

Digitalisation of the euro: Seizing opportunities, limiting risks

Vision for a European Monetary System of the Future

Position of the National Association of German Cooperative Banks (BVR)
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Bundesverband
der Deutschen Volksbanken
und Raiffeisenbanken · BVR





Foreword

New money for Europe's digital future

With the digitalisation of all areas of life, new necessities are emerging in society and the economy. This poses challenges for today's payment systems. Online retailing, for example, is growing rapidly, whilst digital and mobile payment methods are on the rise in bricks and mortar retail. In industry, processes are being developed which, under the buzzwords, "Industry 4.0", "Internet of Things" and "Machine-to-Machine Learning", amount to full digital automation. Using so-called "Smart Contracts" and "Distributed Ledger Technology (DLT)", machines can interact with each other without human intervention. In addition, infrastructure will be interconnected, for example in the areas of energy and mobility, resulting in faster and more individualised payment options for citizens.

With increasing digitalisation, discussions about the further development of money are also on the rise. The European Central Bank (ECB), for example, is working intensively on a digital euro that could be available as a new means of payment as early as 2025. In parallel, the private sector is pushing ahead with work on an innovative form of money for the industry (so-called "tokenised commercial bank

money"), which can satisfy the need for efficient payment transactions on the DLT in our currency – the euro – for both the financial and the real economy.

The creation of new forms of money is attractive. However, with all such changes, one must always bear in mind that this is a fundamental change to a tried and tested monetary system, which is not without risk.

With this paper, we contribute to the current debate on the digitalisation of the euro by advocating for a European monetary system of the future that offers major benefits for society and the economy whilst limiting risks. We advocate the creation of three new forms of money, each of which, as "digital twins", mirrors the characteristics of existing forms of money – cash, bank money and central bank deposits – and develops them further for the age of digitalisation. Such an innovative monetary system would give Europe a leading position in the digital world and promises the greatest benefits for citizens.

Realising such a monetary system of the future will require a joint effort by the ECB, the EU institutions, the financial industry and the business community as a whole. So that the project of expanding our monetary system will be a success, lawmakers must create the necessary regulatory and legal frameworks.



Marija Kolak
President of the Board of Managing Directors



Dr. Andreas Martin
Member of the Board of Managing Directors



Daniel Quinten
Member of the Board of Managing Directors

What might a future monetary system look like?

Private and state forms of money have complemented each other since the emergence of state central banks. In addition to the cash issued by the central banks and the money created by commercial banks (deposits with banks), banks have accounts with the central bank. These are mainly used for interbank transfers, e.g., in capital market transactions and payment transactions. The coexistence of private and state forms of money with different and delineated roles in the monetary system represents a cornerstone of our social market economy.

The most important form of money for private households and the economy is deposits at banks (bank money). In 2020, there were 109 million checking accounts in Germany with a balance of 1,750 billion euros. Beyond that, cash amounting to around EUR 330 billion was held. In terms of the number of transactions, cash still leads in Germany, accounting for around 60 % of transactions, but in revenue, the share is significantly lower at about 30%. Credit institutions also have accounts with the central bank, with balances amounting to a good EUR 1,000 billion. These balances are used, amongst other things, for money- and capital-market transactions between banks, or between banks and the central bank. The magnitude of these balances is a side effect of the Eurosystem central

banks' extensive securities purchase programs in recent years.¹

Today's monetary system should be further developed for the age of digitalisation. However, a single Digital euro that combines the core properties of existing forms of money would entail considerable risk for the financial system – and thus also for the economy. If, for example, the ECB's Digital euro can be used on a large scale for investment purposes, and thus does not include a narrow holding limit for citizens, there would be a risk of a massive intermingling of today's forms of money and therefore a shift from bank deposits to central bank money. Banks would then be enabled to rely much less heavily on deposits to refinance their lending business. They would have to refinance themselves on the money or capital markets. Since an outflow of funds into the ECB's Digital euro would reduce the supply of funds, either lending would be restricted and/or lending would be conducted at higher interest rates. In either case, there would be serious negative consequences for the real economy. It follows that creating innovative forms of money is not an end unto itself, but must be assessed in terms of its overall impact on Europe. An ECB Digital euro must deliver clear social and economic added value whilst underpinning the foundations of our monetary system.

We therefore advocate that the three existing forms of money be supplemented by “digital twins” for use in the digital world.

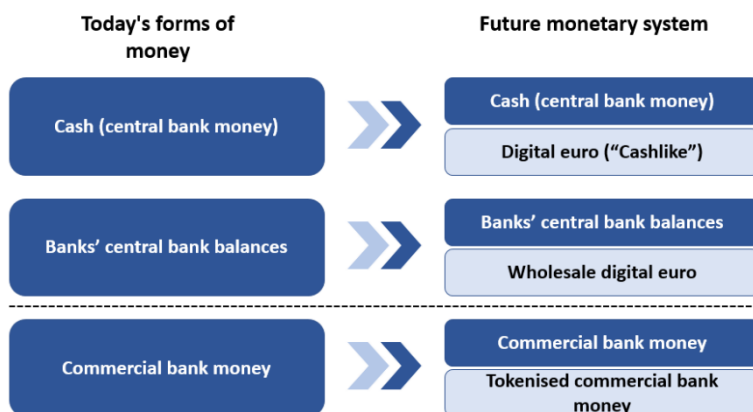


Figure 1: A monetary system of existing and new forms of money

Establishing “digital twins” will future-proof the euro without fundamentally changing the monetary system. In the following sections, the three new forms of money will be introduced and discussed on the basis of which characteristics and covered use cases they would create the greatest benefits. The concept advocated here is based on the July 2021 whitepaper by the German banking industry committee “Europe needs new money – The ecosystem of CBDC, tokenised commercial bank money and trigger solution”.²

¹ Fakten zum Zahlungsverkehr in Deutschland 2020 (Facts on Payment Transactions in Germany 2020), Deutsche Bundesbank ([Link](#)); Cash hoarding by German households – how much cash do they store and why?, Deutsche Bundesbank, Monthly Report,

July 2020; Cash: facts and figures, Deutsche Bundesbank, July 2022; Deutsche Bundesbank, Monthly Report, November 2022.

² [German banking industry committee, Europe needs new money](#)



Digital euro (“Cashlike”): cash payment for the digital world

The ECB is pressing ahead with deliberations on the introduction of a Digital euro. According to ECB President Christine Lagarde, the Digital euro could be in circulation as a means of payment as early as 2025; its design is to be defined as early as autumn 2023. With the Digital euro, the ECB seeks to secure Europe's digital sovereignty. Europe is to become independent of foreign payment providers in the future. At the same time, the aim is to ensure that citizens continue to have direct access to central bank money should cash use continue to decline over the course of digitalisation.

In the BVR's view, the Digital euro, as planned by the ECB, should primarily be a supplement to today's cash, used by citizens and distributed by banks via their proven intermediary functions. As the “digital twin” to cash, a Digital euro (retail CBDC) would have the greatest added value if it were available to private individuals in the euro area for everyday payments in the same way that cash is.

In order for the various players, especially the private and credit sectors, to fulfil their tasks in the future monetary system, there needs to be a clear delineation of what an ECB Digital euro should do, what it should not do, and where it leaves room for private initiatives.

As a digital form of cash, the BVR believes that the Digital euro should be based on coins and bills

- to enable anonymous payments and be usable offline – even during power outages and without an Internet connection – and be free of charge for citizens. The ECB's October 2020 consultation on the Digital euro revealed that personal data protection is a key concern for the majority of individuals.³
- issued by the ECB as the central bank and paid out digitally by credit institutions to citizens via their existing bank account (see Figure 2)
- available in electronic purses (“wallets”) provided by credit institutions (one per person).
- Be bearer-based, so that when a Digital euro is passed on, a payment is completed

directly without further clearing and thus quickly.



Digital euro: definition of the term

The term “Digital euro” is often used to distinguish it from physical cash. However, the term is misleading in that only cash is not yet digital today. The term “Digital euro” is unfortunately used in public debate for different forms of money.

In the literature and in ECB publications, the term “Digital euro” usually refers exclusively to the so-called **Retail CBDC (Central Bank Digital Currency)**. This would be a form of central bank money, comparable to cash, available to citizens and, depending on its design, also to companies as a means of payment – only no longer physically, but digitally in the future. The extent to which novel technical concepts will be used in the ECB's Digital euro has not yet been decided.

In addition, the introduction of a so-called **Wholesale CBDC, or wholesale Digital euro**, is also occasionally translated as Digital euro. However, comparable to banks' balances at the central bank, this would only be available for clearing within the financial system and would not be available to private households and companies.

The **tokenised commercial bank money** is a third evolution of the euro, which is an innovation as tokenised money as a whole. However, the tokenised commercial bank money is not a form of central bank money, but a further refinement of today's bank deposits on a new technological basis. These are thus liabilities to the banks and savings banks, not the European Central Bank.

³ European Central Bank, Eurosystem report on the public consultation on a digital euro, April 2021 ([Link](#)).

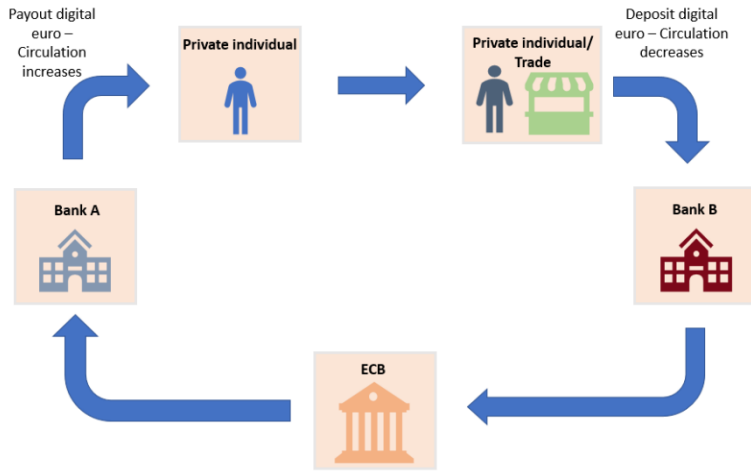


Figure 2: The cycle of a digital euro (“Cashlike”)

The Digital euro should include an upper limit in terms of amount (along the lines of a full wallet)⁴ for each consumer. A clear and low cap of 500 euros would support two important public goals at the same time: First, a cap is consistent with the role of banks as financiers in the economy. A strong outflow of bank deposits into the Digital euro would negatively impact banks' lending capabilities. Sudden shifts from bank deposits to Digital euros could also jeopardise financial stability. Second, a low limit limits the potential for money laundering and terrorist financing, and reconciles this with payment privacy.

The holding limit should be adjusted regularly over time in line with price developments; such a process could be established by law. At the same time, enshrining the ceiling in law would have the advantage that it could not be changed without parliamentary approval, which would increase its democratic legitimacy.

For adoption of the Digital euro in retail, comparable to checkout systems and cash logistics for the former cash, a competition-driven market must be enabled. Banks and companies must be able to provide technical integration and logistics services for a fee.

⁴ For comparison: The average amount in German wallets in 2016 was 103 euros; the amount of cash per household in Germany in 2018 was around 1,360 euros; Source: Henk Esselink et al., The use of cash by households in the euro area, ECB Occasional Paper 201, 2017; Deutsche Bundesbank, Cash hoarding by German households – how much cash do they store and why?, Monthly Report, July 2020.

⁵ Source: Stephan Paul et al. (2021): Digitaler Euro – Die Perspektive der deutschen Wirtschaft – Ein Kooperationsprojekt des

Tokenised commercial bank money: Digital commercial bank money for the economy

Companies need a different form of digital money than citizens. The key here is to enable automation and greater integration of payments into operational processes, thus promoting the ongoing digital transformation of the European economy, whilst making anonymous payments unnecessary. Such a form of money can be offered as tokenised commercial bank money by the banking industry. A state offer is not necessary for this, since there is no market failure. Rather, this would be a brake on far-advanced private innovation projects.

A study on the needs of business and industry⁵ underlines that a Digital euro for everyday payments by citizens cannot meet the requirements of corporate customers in the same way. A large proportion of companies would like to see transactions integrated more closely with their own operational processes. Also important is the desire for payments to better support their own automation efforts. The respondents hope that this will significantly increase efficiency for the entire payment processing as well as the upstream and downstream processes. A large number of companies surveyed would also like to see receivables management become even more digitalised and automated, so that time and effort required for dunning can be significantly reduced at the same time.

Further development of bank credits in the form of tokens that can be used in DLT environments is a prerequisite for implementing innovative payment processing concepts; think, for example, of autonomous payments between machines, in supply chains, or modern “pay-per-use” industry models. In particular, the risk-free transfer, “delivery versus payment” (DvP), i.e. simultaneous exchange of value in the course of contract settlement, is significant

Bundesverbandes der Deutschen Volksbanken und Raiffeisenbanken (BVR) und des Lehrstuhls für Finanzierung und Kreditwirtschaft [Digital Euro – The Perspective of the German Economy – A Cooperation Project of the National Association of German Cooperative Banks (BVR) and the Chair of Finance and Banking Industry Committee], Ruhr-Universität Bochum. November 2021.

for the economy, as DvP eliminates settlement risk. In particular, automation of payments could conflict with the rules of PSD2, which requires a “human release of the payment”.

The banking industry is working intensively on the development of so-called tokenised commercial bank money, which, as a digital twin to commercial bank money, would enable the use cases described above. As the representative of the Genossenschaftliche FinanzGruppe, DZ BANK plays a key role in this work. The work has progressed to such an extent that a proof of concept, i.e. an initial practical implementation of the tokenised commercial bank money, together with several banks and several industry partners, is being sought in the near future. Thus, a token could make an important contribution to the monetary system in a timely manner by enabling the realisation of new use cases on an as-needed basis and enjoying broad support from the banking industry and industry.

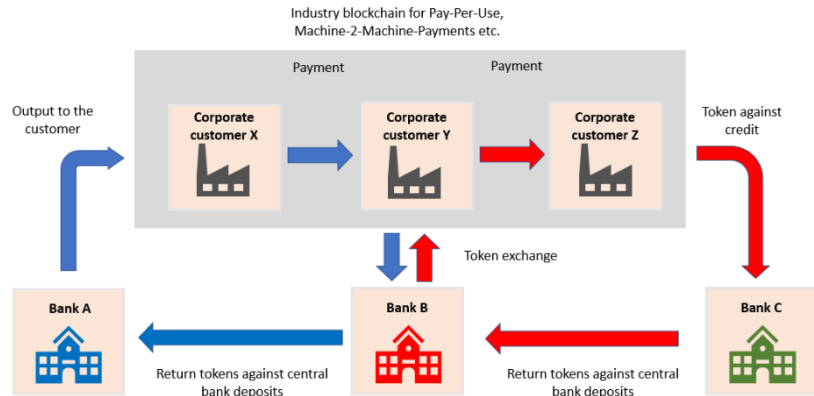


Figure 3: The cycle of tokenised commercial bank money

Wholesale Digital euro for the capital market

As a third new form of money, tokenised central bank money was to be created by the ECB for credit institutions (wholesale Digital euro). Tokenisation of central bank assets would be a quick win for a sovereign and innovative Europe and would strengthen the European location in international competition. Holding and clearing central bank balances in tokenised form can bring significant benefits to banks, which would not only benefit the competitiveness of banks, but also that of the European economy. A wholesale Digital euro can be used in capital market transactions and payment transactions to increase efficiency. Based on market principles, these efficiency advantages would also reach the economy as cost reductions. A wholesale Digital euro would come into play in the following areas, amongst others:

- Clearing and settlement of payment transactions: Background processing between banks would get by without credit lines and manual intervention through smart contracts and the direct exchange of services.
- International payments: The processing of international payments would be much easier on the basis of smart contracts (assuming a wholesale CBDC in the non-European currency) – including documentary payments, which are important in import and export.



Token, DLT/Blockchain, Smart Contracts

Tokens are tamper-proof cryptographic codes that represent, for example, a monetary value and can be used efficiently with or without DLT technologies.

DLT/Blockchain: A family of technologies aimed at solving the problem of consensus building in a decentralised manner amongst participating entities required to validate and record data in multiple locations (i.e., the distributed general ledger) without the need for central coordination.

Some systems support so-called **smart contracts**: Once digitally signed by the parties involved, these enable fully automated processing of contractual relationships and thus significant increase efficiency for business.

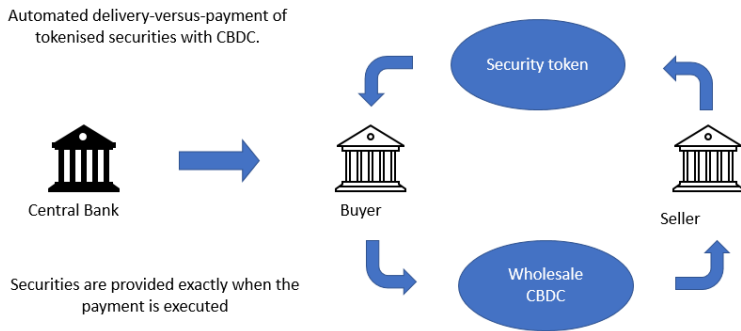


Figure 4: Delivery-versus-payment (DvP) with settlement in CBDC in the Banque de France experiments

- Settlements in the capital market: For clearing on the capital market, banks today use ECB balances. If these are tokenised, this could facilitate settlement in the European capital market and thus make liquidity and capital procurement more efficient for banks and companies.

A wholesale Digital euro would thus play an important role in the future monetary system by making the European capital market much more efficient. It would also strengthen the EU's digital sovereignty, since banks would not have to rely on stablecoins issued by foreign banks.

The opportunities associated with a wholesale Digital euro for the European economic area are immense. This is also evidenced by the fact that other countries such as Canada, Australia, and the U.S. are working on wholesale CBDCs as a priority, with some projects at an advanced stage of development.⁶ We therefore advocate that development of a wholesale Digital euro be given at least the same priority by the ECB and the European Commission as the Digital euro for citizens.

Key messages for a future monetary system

The design of new and innovative forms of money will determine the success of the future European monetary system. It must be clear that the introduction of new forms of money represents a fundamental change to tried and tested monetary system. Reforms must not be based solely on what is technically possible. Instead, the focus must be on how new forms of money create the greatest added value for society and the economy. Four core messages for a future monetary system are central to us:

1. Existing forms of money must not be replaced, but should be supplemented by digital (or tokenized) forms.
2. The coexistence of state and private money must be maintained even in the digital age, as it is a cornerstone of the social market economy. A Digital euro issued by the ECB should thus cover only those use cases where a government offering is required for basic usage, and leave sufficient room for private initiatives and offerings.
3. The new forms of money should be “digital twins” to existing forms, so that the core properties of cash, bank money and bank deposits at the central bank (or banks and savings banks) are digitally mapped (or tokenized). Such a monetary system brings the greatest benefits with acceptable risks.
4. There is an urgent need for close political support for reform projects. It must be ensured that a future monetary system enjoys broad support amongst citizens and the business community.

We are ready to contribute our expertise as a Cooperative Financial Network to the process of shaping such a monetary system of the future, in order to create the greatest possible added value for the economy and society and to support the European Union on its way to a leading position in the digital world.

⁶ Canada, Project Jasper: ([Link Canada](#)); Australia, Project Atom: ([Link Australia](#)); USA: Digital Dollar Project: ([Link USA](#))



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CONTACT PERSONS:

Christian von Falkenhausen, Nadine Fetzter (Abteilung Interessenvertretung – Lobbying Department)

Lobbying Department in the National Association of German Cooperative Banks (BVR) (politik@bvr.de, 030-2021 1605)

National Association of German Cooperative Banks ○ BVR

Schellingstraße 4, 10785 Berlin

[Registered stakeholder \(Lobby Register Entry R001693\)](#)

Contact: Nadine Fetzter, Yvonne Gross, Dr. Volker Heegemann, Christian von Falkenhausen
Tel.: +49 30 2021 1605, Email: politik@bvr.de, Website: www.bvr.de/en



National Association of German Cooperative Banks (BVR)

The BVR is the central association of the cooperative banking industry in Germany. These banks include nearly 700 cooperative banks, Sparda banks, PSD banks, banking institutions for churches and other special institutions such as the Deutsche Apotheker- und Ärztebank (German Bank for Pharmacists and Physicians). The President of the BVR is Ms Marija Kolkak. The other members of the Board of Managing Directors are Dr. Andreas Martin and Daniel Quinten. The BVR represents the interests of the Cooperative Bank Financial Network throughout Germany and internationally. Within the Group, the BVR coordinates and develops the joint strategy of the local cooperative banks.

It advises and supports its members in legal, tax and business management matters. The BVR also operates two institutional protection schemes. These are: the wholly-owned subsidiary “BVR Institutssicherung GmbH”, which represents the officially recognised deposit guarantee scheme and the voluntary “BVR protection scheme” – the oldest bank protection scheme in Germany. The BVR is active in Berlin, Bonn and Brussels. Information on the BVR and its topics may be obtained via politik@bvr.de or under **+49 (0)30 2021 1605** or at the website www.bvr.de.

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