DIGITAL EURO: OBJECTIVES AND CHALLENGES

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A digital euro: shaping the future of our money to benefit European society

1. Need for a digital euro

Euro banknotes and coins are a tangible symbol of European integration. European citizens benefit from a convenient and fast means of payment that is accepted throughout the euro area. Our idea behind a digital euro is to translate the benefits of cash into the digital world. While our cash is a truly European payment medium, we do not have an equivalent digital payment solution. When it comes to cashless payments in Europe, both in stores and in e-commerce, people rely on card and internet payment schemes, very often from non-European players. Thus, a digital euro would represent an opportunity to strengthen autonomy in digital European payments. Given the decreasing usage of cash for payments across Europe, we would thus be creating a digital complement – not a replacement – for our treasured euro banknotes and coins.

On top of that, a digital euro could combine the efficiency provided by modern, digital processes in payments with the safety provided by a central bank in a single means of payment. Thus, it could facilitate the emergence of a new digital ecosystem with not only full pan-European reach but also allowing service providers to offer new innovative services, resulting in possible productivity gains, for instance by providing digital money that could be used in programmable environments.

2. Risks to be addressed

However, if we decide to make a digital euro available to the public as a complement to cash, we have to address the associated risks, for example with regard to financial stability and monetary policy. We also want to preserve the valuable role that banks and other payment service providers play as intermediaries in the financial system. An outflow of deposits from the banking sector must be avoided, as well as sudden, uncontrolled shifts of bank deposits to central banks' balance sheets. Countermeasures can include maximum amounts and graduated interest rates in order to limit individual holdings and to ensure a digital euro would mainly be used as a means of payment instead of a store of value. Other risks to bear in mind are the effective prevention of money laundering and terrorist financing as well as cybersecurity risks.

> **A digital euro would represent an opportunity to strengthen autonomy in digital European payments.**

To ensure broad acceptance, a digital euro should be made accessible to all groups of society, without barriers, but in a secure way. Therefore, its technological design must ensure sufficient and secure scalability. We face a balancing act between two opposing key risks: being too ambitious could lead to a crowding-out of private payment solutions and a potential disintermediation of the banking sector, but creating an unattractive product would result in non-acceptance by consumers and enterprises.

3. The digital euro project

The Eurosystem is addressing these challenges in the digital euro project. Since October 2021, experts from the ECB and the Eurosystem national central banks have been working together in an investigation phase that will last 24 months. While many questions are yet to be answered, it is already quite clear which use cases the Eurosystem is focusing on in a first stage. We are aiming to make a digital euro available for payments in stores and in e-commerce, payments between people (P2P) and payments with public authorities. Further use cases could be added in subsequent stages. Our responses to these and other questions are informed by user needs. The Eurosystem is interacting with all stakeholders, including banks and other payment service providers as well as consumers, merchants, other enterprises and authorities.

When discussing the technology of a digital euro, we are open to innovation as long as it benefits safety and efficiency. Regarding back-end infrastructures, from a technological perspective both account-based and token-based systems could be an option. Regarding the customer-facing front end, smartphone wallets are an option, but so too are other means of access, since the euro should also be usable for less digitally savvy population groups. Concerning the customer interface, we will rely on the strong position and broad experience of the private sector. Therefore, banks will remain the "face to the customer". Thus, for banks, a digital euro would provide opportunities to not only include it in their payment solutions but also to create added value.

With the digital euro project, we as central banks are seeking to bring a symbol of our united Europe – the euro, as our single currency – into a digital future, one in which over 340 million people can pay – P2P, in stores and online – throughout the euro area using a truly European means of payment.

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The digital Euro – in the middle of the investigation phase

The primary aim of a digital euro is to maintain the accessibility and usability of central bank money in an increasingly digitalised economy. Firstly, public money and commercial bank money should continue to co-exist, be fully interchangeable and yet distinguishable. Secondly, a digital euro needs to be part of citizens' payment reality and be useful to them. The investigation phase of the digital euro project has been progressing towards ensuring that these objectives can be achieved.

From the interviews conducted by the Eurosystem with so-called focus groups it has emerged that, across all countries and age groups, people perceive the ability to "pay anywhere" as the most desirable feature of a new digital payment instrument so that, ideally, all euro area merchants (in physical stores or online) should be able to accept it. Moreover, whereas cash persists as the dominant person-to-person (P2P) payment means – and access to it will keep on being ensured – the second most valued feature is the possibility to make instant, easy, contactless payments, especially for P2P payments. P2P payments in digital euro may actually grow rapidly once convenient solutions become available. Ideally, a single device could provide access to a range of payment options.

The planned use cases of a digital euro have been identified bearing in mind the Eurosystem policy objectives and market segments relevance. As physical stores are the most important market segment for digital payments and the relevance of e-commerce is growing, both are the natural initial use cases for a digital euro. Moreover, it is difficult to imagine a digital euro which would not allow for person-to-person (P2P) payments from the outset.

Other use cases and functional features can be covered in the future. Machine-to-machine payments are often mentioned as an important new field. In principle, they are possible in an open banking / API based approach without DLT and they could be potentially implemented for a digital euro. That the potential for automated payments has not been exploited at all so far is neither due to them requiring DLT nor to an unavailability yet of a digital euro. But the digital euro will be open to such use cases which without doubt will grow over time.

Beyond the use cases, the digital euro project has investigated and progressed on specifying various dimensions of a possible digital euro. In particular, work has focused on the transfer mechanism used to validate and record transactions (peer-to-peer and/or via a third party), on the possibility to settle transactions with or without internet connectivity, on the privacy enhancing features, and on the tools to avoid an excessive use of the digital euro as a form of investment.

The investigation phase of the digital euro project is on track.

Different combinations of transfer mechanisms and connectivity options are being studied, such as a third-party validated solution for online payments and a peer-to-peer validated solution for offline payments. As the digital euro will be a Eurosystem liability, the Eurosystem would have the legal responsibility to fulfil claims from end-users, independently of who validates and records transactions. For an offline peer-to-peer validated digital euro solution, the settlement validation and recording may have to rely on secure local storage devices. For a digital euro solution that would work online with third-party validation, settlement validation and recording by the Eurosystem central banks as one operational entity would appear to be a solution.

Progress has also been achieved on the functionalities for funding and defunding the end users' digital euro position. The digital euro should presumably foresee elements of manual and automatic (contingent) funding and defunding. It should probably be up to the end-user to choose whether to activate or not (some of the) automatic funding and defunding functionality.

Concerning the distribution of the digital euro, a payment scheme-based distribution model appear as suitable option. Work to progress in this direction would include scheme development (including rulebook drafting), governance and operation; payment form factor and core payments service that the scheme will need to deliver; scheme access and requirements for supervised intermediaries to distribute the digital euro; compensation model for the scheme and for the digital euro.

The development of a back-end prototype has started in July, involving a multidisciplinary Eurosystem team. Concerning the development of the front-end prototype, out of the 54 companies that had expressed their interest, a handful have been selected with the aim to best cover the different use cases of peer-to-peer, offline, point-of-sale, payee/payer initiated and e-commerce.

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Digital euro: renewing public-private cooperation for the digital age

The payments landscape is moving quickly in the wake of digitalisation. Cash payments have been receding steadily in the Euro area in the past few years and the recent health crisis has accelerated this trend. Digital payment solutions have the wind in their sails, inspired by new consumption patterns and the demand of consumers for convenient and innovative payment services. In addition, the emergence of new technologies such as distributed ledgers, and the increasing footprint of new players such as Fintechs and BigTechs stand ready to reshuffle the cards in the payment value chain.

These trends raise significant strategic challenges for the efficiency, safety and sovereignty of our monetary system and for our strategic autonomy in payments.

The response from central banks to these challenges will necessarily be multifaceted. One part, ongoing, is the necessary regulation of actors and services under the "same business, same risks, same rules" principle. Another is potentially the issuance of a retail Central Bank Digital Currency (CBDC), which the Eurosystem is actively considering through its work on a digital euro: in 2021, the Eurosystem launched a 2-year investigation phase to outline its design and explore its implications.

Having a digital euro would respond to consumers' preference for digital payment solutions – including by allowing them to use central bank money in e-commerce, while also preserving confidence that bank deposits can be fully and freely converted at par in central bank money. It would contribute to safeguarding the anchor role of central bank money and the integrity of our monetary system.

Besides, a digital euro could also help fix deficiencies in the online payments market, covering needs and functionalities that the market only partially addresses. These include for example (i) offering a peer-to-peer solution for online and offline payments; (ii) enabling governments to pay grants or benefits to unbanked individuals; (iii) providing an infrastructure promoting innovation from intermediaries.

Our exploration of a digital euro aims to pursue and refresh the public-partnership that is at the core of our monetary system.

Finally, a digital euro also has the potential to support our strategic autonomy by fostering the development of a European payment solution. In particular, the digital euro could contribute to the success of the European Payments Initiative (EPI), which brings together major European banks as well as large non-bank acquirers. This initiative could be used to distribute the digital euro, thus contributing to its attractiveness, and therefore increasing the sovereignty of the Euro area.

While a digital euro could be part of the answer to the challenges we are facing, it also raises challenges that need to be met before we can decide on its issuance. One of the most prominent ones relates to the way in which a digital euro would involve intermediaries. The coexistence of central bank money and commercial bank money is at the core of our two-tier monetary system. To strike a proper balance between a CBDC and commercial money and preserve the smooth functioning of our payment ecosystem, the Eurosystem can leverage several tools.

First, the Eurosystem will ensure that the digital euro is used primarily as a means of payment rather than as a store of value. To do so, we are considering setting a limit that would cap the amount of digital euros that an individual could hold. In addition, a disincentive remuneration could be envisaged.

Second, the digital euro aims to integrate into the current retail payment market, leveraging banking intermediaries' strong expertise in client relationship and retail payment systems. In this sense, the private sector would be responsible for the distribution of the digital euro to end-users, providing payment services and managing customer CBDC holdings. Like for cash today, the role of central banks should be limited to issuing the digital euro and making it available to intermediaries.

Overall, our exploration of a digital euro aims to pursue and refresh the public-partnership that is at the core of our monetary system, in which central banks and commercial banks fulfil different yet complementary roles to guarantee the efficiency of the payment system. It should not lead us to depart from the longstanding convention already stated in the seminal report published by the Committee on Payment and Settlement Systems (CPSS) in 2003 that central banks avoid competing with commercial banks in payment services provided to the non-bank public.

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The Digital Euro can benefit consumers and businesses

Preferences in the way Europeans spend, save and invest are becoming more digital, especially after the Pandemic. The use of cash is mostly declining while the use of easy, instant, electronic payments methods is increasing. In this scenario, it is paramount to enable the Euro to adapt to the evolution of the financial system. Central Bank Digital Currencies will uphold the role of public money in the digital world, ensuring its accessibility and usability, as it will offer additional means of payment in a fast and secure way and will contribute to inclusion at a time when a large reduction of bank branches is disfavouring vulnerable customers. On top of that, projects such as the Digital Euro would ensure open and integrated standards for payments to emerge, meaning new forms of interoperability between banks, digital wallets and small businesses. With the upcoming arrival of foreign CBDCs and the presence of large private actors offering attractive non-Euro-denominated payment solutions, we need to contemplate options to preserve the value of our currency, maintain financial stability and safeguard monetary sovereignty.

The digital payment system is strategically relevant for Europe's economy. Thus, we need a European payments market self-reliant in EU payment solutions, infrastructures, technologies and services operating on a level-playing field, that are able to respond efficiently and with high security and trust standards to Europeans' necessities. It is also of paramount importance that privacy and security are integral to the make-up of the Digital Euro. These aspects are key both to consumers and to businesses in order to gain their trust in the project.

The capacity to drive European cutting-edge innovation able to compete with global actors, will determine Europe's autonomy. The infrastructure for the Digital Euro must be designed bearing in mind the need for innovation based on its uptake.

A Digital Euro should allow synergies among market participants and contribute to create new services and products. Simultaneously, it should serve as an instrument to project global finance, contributing significantly to improve cross-border payments with non-EU jurisdictions, thereby making the EU financial market more attractive internationally.

The Digital Euro can help advance economic efficiency by offering a European digital means of payment that would be built on a European infrastructure and would meet Europe's societal challenges.

The digital payment system is strategically relevant for Europe's economy.

The vast majority of innovative digital retail payment solutions are not available across Europe. Customers are lacking a one-stop solution that allows instant payments irrespective of the platform used by the payers and payees. This would reduce the use of multiple cards, devices and ID solutions and give them access to a variety of payment options on a single device.

The Digital Euro will be helpful in overcoming structural fragmentation as if it operates in a centralised space based on common standards and infrastructure methods.

The future European payments landscape will be characterized by the interaction between private and public initiatives. As the significance of crypto-tokens grow, it is therefore important that the EU builds a safe ecosystem to mitigate risks and maintain trust and integrity in the financial system. While crypto-tokens and CBDCs are different in nature, both participate in the financial ecosystem. However, full and easy interoperability between Crypto-assets and the Digital Euro is important to ensure its right convertibility, acceptability, and portability.

The Digital Euro is a flagstone policy to reflect digitalisation trends. It does come with risks as it will be a new project and it must be calibrated in the right way. It is therefore important that the ECB and the EU institutions work closely together to develop the project.

As already said, for the European Union it is crucial to enhance its own digital payments space. From a Regulatory perspective, ensuring a level playing field is essential.

As the Digital Euro moves closer to a reality, it is important that we bear in mind the many aspects mentioned here which could ultimately affect its ability to succeed and be welcomed by consumers as a positive step forward for the Eurozone.

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Do we really need a digital euro?

We are going through an exciting time in the retail payments space. The development of instant payments; new forms of private money such as stablecoins; consumer needs are changing very fast and payments are becoming more digital and contact-less. Central Banks need to explore opportunities arising in this new space, including the possibility of issuing CBDCs.

Europe has today a well-functioning and innovative payments market. I am not convinced that a digital euro would add significant value for retail users in their daily payments. Studies show that users and merchants feel well served by the range of payment options available. In some countries, like Spain, a widespread P2P payment solution is already in place (Bizum[1]).

We could think however about scenarios in which a digital euro might become necessary although, so far, these scenarios have not materialized. For example, if cash becomes unavailable for citizens' payments. Or if a widely adopted non-euro based stablecoin or foreign CBDC were to challenge European monetary sovereignty.

We are not in any of those scenarios as of today. Cash remains the main payment method in the Eurozone, even after the pandemic, and commercial bank money is perceived as safe and secure. According to Kantar's report, being able to hold risk-free central bank money may not, on its own, be a strong incentive for the adoption of the digital euro. Besides, regulatory initiatives on the way, such as MiCA, would also ensure that significant stablecoins would not create such risks in the EU.

However, Europe must be ready to introduce it should the need arise. European authorities need to understand in advance potential benefits and risks, as well as whether those benefits could be better achieved with alternative solutions. Besides, the discussion about CBDCs is global and the ECB cannot be indifferent to what other central banks are doing. International coordination is key to avoid creating risks for the global economy and to take advantage of the benefits that interoperability could bring to the efficiency of cross-border payments if CBDCs were issued.

At the same time, I consider that the ECB should not commit itself to a timetable in order to take a decision, which seems to be its approach so far. A digital euro must have a clear purpose and offer tangible benefits in response to specific needs. If those conditions are not met, the digital euro would become a solution in search of a problem.

Europe has a well-functioning and innovative payments market.

Which could then be the right design? On this question I would highlight 4 priorities:

- The digital euro should be designed to serve as a means of payment, and not as a store of value. Authorities agree on the potential impact of CBDCs on financial stability and monetary policy. CBDCs could be easily understood as a safer store of value than the money held in commercial banks, particularly in times of uncertainty or crisis. The ECB should set caps to individual's digital euro holdings, to avoid significant outflows of commercial bank deposits into the digital euro, which could affect the financing capacity of the banking sector. It is key to ensure that banks can continue performing their role of financing the economy.
- The ECB should be ambitious on its design. The digital euro should incorporate advanced features ensuring that the digital euro is competitive, future proof, and drives payment innovation. Compared to existing means of payment, the main opportunities to add value are in the development of programmable payments, as well as in offline payments, where it could become a reliable alternative to cash payments.
- There is broad consensus that access to the digital euro should be provided through authorized intermediaries (i.e., banks, payment institutions, e-money issuers...). The two-tier model has proven to be successful, and the private sector is probably the best placed to manage customer relationships and provide value-added services. It should be the private sector the one to provide value-added services to customers and innovate, based on the development of profitable business models.
- Finally, privacy has been highlighted as one of the most important features of a digital euro. It should not be confused with anonymity which would raise concerns against money laundering and financial crime. But more than this, payments data play an essential role in the provision of financial services, e.g., to provide more credit. GDPR sets the right framework to ensure a responsible access to transactional data. With the consent of the user, intermediaries should be able use the data to create value-added services.

Policymakers and banks must continue to work together to find the best way forward, ensuring it is designed in a competitive manner, preserving the essential role of banks, and protecting the interest of consumers.

[1] Bizum is a mobile payment solution, as a result of the collaboration of the vast majority of banks in the Spain to create a system for instant payments between individuals and purchases in PoS. It currently has more than 20 million users.

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The digital euro – right questions, wrong answer?

Central banks the world over have piled into central bank digital currency (CBDC) research and piloting. Problems identified by central banks are real and justify a response. Yet it is actually far from clear that CBDC is always the best solution to address the problems raised. Particularly in Europe, other policy responses may yield the same or better outcomes. This article looks at four prominent justifications for CBDC in the Eurozone: the need for access to public money in a digital world, the threat of large online platforms, excess dependency on non-EU payment solutions, and geopolitical considerations.

The European Central Bank Central (ECB) argues that "it is imperative to ensure that [people] continue to have access to central bank money" in an increasingly digital world. Public money is needed as a 'monetary anchor'" (ECB 2022). But is it indeed the case that "private" money (such as bank accounts we all know and use today) can only function if people have access to central bank-issued money, such as banknotes and coins? The ECB-commissioned Kantar study (2022) into people's payment habits struggled with the fact that many people don't realise, understand or care about the difference between central bank and commercial bank-issued money. So perhaps people are perfectly happy to pay with digital "private" money, knowing that the central bank continues to be at the centre of the system, with a wide array of tools to guarantee the stability of money.

The initial motivation for central banks to consider CBDC was to counter the threat of bigtech platforms issuing their own currency. Yet bigtechs issuing stablecoin not denominated in domestic currency, can effectively be addressed by regulation. The EU's Markets in Crypto Assets Regulation (MiCAR) does exactly that, preventing such coins from becoming too large in payments. Meanwhile, domestically denominated stablecoins will require an e-money or banking license. Hence financial stability can be preserved by the full force of existing supervisory tools, and these coins are subject to domestic monetary policy as well. So why should CBDC be preferable over a well-regulated domestically denominated stablecoin?

Large platforms are ideally positioned to integrate CBDC services into their payment systems.

But how then to prevent large online platforms from deploying digital currencies to increase user lock-in and further strengthen their dominant position? Well, legislative initiatives such as the Digital Markets Act seek to address this. And it is important to realise that platforms do not derive their lock-in power from issuing their own currency. Instead, they thrive by providing seamlessly integrated payments as part of an impeccable customer experience. As the BIS notes in a recent paper, a "core aspect of big tech business models is to run easy-to-use payment systems" (BIS 2022). In other words, it's not about the underlying currency, it's about the payment infrastructure on top of it. This means that a CBDC could in fact play into large platforms' hands! Most of them are already licensed to act as Payment Service Provider. They are ideally positioned to integrate CBDC services into their payment systems, roll out solutions across Europe and thus further optimise their customer experience.

The digital euro is also positioned as a tool to avoid or reduce dependency on a small number of non-EU-based solutions. Yet here too the question arises whether the goal justifies the means. How is adding another form of digital currency going to help reducing existing dependencies? A CBDC will still need an infrastructure to actually use it for payments. A better targeted response to the concern of excess dependency would be to develop an alternative EU-based payment scheme for digital and online payments. Such a scheme could then process commercial bank money, stablecoin and even crypto payments – no CBDC needed.

Finally, an opportunity identified by policymakers is the possible use of CBDC as a tool to strengthen the euro's position on global trading and financial markets. Yet a CBDC focused on a domestic retail audience, such as the digital euro, is unlikely to make an impact on such global markets. To strengthen the international role of the euro, a focus on large-value, cross-border and cross-currency payments would be needed.

Indeed the ECB and other central banks are looking into what is called "wholesale CBDC", while private parties are also investigating digital currency platforms backed by central bank reserves. Yet wholesale digital currencies have very different characteristics and requirements than the retail variety. They are therefore generally treated as separate projects.

In short, while central banks and policymakers have put a number of very valid concerns on the agenda, it is highly doubtful whether a retail-focused CBDC is a sufficient or even necessary answer.