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Digital euro opens up new opportunities

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After a two-year investigation phase, the ECB's Governing Council on 1 November 2023 decided to proceed to a preparation phase for the possible issuance of a digital euro. By introducing a digital euro, the ECB wants to simplify payment transactions in the euro area and enable relevant innovation. It also wants to strengthen monetary sovereignty through the digital euro. Whether the digital euro will indeed come will be decided only at a later date but its possible design is already the subject of controversial debate. At the moment, the ECB is mainly working on a retail variant of the digital euro that is supposed to emulate the features of cash as much as possible and, hence, complement cash but not replace it. The plan is to enable its use as free, digital legal tender all around the euro area. The main risk of a digital euro is that it may prompt strong outflows of deposits from commercial banks. However, a planned holding limit will counter this risk. Overall, the opportunities appear to outweigh the risks, although some design options have not yet been defined. In particular, the option of basing the digital euro on a distributed ledger technology (DLT) appears to enable multiple areas of application and efficient solutions in the future. In the context of the internet of things (IoT), in combination with the use of smart contracts (electronic contracts that automatically monitor underlying rules and autonomously perform defined actions in response to a trigger event), such a digital euro could generate considerable efficiency gains. Expanding the use of a programmable digital euro to wholesale banking would also generate a wide range of opportunities for the interbank market and cross-border, cross-currency payment transactions. Basing the digital euro on a DLT would therefore give the project an even more promising and forward-looking perspective.

Distributed ledger technology (DLT) is a technology for recording information within a decentralised network. One of the most well-known DLTs is blockchain which, in turn, forms the basis for the majority of cryptocurrencies. The development of DLT and the rapidly growing dissemination of digital crypto assets that use it have prompted central banks around the world to consider digitalising the monetary system and introducing central bank digital currencies (CBDCs).[1] Some 130 countries, which represent around 98 per cent of global GDP, are now considering the introduction of CBDCs. While 11 countries – including China – have already introduced a CBDC, the European Central Bank (ECB) and many other central banks are still in the preparation phase. The European Commission published its legislative proposal for a digital euro on 28 June 2023.[2] These proposed legal provisions serve to create a framework for facilitating the possible introduction of a CBDC in the euro area. Moreover, after a two-year investigation phase, the ECB's Governing Council decided to proceed to a preparation phase, which began on 1 November 2023. It must be noted, however, that no decision has yet been made on the issuance of a digital euro.[3]

Reasons for issuing a digital euro

The ECB has provided a number of reasons for a digital euro. At present, central bank money is available to the population only in the form of cash. The ECB has pointed out that the use of cash is decreasing as the digitalisation of society advances[4] and therefore wants a digital euro to complement the supply of cash. This is an attempt to counteract market-distorting behaviour that might occur if the market for digital money were dominated by a single or a few private providers. More broadly, it is also about safeguarding monetary sovereignty if the use of cash decreases further and digital payment options outside the banking sector are offered primarily by non-European services. In addition, the digital euro could simplify payment transactions within the euro area and thereby strengthen Europe's sovereignty. At the moment, there is no uniform cross-border solution for payments in e-commerce or card payments for the euro area that would be built on a European infrastructure. But the euro would become more attractive not only in Europe but also as an international means of payment. Finally, there is also the hope that the digital euro will boost innovation in payment transactions through synergies with the private sector. The ECB is hopeful that intermediaries will offer advanced services on the basis of the digital euro and that this will increase economic efficiency.

The design of the digital euro

The exact design of the digital euro is still the subject of controversial debate and nothing has yet been decided. Some features already appear to be virtually certain. In particular, the ECB is currently working on a retail variant of a CBDC (rCBDC). The idea is for the digital euro to emulate the features of cash as much as possible and, in this way, complement cash but not replace it. The ECB's aim is for it to be usable as free, digital legal tender all around the euro area.[3] The rCBDC is to be usable for both online and offline payments. Thus, the digital euro should be a public good that would benefit EU citizens as a safe and risk-free payment solution, especially in the digital space. Basic services such as transactions between two individuals will therefore be free of charge.

The digital euro would come directly from the ECB and would hence be another form of central bank money alongside cash and reserves held by commercial banks at the central bank. So unlike with fiat money, the holder of digital euros would not

be exposed to any liquidity or credibility risks. To be sure, the digital euro would originate directly from the ECB but the idea is that supervised intermediaries such as banks and other payment service providers would play a key role in its issuance. How the corresponding incentives can be created to make the business model attractive has not yet been decided. For example, payment service providers that make digital euros available could charge retailers with a fee for the associated services. It is important to emphasise that citizens can at any time exchange private money (that is, money held with a commercial bank) for public money (central bank money) within the holding limits. Like cash, the digital euro would therefore be a risk-free means of payment.

The digital euro is not intended to be used as a form of investment. That is why the digital euro would not earn any interest. Furthermore, in all probability there will be a holding limit. In order to monitor this and give access to the digital euro only to citizens of the euro area, users would have to identify themselves when first accessing services involving the digital euro. This process is known as KYC (know your customer) and will likely be the responsibility of private financial services providers.

Potential risks of the digital euro

A major threat that may emanate from the digital euro is that in times of crisis in which confidence in the banking sector decreases, users may exchange liquidity for digital euros on a large scale. In such a scenario of a 'digital bank run', banks' liquidity would come under intense pressure. A worst-case scenario could take the form of bank insolvencies if the ECB fails to provide sufficient liquidity in the form of emergency loans. Even in normal times, commercial banks would have to prepare for an outflow of funds into this type of secure, digital currency at all times, forcing them to maintain higher liquidity reserves. This would have an adverse effect on money creation through lending, and the financing conditions for the real economy would tend to deteriorate. In an extreme case, customer deposits could be withdrawn on a large scale, leading to a disintermediation of the banking sector. This would result in liquidity bottlenecks and higher funding costs for banks.

Crucial design options for the digital euro

The ECB faces the dilemma that the digital euro must be accepted by the citizens while not becoming too successful. If it becomes too successful, it would cause an excessively strong outflow of deposits, which could jeopardise financial stability, as described in the preceding section. The ECB is thinking about addressing these risks by imposing certain limitations on the use of the digital euro.

In order to prevent excessive outflows of deposits, the digital euro will not bear interest. Furthermore, the ECB plans to introduce a holding limit to regulate inflows into the rCBDC. A limit of EUR 3,000 per person is currently under discussion. Ignazio Angeloni, member of the Supervisory Board of the European Central Bank, has concluded that a limit in this amount could result in a maximum outflow of around EUR 1 trillion. This would be roughly 10% of bank deposits in the euro area.[5] It must be considered, however, that this maximum would in all likelihood not be exhausted and the inflow would presumably be gradual. The ECB has concluded that limiting the total holdings in digital euros to 1 to 1.5 billion euros will prevent negative effects on the financial system and monetary policy.[6]

Whether the digital euro will be based on a distributed ledger technology (DLT) such as blockchain has not yet been decided. Enabling digital euro transactions to be settled using a DLT system could make it safer, strengthen the CBDC's resistance to manipulation and increase efficiency. Furthermore, complex business processes could be automated through programmable payments known as smart contracts.[7] Today, payment transactions often suffer media discontinuities along the value chain, which causes inefficiencies. With regard to the Internet of things (IoT), a digital euro based on DLT would enable payments between two or more machines to be automated through smart contracts and carried out autonomously on the basis of previously defined trigger events.[8] This automated payment processing would substantially contribute to a complete end-to-end digitalisation of value chain networks and, as a result, unleash substantial potentials for efficiency increases.[9]

The ECB's main focus currently lies on developing a retail variant for the digital euro. In April 2023, however, the Eurosystem also announced that it would explore potential solutions for the central bank settlement of wholesale financial transactions based on DLT.[10] A wholesale CBDC, that is, digital central bank money for the settlement of DLT-based transactions for a limited group of users in the financial sector, allows the fully automated, immediate and direct processing of clearing and settlement in the interbank market on the basis of smart contracts, in other words, without intermediaries. This would simplify liquidity management and reduce operational complexity and counterparty risks.

Furthermore, wholesale CBDCs have the potential of revolutionising cross-border, cross-currency payments. At present, international transactions between central banks are slow, costly and non-transparent because of outdated systems, lack of interoperability, limited opening hours, different national laws and long transaction chains. Introducing wholesale CBDCs would enable central banks to simplify and directly settle transactions between them without intermediaries. The advantage would be faster and more cost-effective processing.[11] The European Stability Mechanism mentioned greater transparency, easy scalability, risk reduction and increased financial stability as further advantages of wholesale CBDCs.[12] A report by the Bank for International Settlements arrived at the conclusion that faster, more cost-effective, transparent and inclusive cross-border payment services would provide considerable advantages for citizens and economies around the world.[13] Nonetheless, it must be noted that allowing institutions or individuals outside the euro area to access the digital euro could have considerable consequences for capital flows and the euro exchange rate. Furthermore, the ECB's balance sheet would grow significantly in case of high foreign demand.

Conclusion

The digital euro holds both opportunities and risks for the euro area. Overall, however, the opportunities appear to significantly predominate, especially when taking into account that holding limits considerably reduce any possible risks to the financial system. The ECB faces the difficult task of designing the CBDC in a such a way that it becomes success-

ful but not too successful. Some of the possible features are still uncertain. In particular, the option of basing the digital euro on a DLT appears to have much potential for the future. Regarding the Internet of things (IoT), a digital euro based on a DLT would make it possible to fully digitalise value chain networks from end to end, enabling significant efficiency increases. Further opportunities in the wholesale area make the introduction of a digital euro appear even more promising. Expanding its use as a wholesale CBDC would have the potential of revolutionising the interbank market and cross-border, cross-currency payments.

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[1] https://www.atlanticcouncil.org/cbdctracker/.

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[3] https://www.ecb.europa.eu/paym/digital_euro/faqs/html/ecb.faq_digital_euro.en.html

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