



The digital euro

Political ambitions and economic realities

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The introduction of a digital euro is drawing closer. Everyone in Europe will get access to digital central bank money. However, with the ECB eager to preserve financial stability, a limit is expected on how much users can hold. The digital euro is primarily intended to be a payment option rather than an instrument for investment.

Widespread use of the digital euro as a means of payment is not very likely though, as it will provide no added benefits and will be subject to restrictions. Still, a high degree of data protection could make it more appealing than other payment options for users who put great emphasis on their privacy. Lawmakers could also force merchants to accept the digital euro in order to encourage its use.

Low use could make it difficult to achieve the main objectives: strengthening Europe's sovereignty through a proprietary, pan-European retail payment system and stimulating competition in the market for payments in the long term.

Digital access to central bank money will hardly give the euro an edge in its competition with other currencies, be it the dollar or private global stablecoins. What matters here are macroeconomic factors such as price stability.

The digital euro is intended to ensure that citizens have access to central bank money in case cash is no longer used. The ECB will continue to issue cash as long as demand for it exists.

Lifting the limits on how much each user can hold would change the situation entirely, allowing a massive outflow of bank deposits into the digital euro. As a result, lending decisions and money creation would shift from the decentralised, privately owned banking sector to a central, state-run authority: the ECB. In this case, Europe would face the fundamental question of which type of monetary and financial system it wants. The answer to that would have to come from democratically elected representatives.



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In the next few days, the ECB is expected to officially announce the launch of a project aimed at introducing a digital euro. It wants to be prepared to issue this digital currency in the future as needed. The ECB believes it will take roughly five years of development before the digital euro is ready to enter circulation.¹ The design of the currency remains open. Last year, the ECB presented various options and held a public consultation.

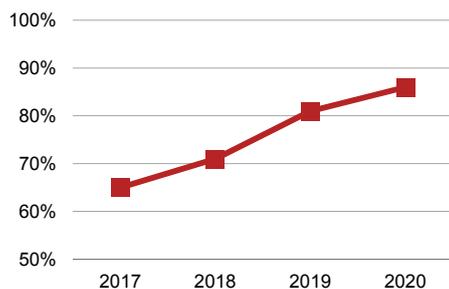
However, more and more information is emerging about the likely design of the digital euro. According to press reports,² the functionality of the new money will be based on cash. The digital euro is mainly intended for payments by private users in Europe, but without excluding businesses (the ECB generically refers to “individual users”). While offering citizens a high degree of data protection, it also has to comply with money laundering regulations, leaving a number of questions as yet unanswered. Banks and other regulated payment service providers will offer users digital wallets to store the digital euro. Rather than using a blockchain, payments will be processed via the existing infrastructure, with the ECB’s TARGET Instant Payment Settlement (TIPS) system under close consideration. The digital euro is not intended as a store of value, since converting extensive bank deposits into digital euros could jeopardise the stability of the financial system – something the ECB explicitly wants to avoid. As a result, each user will probably be able to hold only a limited amount of digital euros, possibly EUR 3,000. Anything beyond that would automatically be deposited in a bank account.³ According to the ECB, the digital euro will not be introduced as a monetary policy tool and will not pay interest.

This pragmatic but not very innovative design raises the question as to the problems or gaps in the payment system that the digital euro is supposed to solve or close. Or has the ECB scaled back its substantial political ambitions to an economically feasible level?

Central bank engagement in digital cash is on the rise

1

Share of central banks* conducting analytical or practical work on digital cash



*BIS annual survey, over 60 participating central banks

Sources: BIS, Deutsche Bank Research

ECB driven by political goals

Central banks in many countries are contemplating the introduction of digital cash or are already experimenting with prototypes. Particularly less developed economies hope that digital central bank money will open the door to greater digitisation and efficiency in the payments sector while offering large parts of the population access to digital payment options. In the euro area, citizens and businesses already have access to digital euro payments and accounts that are provided by banks, credit card companies and other payment service providers. A digital euro issued directly by the ECB will not have much of a competitive edge over such products. Instead, **the ECB is being driven by political goals** – and perhaps even by the fear of missing the boat. The digital euro is intended to be a response to i) greater currency competition, ii) the dominance of foreign providers in the European payments sector and iii) the impact of declining cash usage.

¹ Reuters (2021). Digital Euro may still be five years away, ECB’s Panetta says. March 19.

² See Handelsblatt (2021). EZB-Konzept fast fertig: So könnte der digitale Euro aussehen. May 27. Also ECB (2021). Interview with Financial Times. Interview with Fabio Panetta, Member of the Executive Board of the ECB, conducted by Martin Arnold on 14 June 2021.

³ Alternatively, higher amounts could be subject to unfavourable interest rates to discourage savers.



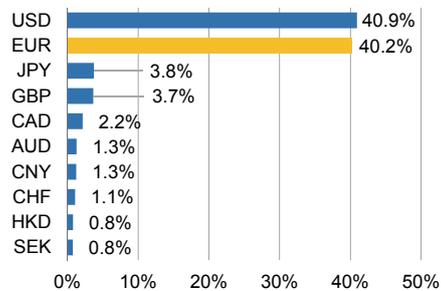
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Currency competition

USD and EUR leading currencies in international payments via SWIFT

2

Share in value in May 2021 (without payments within the euro area)



Sources: SWIFT, Deutsche Bank Research

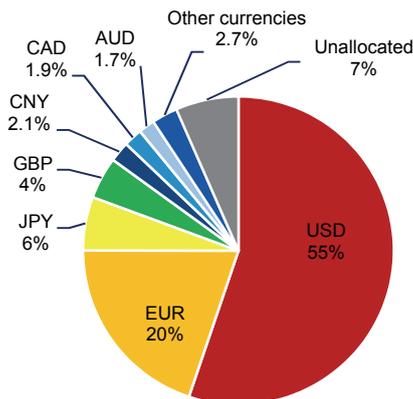
The ECB, like other major central banks, could soon face currency competition on its home turf for the first time. The internet and blockchain technology enable the safe transfer of assets without local institutions having to be involved in safekeeping, processing transactions or controlling access to the transfer system.

Issuing digital central bank money, however, **will do little to strengthen the competitive position of the euro in Europe**. What matters instead is price stability. As long as savings in euro incur no or relatively few losses from the combination of inflation and interest rates, Europeans do not have a strong incentive to shift their financial assets into foreign digital currencies such as the Fed's cryptodollars or into global stablecoins such as Facebook's Diem (neither of which exists yet). For the time being, the euro remains the unit of account, with every other currency subject to foreign exchange risks. Rather than competing with the euro, Bitcoin and other cryptocurrencies are primarily a new asset class for investors willing to take speculative risks – at least so far.

Reserve currencies: Euro in second place

3

December 2020



Sources: IMF, Deutsche Bank Research

Issuing a digital euro is also hardly likely to strengthen the euro's role on the international stage. Usage of a currency for international payments mainly depends on the importance of the underlying economy in global trade and on the liquidity and size of its financial market, as well as on the reliability of economic policy.⁴ It is also **doubtful whether the digital euro is even suited for international payments** if the total amount per user (private individuals and businesses alike) – and probably access to the currency by non-Europeans as well – is limited. This makes the digital euro much less appealing for international trade payments compared to bank deposits. Also, the digital euro is not very attractive with regard to euro cash, 30% to 50% of which may be used outside the euro area⁵ and is not subject to any restrictions on access or quantity. However, the digital euro could be used for remittances, provided an international infrastructure for transferring digital central bank money will exist.

Unrestricted access for Europeans to the digital central bank money of a foreign central bank could lead to outflows from euro (bank deposits) for instance into the dollar. Even in this case, though, the macroeconomic and political conditions remain decisive. Exchanging counterparty risks for foreign exchange risks would only be attractive given a stable foreign currency, and mainly for professional investors. A further disadvantage of foreign currencies can be a lack of convertibility. Such is the case with the renminbi, for example, which is already circulating as digital central bank money in pilot projects in China and is soon to be issued officially in this form.

Europe's sovereignty in the world of payments

An important political goal is Europe's sovereignty, which is to be strengthened through the digital euro as a **payment system under European control**. Payments constitute a critical infrastructure which in Europe is increasingly dominated by foreign companies though, especially when it comes to retail payments. Visa and Mastercard, two US-based companies, enable cross-border card payments in Europe and also process national card payments in most EU countries today. More than two-thirds of all payments with cards issued in the

⁴ Ferrari, Massimo, and Arnault Mehl (2021). Central bank digital currency and global currencies. In: ECB, The international role of the euro. June.

⁵ ECB (2021). Foreign demand for euro banknotes. Occasional Paper 253. January.



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EU were handled by Visa or Mastercard in 2016.⁶ If this trend continues, it could make it difficult to enforce European laws and protect payment data of European businesses and citizens. Cash payment, the only “European” retail payment option available throughout Europe, is also on the decline.

The ECB’s efforts to create the digital euro as a European alternative that could be used throughout the euro area should therefore be welcomed. Yet it is unlikely to beat out the major private providers in the market, as users may focus on practical advantages rather than long-term political goals in their everyday lives. They would have to be convinced to switch to a new payment method that is hardly different from existing ones (such as deposits in online current accounts) in terms of handling and the range of possible uses, and is also subject to quantitative restrictions. Nevertheless, the digital euro could be a potential option should European providers continue to fail to develop – and establish successfully in the presence of strong foreign competitors – attractive private-sector payment methods for retail customers that can be used across Europe, such as card payments or innovative forms of payment.

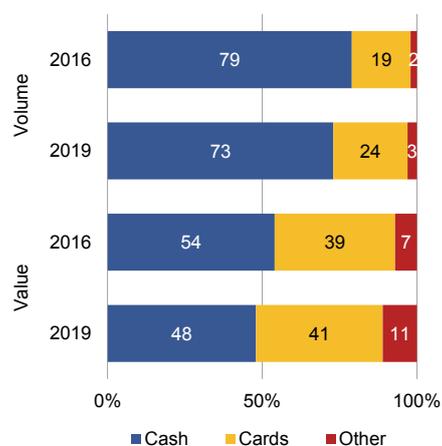
In terms of technology, the digital euro will not advance the market for payments in Europe, as the ECB – like many other central banks – has decided not to use infrastructure based on distributed ledger technology (DLT, such as blockchain). DLT-based systems have so far not been used in retail payments, and the ECB does not want to take any operational risks. As a result, it is rightly leaving it up to private providers to develop and market innovative and less thoroughly tested payment solutions, most of which are designed to support corporate customers in digitalizing further their business. Such solutions include programmable payments and machine-to-machine payments or transactions involving the internet of things.⁷ However, this also means that the digital euro will not pose a serious threat to global stablecoins at a technical level.

A reaction to declining cash usage

Cash is still king at the till, but in decline

4

Payments by instrument*, euro area



*2019: POS and P2P payments

Sources: ECB, Deutsche Bank Research

Finally, the digital euro shall be a solution for (economic) policy issues resulting from **declining cash usage** in Europe. If euro cash in future is no longer a generally accepted means of payment, this could lead to less data protection and less competition in the market for payments. The digital euro could indeed counteract this development. However, the argument that, without cash, citizens would no longer have access to central bank money is a poor reason to issue a digital euro, especially given the quantitative restrictions.

The digital euro **could be designed to offer substantially greater data protection** than existing electronic payment instruments such as card or online payments – something that would be all the more important if fewer and fewer businesses accept cash payment and online purchases advance to the forefront. Enabling citizens to pay for instance for prescribed psychopharmaceuticals in an (online) pharmacy, without leaving a trail of data, would set the digital currency apart from other digital forms of payment. Like with prepaid cards, a very high level of data protection would only be possible for smaller-scale transactions to ensure compliance with laws to combat money laundering and terror financing.

Cash limits the market power of digital payment providers, as it constitutes a “competitor” for payment systems in brick-and-mortar retail. With cash, anyone

⁶ ECB (2019). Card payments in Europe – current landscape and future prospects: a Eurosystem perspective. April.

⁷ For more information, see for example Deutsche Bundesbank (2021). Digital money: options for payments. Monthly Report April.

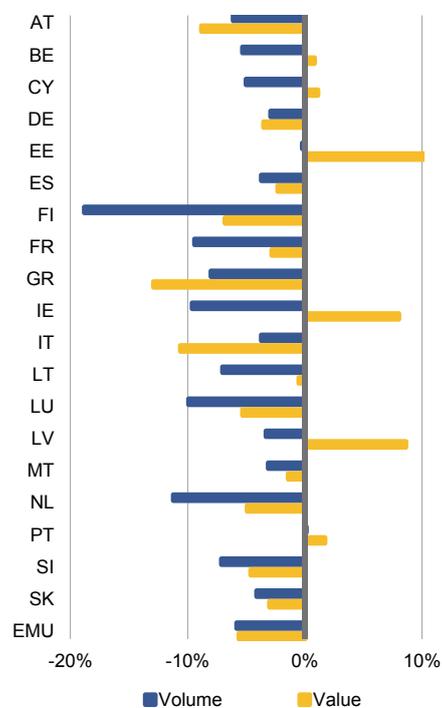


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Consumers in most euro-area countries pay less with cash

5

Change in cash transactions between 2016 and 2019*



*POS payments, 2019 incl. P2P payments

Sources: ECB, Deutsche Bank Research

can make and accept payments without user fees or barriers to access. This is an important aspect, since the payment market has a tendency to concentrate in the hands of very few providers due to network effects. Here, the digital euro – at the till in the store and in online shops – could ensure competition in the payment market in the long term. Such considerations, among others, are behind the Chinese central bank’s decision to roll out a digital yuan and break up the duopoly of Alipay and WeChat in mobile payments by allowing banks and other competitors to offer wallets for the digital yuan issued by the central bank.⁸

By issuing a digital euro, the ECB finally wants to make sure that citizens have access to central bank money in case cash is no longer used. The arguments, however, are less convincing, and the restrictions on the amount each citizen can hold even make a mockery of this goal.

Central bank money (cash and banks’ deposits with the ECB) in principle is not subject to default risk, whereas a commercial bank can become illiquid, costing clients their savings. Nevertheless, bank deposits of up to EUR 100,000 per person and bank are insured in the EU. Regulation and supervision of banks and interventions by the central bank in the event of a crisis provide further security for deposits. Even during the financial crisis, cash – the form of central bank money accessible to all – was used as a “safe haven” only to a limited extent. Although currency in circulation in the euro area shot up by EUR 44 bn in October 2008, the increase was equivalent to a mere 6% of total currency in circulation, or 3% of private households’ bank deposits, and was only 50% higher than the additional demand for cash of roughly EUR 30 bn that can typically be seen around Christmas.

Opinions differ as to whether it makes sense or is even necessary for central bank money to be digitally accessible for everyone rather than just banks.⁹ Denmark’s central bank sees it as its job to ensure price stability, safeguard financial stability and make sure that payment systems are secure, but not to provide general access to digital central bank money.¹⁰ The ECB does not subscribe to this point of view. But even the ECB does not want a digital euro that would be a “safe haven” or competing with bank deposits, as the limit for each user clearly demonstrates. Instead, it is positioning the digital euro as a payment solution rather than an instrument for investment, a store of value. Moreover, the ECB has repeatedly emphasized that it does not intend to abolish cash despite its declining use and will continue to meet the existing demand for euro banknotes in full.¹¹ So far, however, it has been unable to dispel the fear of cash users, as a Bundesbank survey shows.¹² From a legal perspective, it is not entirely clear whether the ECB is obliged to issue cash.

At the end of the day, a digital euro as an alternative to other payment systems could indeed be a step towards more European sovereignty, more and lasting competition in the payment market and – with the right design – more data protection. By contrast, strengthening the euro against other currencies inside and outside Europe (central bank/fiat money, cryptocurrencies and global

⁸ Institute of International Finance (2020). China Spotlight. The Digital RMB is Still a Form of Cash. December 7.

⁹ See the critical assessment by Quarles, Randall (2021). Parachute Pants and Central Bank Money. June 28.

¹⁰ “In a Danish context, digital currency thus already exists, as bank deposits.” Danmarks Nationalbank (2017). Central bank digital currency in Denmark? December 15, p. 21.

¹¹ E.g. ECB (2021). Digital central bank money for Europeans – getting ready for the future. Blog post by Fabio Panetta, Member of the Executive Board of the ECB, and Ulrich Bindseil, ECB Director General Market Infrastructure and Payments. March 25.

¹² Financial Times (2021). Digital euro will protect consumer privacy, ECB executive pledges. June 22.



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stablecoins alike) through general, yet restricted access to digital euro central bank money is probably mostly wishful thinking.

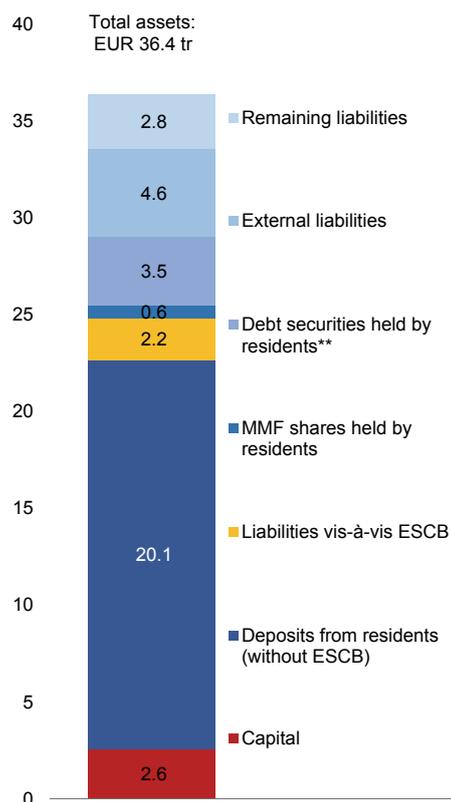
Who wants to use the digital euro?

Questions remain as to how successful the digital euro would be in the market. Its introduction would be politically motivated, **but a lack of demand could lead to its failure.**¹³ The design of the digital euro, as is apparent so far, suggests that potential private users will hardly see any difference compared to existing digital payment options. The cap on the amount users are allowed to access reduces its appeal. Progress on setting up new wallets and paying with digital euros is therefore likely to be slow. On the acceptance side, there are also few reasons to invest in the new infrastructure, among other things because it is still unclear who is supposed to bear which costs in the system. It is only certain that the use of the digital euro will be free of charge for citizens, as is commonplace for most retail payments. Of course, it cannot be ruled out that lawmakers will require businesses (including online ones) to accept the digital euro at the customer's request. As a result, the digital euro would have greater reach in Europe than Facebook's envisioned Diem. A higher level of data protection could be a unique selling point that appeals to those users who bother to adopt an additional payment solution in the interest of their privacy. Overall, the digital euro as it is currently being discussed is likely to become more of a niche product in the cashless payment market.

Euro-area banks* depend on deposits for refinancing

6

Liabilities in EUR tr, April 2021



Resident: domiciled in the euro-area
External: creditor resident outside the euro-area

*Incl. MMFs and e-money institutions

**Excl. debt securities with original maturity below 2 years and held by foreigners. These are part of external liabilities.

Sources: ECB, Deutsche Bank Research

What if the ECB eases the restrictions?

The situation would be completely different if the ECB eases the restrictions, especially the cap on how much each person can hold, either now or in the future. This would make the digital euro indeed very appealing – as a savings option, as an alternative to bank deposits. While deposit insurance protects small investors, an interest-free digital euro as announced could be an option for saving money should banks expand their negative interest rates to ever-smaller deposits. From a saver's perspective, the handling of a bank account or a wallet with digital euros is the same, only cash stands out as a non-digital form of money.

Naturally, it is also conceivable that the ECB might pay interest on the digital euro, be it positive or negative. Doing so would be technically feasible. It would then directly set the conditions under which bank deposits and the digital euro compete for investors. An interest rate similar to or lower than the bank interest rate, from the first digital euro, would strengthen its position as a pure payment solution. A higher interest rate would mean an outflow of deposits from banks to the ECB. Professional investors and businesses with large deposits would appreciate that the digital euro is central bank money that allows them to minimise counterparty risk, in addition to any potential upside in terms of yield.

What kind of monetary system does Europe want?

If savers shifted ever more bank deposits into digital euros, this would trigger liquidity shortages in the banking sector that the ECB could counteract by

¹³ See Bofinger, Peter, and Thomas Haas (2021). CBDC: Where is the unique selling proposition? SUERF Policy Note 228. March.



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purchasing bank assets such as securities or loans, or by increasing lending to banks through refinancing operations. Over the longer term, banks might grant only loans to their clients that the ECB accepts as collateral for the provision of central bank money. Ultimately, actual lending decisions and money creation would shift away from the decentralised, privately owned banking sector to a central, state-run authority: the ECB. Private financial intermediation would gradually be replaced. In this case, Europe would face the fundamental question which type of monetary and financial system it wants, requiring intense political and economic debate. The question is one that democratically elected representatives, rather than the ECB, need to answer. Only they have the legitimate authority to do so, as the ECB's current mandate does not cover such a transformation of the financial system.

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