

**AN INITIAL ANALYSIS OF THE POSSIBLE INTRODUCTION OF A DIGITAL EURO**

In recent years, interest in what are known as central bank digital currencies (CBDCs) has grown markedly.<sup>1</sup> Society’s increasing digitalisation, new payment technology possibilities and the potential monetary policy and financial stability implications of private initiatives of this kind have led numerous central banks worldwide (see Table 1) to analyse the possibility of creating this new monetary liability that could grant the entire population access to central bank digital currency.

Any decision in this regard needs careful consideration given its many implications and the different configurations it could take (for example, book-entries vs. tokens, centralised vs. decentralised management model, remuneration policy). The Eurosystem began its own analysis more than a year ago, as it was aware of the need to be prepared for a possible decision to issue a digital euro. The outcome of an initial study<sup>2</sup> focusing on assessing its potential advantages and disadvantages and the different design alternatives was published in October 2020.

The report identifies some scenarios where it might be useful to issue a digital euro as a complement to cash.

For example, it could be envisaged as a tool to promote digitalisation and payment sovereignty in the European economy. Issuing a digital euro could also be necessary if the use of cash were to decline significantly, or if foreign digital money or a private payment solution not overseen by European authorities that was broadly taken up were to emerge as a source of risks or instability.

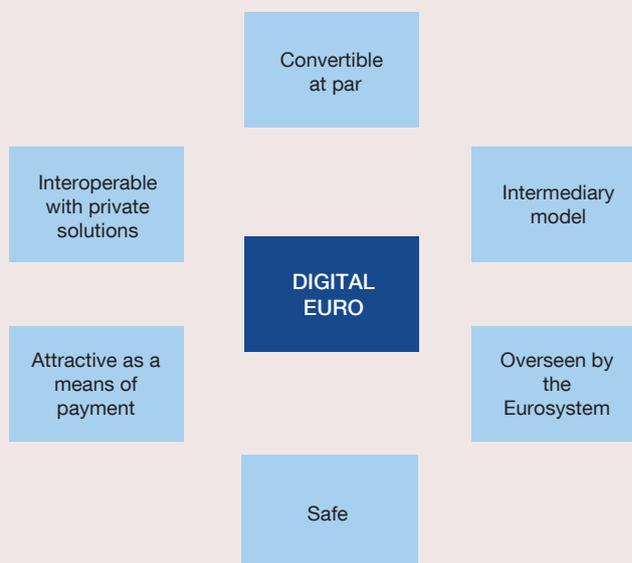
Despite its potential benefits, the implementation of a digital euro could also have undesired effects for the stability of the financial system, the functioning of the payment system and the effectiveness of monetary policy, among others. In particular, developing a digital euro could diminish the importance of the bank deposit activity. This could trigger changes in the behaviour of banks (increasing deposit remuneration, bundling deposits with other products, turning increasingly to more volatile market financing and to central bank financing) and customers (greater ability and incentives to withdraw funds from the banking sector during crises) and have implications for stability. In addition, banks, who play a key role in the payment system, could lose much of this business, which accounts for a considerable

Table 1  
CBDC PROJECTS WORLDWIDE

Projects	Countries
Retail CBDC in operation	Bahamas
Retail CBDC pilot in operation	Eastern Caribbean Central Bank, Sweden and China
Retail CBDC pilot completed	Ecuador, Uruguay and Ukraine
Research on retail CBDC	United States, Brazil, Iceland, Norway, Denmark, Russia, Tunisia, Ghana, Madagascar, Israel, Malaysia, Philippines and New Zealand
Research on retail CBDC and wholesale project	Euro area, Canada, French Guiana, United Kingdom, Switzerland, South Africa, India, Indonesia, Australia and Japan
Wholesale CBDC project	Saudi Arabia, Hong Kong, Thailand and Singapore

SOURCE: BIS.

Figure 1  
SOME REQUIRED DIGITAL EURO FEATURES



1 For an overview of the number of ongoing initiatives across the world, see the BIS database by R. Auer, G. Cornelli and J. Frost (2020), “Rise of the central bank digital currencies: drivers, approaches and technologies”, BIS Working Paper, No 880.  
 2 See “ECB Report on a digital Euro” of 2 October 2020.

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share of their revenue. As the new equilibrium would imply higher costs and lower revenue for banks, lending to households and firms would also become more expensive, with a knock-on effect on economic activity. The loss of information on bank customers due to lower deposit activity and the potential deterioration in banks' profitability could incentivise greater risk-taking by the banking sector.

The report acknowledges that the design of the digital euro could have undesirable implications for the monetary policy mandate, something which is to be avoided. At the same time, the report does not at this stage analyse the possible role of the digital euro in strengthening the monetary policy framework.

A disruption of the transmission channel resulting from digital euro-induced changes in banks' balance sheets and behaviour may lead to potential adverse effects materialising. For example, replacing deposit funding with central bank borrowing could raise banks' demand for collateral, thereby altering the risk-free rate, and increase central banks' exposure to the economy.

Alternatively, remunerating the digital euro through interest could directly reinforce the transmission of monetary policy both in ordinary times and in times of crisis. The risk of bank deposits shifting to the digital euro in moments of stress could be mitigated by remunerating digital euro holdings at a variable interest rate over time, even to the extent of penalising them in the event of a bank run, for instance. In ordinary times, the direct effect identified by some academic studies<sup>3</sup> also stems from the fact that such remuneration of the digital euro may act as the effective lower bound on interest rates, thus making it easier for central banks to control market rates. These claims also highlight that the mechanism could make it easier for negative rates to be transmitted, thus strengthening the policy framework for action when they are needed. However, the coexistence of the digital euro and cash limits the relevance of this objective.

The report also includes an initial analysis of these impacts on the stability of the financial system and sets out a series of essential requirements that the digital euro would have to meet to limit these possible adverse

impacts. These are, namely: to be based on the best technology, to allow for a standardised service throughout Europe and to be interoperable with private payment solutions, attractive as a means of payment (particularly, compared with cash), easy to use and secure. Its convertibility at par into physical euro should be guaranteed and the ECB should be the authority responsible for maintaining its value. The degree of involvement of financial intermediaries would be especially important to mitigate the effects on financial stability (see Figure 1).

In addition, an appropriate mix of the different design options and the way the support infrastructure is configured could help mitigate some of the possible adverse implications of issuing digital euro.

Given the importance of these and other aspects, the ECB and the euro area central banks have continued to work together to identify and assess all the risks associated with the digital euro, and to determine what could be the most advisable design to ensure that the Eurosystem objectives are properly met. Naturally, for this initiative to be successful, user preferences will also have to be factored into its design. To this end, since the aforementioned ECB report was published, efforts have been made to broaden knowledge of the digital currency in two ways.

First, a number of practical experiments have been conducted to gauge the possibilities and limitations of the different technologies, and a solid opinion has been formed on the suitability of the different approaches. The results will be useful in facilitating any further research that may be conducted in the euro area.

Second, the Eurosystem has also sought to enhance dialogue with all the stakeholders by organising a wide-ranging public consultation for this purpose. This initiative has been very well received and has provided valuable and detailed information on potential users' needs and preferences. It has also allowed the Eurosystem to become familiar with the insight and expectations of the financial sector and other professionals, both in academia and in the technology industry, regarding the future of the digital euro.

The participation of the Eurosystem in various supra-national fora and bodies will also help enrich the Eurosystem's

3 M. D. Bordo and A. T. Levin (2017), "Central Bank Digital Currency and the Future of Monetary Policy", NBER Working Paper No. 23711, National Bureau of Economic Research.

4 See *Eurosystem report on the public consultation on a digital euro*, ECB, April 2021.

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understanding of the nature of the digital euro and the opportunities it offers, thereby helping ensure that it can be fully integrated into the international monetary system.

All this work will nurture a fresh debate in the ECB Governing Council with a view to outlining a possible future digital euro roadmap.