de

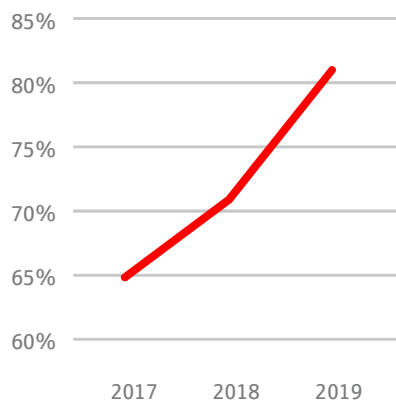
Digital central bank currency: Curse or blessing?

Zeitgeist: digital

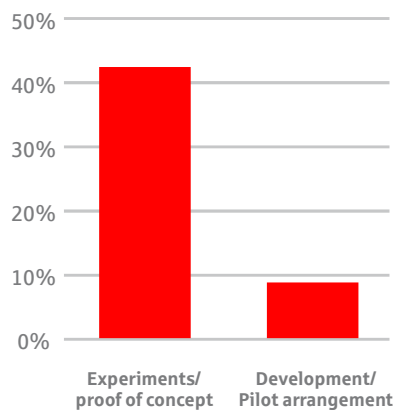
Also in response to the emergence of Bitcoin and other cryptocurrency projects, the first central banks began analyzing the possibility of introducing their own digital currency as early as 2014. The announcement of Libra in summer 2019 has further accelerated this process. According to the Bank for International Settlements (BIS), around 80 percent of the world's central banks are currently investigating the implications of introducing CBDC. About 40 percent of them have already taken the step from basic research to more concrete investigations, and almost 10 percent have already developed pilot projects.

Central banks address the issue of CBDC increasingly

Central banks' engagement in CBDC,
in percent of respondents



Type of Work in addition,
in percent of respondents for 2019



Sources: Central Bank Survey on CBDC, BIS Paper No 107, January 2020

The ECB is also intensifying its CBDC efforts. At her first press conference as ECB President in November 2019, Christine Lagarde announced that she would initiate an internal ECB task force and further advance analyses of CBDC. She made the following specific comments on the CBDC ambitions: „My personal conviction is that given the developments we see [...] in the stable coins projects, [...] we better be ahead of the curve if that happens. Because there is clearly a demand out there that we have to

respond to“.

Sweden and China are pioneers

The Swedish central bank (Riksbank) has been analysing the introduction of its own digital central bank currency since 2017. The Chinese central bank (PBoC) announced in autumn 2019 that it would introduce its own digital central bank currency in the near future. In addition, other smaller central banks (in Cambodia or on the Marshall Islands) have also announced the timely issue of digital central bank currency.

It is in the spirit of the times: More and more central banks are working on the introduction of their own digital central bank currency. 2020 could, therefore, be the year in which the first decisions on digital central bank currencies are made. The decisive factor will be how the definitions and delimitations of CBDC are chosen. Only then will it be possible to decide to what extent CBDCs can be included in the monetary policy strategy considerations.

Digital central bank currency: What is it?

In simple terms, digital central bank money is digitised cash. The ECB defines CBDC as „a liability to a central bank that is made available to individual citizens in digital form“ (ECB, 2019). Thus, CBDC would represent a third form of centred central bank money – alongside banks‘ reserves at the ECB and physical cash. Furthermore, a CBDC can be classified according to the following design features:

Definition of CBDC crucial

→ **Operational facility**

A CBDC can be either account-based or value-based. In the case of an account-based CBDC, customers keep their funds in an account with the central bank. In the case of a value-based CBDC (value- or token-based CBDC), the CBDC would be issued directly into the real economy as a value voucher, similar to physical cash.

→ **Access**

Access to CBDC can be restricted to certain actors in an economy, such as banks or other financial institutions. In this case, the CBDC is referred to as „wholesale CBDC“. A CBDC that is available to the general public is referred to as a „Retail CBDC“.

→ **Technology**

A CBDC can be issued via a distributed database (Distributed Ledger

Technology, DLT) or via a conventional centralized database system. Releasing via a DLT would also lead, among other things, to the CBDC being made more programmable and to the use of Euro-listed Smart Contracts, for example. The on-chain (i.e. within a DLT implementation) or off-chain (interlinked with other ECB mechanisms) versions are currently the subject of controversial discussion, particularly in technical circles, and are also relevant with regard to questions of technical independence of the central bank and technological neutrality.

→ **Interest Payment**

A CBDC can be either interest-bearing or non-interest-bearing. A non-interest-bearing CBDC would not generate interest income and would be similar to physical cash. Negative interest rates are also possible.

Motives of the central bank

The central banks' motives behind a CBDC introduction are complex. First of all, the zeitgeist is also a driving force. In order not to get into a reactive position too much, an active approach of the central banks to the topic is undoubtedly advantageous.

But the motives also range from the provision of „Programmable Money“ (which can be used in the area of the „Internet of Things“) to improving the efficiency of cross-border payments (which would require the compatibility of the respective CBDC) to the competitive implications of ensuring competitiveness in the „Internet of Things“, in smart contract automation and globally secure value transactions.

Notice efficiency and stability

But above all, monetary policy and financial stability considerations (overcoming the practical zero interest rate limit and reducing the dominance of fiat money) are also crucial. The effects of monetary policy and financial stability in particular must therefore be examined and critically discussed. Depending on its design, CBDC can also serve to extend the mandate of the central bank. If the traditional creation of money by the banking system is circumvented by directly issuing digital central bank money to citizens, this can have severe consequences for financial stability, the functioning and efficiency of the banking system.

The fact that CBDC can promote the issuance of digital money through increased digital use – primarily through payment obligations – but can

also facilitate the expansion of a central bank's power is possibly demonstrated by the announcement of the Chinese central bank (PBoC) in autumn 2019 that it will introduce its own digital central bank currency in the near future. Here, too, the aim is to reduce dependence on the financial sector and to be able to offer digital transactions in central bank money. However, the objective should also be to monitor citizens' financial transactions even more closely and to „bundle“ them at the central bank.

On the other hand, it should not be in the interest of the European Central Bank to create instruments to circumvent the banking system and thus to change the money order in a severe way. Initial ECB publications also point in this direction. In December 2019, the ECB published a paper on a concrete CBDC prototype based on a DLT, which is intended to enable partially anonymous payments (ECB, 2019). Just one month later, another working paper followed, proposing a CBDC system to prevent large outflows from the financial sector in order to ensure financial stability (Bindseil, 2020).

However, there is a risk that the ECB could further expand the expansionary scope of its monetary policy with the discussion and possible introduction of digital central bank money. For example, discussions on further in-depth purchases of corporate loans or even shares up to the point of making money available to citizens via crypto-assets for no consideration (helicopter money) show the limits within which monetary policy has moved.

Central banks can best achieve their objectives if they are independent. In addition to political and financial independence, this also applies to technical autonomy. Particularly in areas such as digital central bank currencies, wherein a certain sense new ground is being broken, particular care should be taken to ensure that independence is not violated by the concrete design of digital currency.

*New dimension:
... technical independence from
Central Banks is more and more
important!*

What does CBDC mean for citizens and businesses?

A digital form of cash that offers similar convenience to a traditional bank account automatically competes with deposits. For the individual saver, CBDC provides a decisive advantage: the money saved is central bank money and not bank counter money, i.e. a central bank fully guarantees the security of the funds. This additional security is likely to play a significant role for customers in financial crises in particular since, despite

the existing security systems, there will always be residual doubts about the stability of the banking system. This could have two consequences: First, households and companies could reduce their deposits with banks in favour of CBDC and second, in times of financial uncertainty, they could withdraw a more substantial amount of deposits from banks and park „safely“ with the central bank.

The first effect is called disintermediation. Disintermediation is the dissolution of the intermediary function of commercial banks and savings banks between the central banks and citizens and enterprises. Ultimately, the balance sheet of the central bank is extended at the expense of a balance sheet contraction at the commercial banks. Besides a supposed stabilisation of the financial sector, this would have negative consequences. Banks would also be able to grant fewer loans because of the reduced deposits. However, it is highly unlikely that the central bank itself would enter into the lending business, as it lacks the expertise and the necessary risk appetite compared to the banking sector. This could lead to a shortage and misallocation of credit. In addition, banks would come under pressure, as they would be deprived of a cheap source of financing by reduced demand deposits. Possible additional costs could be passed on to borrowers and lead to a slowdown in lending.

Dissolution of established economic structures must be avoided

The second effect is known as a bank run. Tensions in the financial sector, such as the threat of bank failure, would encourage players to convert their deposits from risky bank money into central bank money as quickly as possible. Such behaviour would lead to additional liquidity being withdrawn from already troubled banks, making insolvency more likely. Although bank runs could of course also occur without CBDC, these are likely to be much more severe with digital central bank money: investors can easily exchange their money from home and do not have to worry about the safekeeping and security of their money, as the amount is simply moved digitally from one account to another.

CBDCs can, therefore, have broad implications for the structure, stability and efficiency of the financial sector. In the design of CBDC it is therefore crucial to achieve cost-reducing effects for payment transactions – such as lower transaction fees and fast transactions – while at the same time minimising disintermediation effects. To achieve this goal, different approaches are currently being discussed. Ulrich Bindseil, the ECB’s Director-General for Market Infrastructures and Payments, proposes to offer CBDC in two different classes with varying rates of interest. Investors could then hold CBDC in Class 1 only up to a specified maximum amount. Anything above that would automatically be assigned to Class 2, in which investors would have to accept a significantly lower interest rate. Thus CBDC would continue to be attractive as a means of payment but would be unsuitable

Cost-reducing effects are necessary

as a store of value. In concrete terms, this means that households would only be able to park part of their money safely and without loss of value at the central bank. Just as much as is generally required for payment transactions Bindseil estimates this limit at around € 3,000. Anything more than that would be rewarded at a much lower interest rate, which would then be negative in times of money market interest rates at or near the zero limits.

A possible path for the ECB

Initial considerations by the ECB show that it is aware of the issue of anonymity, privacy and efficient cooperation with banks and savings banks, particularly in the field of payment transactions, and that it wants to make this possible. At present, however, the differences in cash would still be considerable. Anyone wishing to carry out a crypto-Euro transaction would also have to have a digital wallet or account for it.

The ECB is also keeping a close eye on the implications of introducing CBDC for banks. The considerations of a two-stage CBDC system with possibly very negative interest rates for those CBDCs that are not used as payment instruments but as a means of preserving value make it clear that the ECB does not want to cause a large-scale withdrawal of deposits from the financial sector. Nevertheless, an inevitable shift in the bank/central bank ratio seems likely.

*Anonymity and transparency
ensure future viability*

A two-tier system could also emerge between the ECB and the commercial banks. For example, the ECB does not seem to be interested in handling payment processing with CBDC itself and storing the cryptographic keys for households. In the future, banks could take over or have to take over these tasks (if it became necessary for regulatory reasons). This gives the crypto custody licence introduced in Germany this year additional significance. This could ultimately be necessary not only for the safekeeping of Bitcoin and Co. but also for the protection of CBDCs. The software solutions that have been available in the Bitcoin world for years, for example, for digital wallets, could ultimately be used not only for the secure custody and sending and receiving of Bitcoins for customers.

In the proof of concept for a digital central bank currency published on December 17, the European Central Bank has described the balancing act between anonymity and transparency in digital transaction traffic to guarantee the requirements of data protection while at the same time complying with money laundering guidelines. The project, developed on the DLT platform Corda, aims to ensure the preservation of pseudonymity

with the requirements of the fight against money laundering and terrorism in a two-stage payment model. With this proof of concept, a simplified payment system is being tested that is effective for small transaction amounts and protects the anonymity of the person. For higher prices, anti-money laundering and anti-terrorism procedures with corresponding proof of identity of sender and recipient are required. This is intended to model the payment transactions of a digitalised economy. The ongoing digitization of the economy poses a major challenge to the payment ecosystem and requires a balance between enabling a certain degree of privacy in electronic payments and compliance with anti-money laundering and anti-terrorist financing regulations.

Overall, social acceptance – the freedom that comes with the primacy of responsibility – which means combining decentralized banking structures with individual accountability, openness to innovation and control, is crucial for the introduction of CBDC. At present, there are still numerous reservations that need to be examined in detail. For example, the appeal of technical feasibility is one thing. And, of course, there is also high pressure from the paths taken by central banks from countries with different cultural backgrounds, for example in terms of anonymity, openness, efficiency and independence. Europeans cultivate an open, independent central bank culture. Cash is widely valued as a means of payment. And this valuable trust-giving asset must not merely be called into question. The social acceptance of digital central bank money depends heavily on its design and, above all, on its impact on society as a whole.

Crucial: freedom and responsibility!

Disclaimer

The present position paper of the Chief Economists does not necessarily correspond to the attitude of the DekaBank or the attitude of the respective Landesbanken and Savings Banks or the DSGV.

Imprint

Published by

Deutscher Sparkassen- und Giroverband
Abteilung Volkswirtschaft, Finanzmärkte
und Wirtschaftspolitik
Charlottenstraße 47
10117 Berlin
Telefon: 030 20225-5303
DSGV-Volkswirtschaft@DSGV.de
www.DSGV.de

Editorial Deadline

19th February 2020

Layout

Franz Metz, Berlin

Photography

Page 1: pixabay/CF7890

Management

Pia Jankowski – DSGV
Director
Head of Economics, Financial Markets
and Economic Policy
Pia.Jankowski@DSGV.DE

Dr. Reinhold Rickes – DSGV
Head of Economics
Economics, Financial Markets and Economic Policy
Reinhold.Rickes@DSGV.DE

Remark

You can access this document at
<https://www.dsgv.de/en/statements.html>

ISSN

2509-3851