
DIGITAL EURO



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The digital €uro: Reshaping the future of Europe's financial landscape

Digitalisation is fundamentally changing the way we pay for goods and services in our everyday lives and how financial market transactions are settled. Central banks all over the world have been focussing their efforts on digital forms of currency for quite some time now, and understandably so. Central banks within the euro area are no exception here. In fact, the Eurosystem is now one of the currency areas that is furthest advanced with its preparations for the possible introduction of a digital central bank currency (CBDC) – the digital euro.

The Bundesbank has identified CBDC as its top priority and has consequently assumed a pivotal role in the work of the Eurosystem. As the largest central bank in the Eurosystem, the Bundesbank is determined to play an instrumental role in shaping the future of the European financial ecosystem – one which not only provides true value added for consumers, merchants and financial institutions alike, but which

also redefines the future of payments in Europe.

In December of last year, the European Central Bank (ECB) released its second progress report on the digital euro preparation phase, which outlines the many milestones that have already been reached in the preparation phase to date. The main achievements include 1) a comprehensive update to the digital euro scheme rulebook following a joint review with consumers, retailers and payment service providers, 2) the conclusion of the call for applications to select potential external providers and publication of an invitation to tender and 3) the launch of new research to incorporate users' digital euro design preferences. The Bundesbank engages in all the workstreams to support the Eurosystem in these undertakings.

Extensive engagement with internal and external stakeholders, including the general public, market stakeholders, and policymakers, also continued to be a key focus of the project. Communication with all relevant stakeholders and ensuring a maximum level of transparency throughout all phases of the project are essential in order to ensure the long-term success of the digital euro project. The Bundesbank also played a key role in this regard by stepping up its efforts in the area of stakeholder management and in its public relations work by engaging in a regular and intense dialogue with key market players and also with the general public in order to raise awareness for the digital euro and the motivations behind the project.

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In parallel, the ECB is working with experts from the Eurosystem national central banks, including the Bundesbank, to develop a methodology for setting digital euro holding limits with a view to striking a balance between user needs and expectations on the one hand and monetary policy and financial stability implications on the other.

The digital euro in its retail form for the day-to-day payments of European

citizens is, however, just one of three elements that the Bundesbank is currently working on in line with its long-term vision to help reshape the European digital financial landscape of the future. Wholesale CBDC for the settlement of financial market transactions between banks in central bank money is a second important business area in which the Bundesbank is currently hard at work. In addition to the retail variant, our focus is therefore now also on implementing a short-term wholesale solution to meet the immediate and growing needs of the market, whilst, at the same time, continuing to work on a long-term solution for wholesale CBDC.

Given the current geopolitical climate, the need for a united Europe has never been more pressing. This geopolitical shift provides both the Bundesbank and the Eurosystem with a unique opportunity to take on a leading role and set global standards in payments and work towards redefining a financial market ecosystem for the future of Europe. The Bundesbank's active involvement in the Eurosystem's endeavours only goes to highlight the collaborative effort required to address the challenges we currently face in European payments – such as reducing the high level of market fragmentation and the over-dependence on non-European providers – thereby strengthening the resilience, autonomy and efficiency of the European payments market.



MADIS MÜLLER

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The Digital Euro: future-proofing payments in Europe

Europe faces mounting challenges ranging from geopolitics, cyber and hybrid threats to the ongoing war in Ukraine, underscoring the urgency of strengthening its financial infrastructure. A digital euro is key to ensuring that payments can be made seamlessly across the euro area both in times of stability and systemic disruption. Its legal framework must be approved swiftly so that “digital euro cash” can be established as a public service, allowing the ECB and the Eurosystem to proceed with its implementation.

A report by former Finnish President Sauli Niinistö on how to enhance Europe’s civilian and military resilience urged to embrace the boldest common denominators and embed “preparedness-by-design” into regulatory frameworks. So how would this principle apply to the digital euro? Estonia could provide a case study.

Being a digital frontrunner, Estonia already has highly rated banking wallets, card payments, and instant transfers. Surveys in 2023 and 2024 found that businesses and citizens rate the existing payment solutions highly, which makes it dubious what value the digital euro could add in normal times. The dominance of international card networks in Estonia and across Europe demonstrates their reliability and no truly pan-European alternative has emerged despite decades

of private-sector efforts. Global card schemes have bolstered resilience with offline transaction capabilities, but this measure remains hard to scale because of the credit risks. From 2025, Estonia’s crisis regulations requires vital service provider banks to allow offline card payments for essential purchases in an emergency, providing a crucial buffer for recovery in the event of severe disruptions.

Private-sector digital payment systems or banking IT infrastructure (including ATMs) failing for an extended period would cause a national crisis, and the public would inevitably turn to the government for help. Cash is for now the only fall-back, but it can be impractical in a digital society. Consumers rarely hold much spare cash and the authorities do not have a secure, scalable distribution network, making cash-based solutions costly and complex. Instead, the digital euro should be designed so it can sustain payments during a crisis, avoiding reversion to cash.

A robust digital euro framework is essential for national preparedness against payment system disruptions. Broad adoption, with predefined holding limits to protect financial stability, is key. Encouraging citizens to use a standalone digital euro wallet and hold “digital euro cash” remains a challenge, but such wallets offer greater resilience against cyberattacks that target the digital infrastructure of the banks and provide seamless flexibility when switching banks. The banks, in turn, must enable customer connectivity to the standalone digital

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euro wallet, which would be offered free of charge. Given consumers’ reluctance to manage multiple wallets, the SEPA instant payments-based European Payment Initiative’s Wero wallet, rolling out in France, Germany, and Belgium, could serve as an alternative if made interoperable with the digital euro.

Offline transaction capabilities must also be integrated with digital euro wallets so that digital euro cash can continue to function during a service outage. Keeping transactions uninterrupted will need digital euros to be stored on smartphones or payment

cards. A more severe crisis like a hybrid attack that disrupts access to customer’s funds on their bank accounts might need governments to facilitate offline digital euro top-ups for social benefits or economic support. Mechanisms must similarly be developed to sustain business transactions.

Offline digital euro transactions would maintain the same privacy protections as cash, which is an innovative feature that current digital payments do not have. However, AML and CTF regulations will determine the acceptable offline limits that will need to be flexible in a crisis. Additionally, legal and infrastructure support is needed for Member States to deploy the digital euro as a national contingency measure. This temporary solution must respect user privacy and balance it with the need for emergency payments, including the ability to continue receiving payments beyond the standard holding limits if the waterfall account connected to the digital euro wallet is not available.

There is an ongoing shift towards alternative payment methods, including crypto assets based solutions. As the US seems to be relying increasingly on crypto assets based alternatives from the private sector, the digital euro has the potential to become the leading global central bank digital currency and to strengthen the euro’s international role as a global payment instrument.

Today’s political and legal debates will shape Europe’s financial resilience. The boldest common denominator is to fortify the euro area’s digital payment infrastructure and that must guide the strategic compromises to ensure stability and strength in the years ahead.



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Digital euro: safeguarding the existing order of our financial system

The digital euro represents a digital version of cash issued directly by the European Central Bank and Euro-area national central banks, including the Central Bank of Cyprus. It is intended to complement physical cash, ensuring that citizens and businesses have access to a safe, universally accepted form of money in an increasingly digital world. While the digital euro promises several benefits, including increased payment efficiency, enhanced cross-border transactions, and greater financial inclusion, it also raises concerns about the potential disruption of the existing roles and functions of financial intermediaries.

Aside the consequences from the continued decline in the use of cash, and the digital transformation that has made payments ubiquitous in the public's routines, the established role of banks is being challenged mainly due to the entry of new players outside the realm of traditional banking. These include crypto-asset issuers and big techs that hold entrenched market power and have the capacity to inhibit competition and efficiency. If central banks were to overlook such potentially disruptive developments, we may likely witness

an oligopoly of private issuers. The preparations for launching a digital euro have at their core the maintenance of the healthy co-existence of central bank and private money: both must continue to be interchangeable and yet identifiable.

The Eurosystem recognises the importance financial intermediaries currently play in facilitating payments and transactions and for the allocation of credit to firms and households, as well as the role of bank deposits for the provision of liquidity to financial institutions. They will continue to do so with the introduction of the digital euro. In order to preserve this status quo, caps will be introduced for individual digital euro holdings, potentially without incentives regarding remuneration. The ECB is working closely with the financial sector to calibrate holding limits based on three key pillars: usability, monetary policy, and financial stability.

Communication with
all stakeholders is
key for smooth and
effective integration
of the digital euro.

By adopting these safeguards, the Eurosystem aims to strike a balance between fostering innovation and preserving the stability of the financial system. It is important to note that holding limits will not restrict payment capabilities. Consumers will still be able to execute digital euro transactions exceeding the holding limit through linking their digital euro wallets to a payment account with a financial intermediary, thereby eliminating the need to hold positive digital euro balances at all. On the other hand, while merchants would accept digital euro payments, maintaining digital euro balances would not be possible, thereby leaving intact the banking system's corporate deposit base.

Moreover, the digital euro is being designed as a payment instrument and not an investment means or a savings product. It's also important to consider that bank deposits can always migrate to providers of stablecoins or other digital assets. Thanks to the mitigation measures that are thoroughly investigated, the digital euro is not expected to be a significant source of concern for banks' funding. Besides, banks always have the option to increase remuneration rates to avoid losing deposits as a source of refinancing in the long-term.

The objective is to safeguard the existing order of our financial system. Supervised banks and non-banks would distribute the digital euro to their customers without changing existing customer relations. Intermediaries would have economic incentives to distribute the digital euro through a fair compensation model, the functioning of which will be legally enforced. The digital euro would open a new source of revenue for intermediaries to provide value-added services to their customers, such as recurring payments for bills or digital service subscriptions, or pay-per-use enabled via pre-authorisation.

The Central Bank of Cyprus reports with the local market in a number ways to raise awareness. Communication with all stakeholders is key, and it is done both through addressing the public at large with speeches, articles and interviews, but also directly with the intermediaries through focus sessions addressed to the National Payments Committee. Such initiatives foster transparency, cooperation, and a shared commitment to a smooth and effective integration of the digital euro. The Central Bank of Cyprus also encourages innovation partnerships; one of the largest Cypriot banks is actively participating in the ECB's innovation platform, conducting technical testing of innovative use cases. We intend to further intensify our exchange with intermediaries. We encourage our market to be informed by reliable sources, namely from the communication channels of the European Central Bank and the Central Bank of Cyprus and by a continued open dialogue.



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Securing Europe's Sovereignty in Payments Together with the Banking Industry

A Digital Euro can only be successful if it is embedded within a competitive European payment ecosystem. Geopolitical developments highlight the urgent need for Europe to establish an independent, resilient, and innovative payment infrastructure to safeguard its economic sovereignty in the long term. The continued reliance on payment solutions developed outside of Europe for individuals and businesses within the EU underscores the necessity of decisive action. The European banking sector has already demonstrated its ability to provide competitive payment solutions—now is the time to further develop and strengthen these solutions through a coordinated European strategy.

However, the Digital Euro is only part of the solution and, on its own, cannot address the challenge of European payment sovereignty. Due to its current regulatory and operational framework conditions, the project harbors considerable risks: High complexity and implementation costs, unclear market incentives and potential distortions in competition threaten existing payment

offerings, rather than complementing them. Furthermore, current plans do not foresee seamless integration with existing private-sector payment systems such as SEPA or initiatives built upon them, like Wero or Bizum. These risks create unnecessary duplications and additional costs.

The path to greater sovereignty does not lie solely in a centrally controlled digital currency, but rather in competitive, private-sector-driven European payment solutions. Banks and payment service providers already have the infrastructure, expertise, and market reach to deliver viable euro-area solutions within the next two years. Existing payment infrastructures can be strategically enhanced to establish European standards and close the gap with non-European market leaders.

Close cooperation between legislators, the ECB and the banking sector is essential to develop a pragmatic solution that strengthens European competitiveness while maintaining a clear balance between central bank money and private-sector payment solutions. Instead of establishing costly parallel structures, existing European payment solutions such as EPI/Wero and Bizum should be actively supported to create a strong European alternative to global offerings.

The objective must be to create a fully functional digital payments ecosystem that serves consumers, businesses, and banks alike. If desired by legislators, a digital euro could play a role as legal tender, but only if it is seamlessly integrated into existing systems and avoids competitive distortions—in other words, only if it is well designed.

Sovereignty lies not just in digital central currencies but also in private, competitive solutions.

A digital euro will only be successful if it is accepted by the citizens and economy of Europe. This presupposes that the legal framework for the introduction of the digital euro meets requirements under the rule of law, thus creating legal certainty and predictability. The design of the digital euro must remain within the mandate of the EU legislator and, at the same time, respect the basic right to entrepreneurial freedom of market players. It is crucial that the legal framework conditions

are clearly defined, particularly with regard to the application of national requirements (inter alia, property law) when transferring the digital euro and/or applying EU payment services legislation.

The increased focus of the Eurosystem on wholesale central bank digital currency (Wholesale-CBDC) is a positive development. Authorized financial institutions could achieve significant efficiency gains, for example, by reducing risks and settlement times in capital market transactions. The Eurosystem is pursuing a dual-track approach: developing a solution that provides a secure and efficient connection to existing TARGET services while simultaneously evaluating a long-term integrated solution. A successful implementation could strengthen European competitiveness sustainably. Now is the time to take the next step and work towards prompt implementation in cooperation with the private sector. The Savings Banks Finance Group therefore strongly advocates for the swift introduction of a Wholesale-CBDC.

A close alignment between policymakers, regulators, and the financial sector is crucial to ensure that Europe does not become dependent on payment systems developed outside its borders. Time is of the essence—now is the moment to actively support private-sector European solutions and work alongside legislators and the ECB to create a sustainable regulatory framework, thereby safeguarding Europe's long-term sovereignty in payments.



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Digital Euro: What's in it for the consumer?

The strategic rationale behind a retail digital euro

The European Central Bank (ECB) advocates for a retail digital euro based on three main arguments: the risk of private digital currencies undermining central banks' ability to enforce monetary policy; the decline of cash, which could weaken the anchoring role of central bank money; and Europe's strategic independence, given that its card payments are largely dominated by a non-European duopoly.

Recent international developments highlight Europe's reliance on non-European payment technologies. In the past, foreign sanctions imposed on countries not embargoed by the EU led to European payment cards being rendered unusable in those regions. Could Europe itself, one day, be prevented, through technology, from using its own payment cards at home? The idea may seem far-fetched, but it is an increasingly relevant question.

These strategic arguments hold weight for the ECB, governments, policymakers, bankers, and economists. But will they influence the payment habits of European citizens?

Why do consumers change their payment habits?

Convenience, ease of use, added benefits (such as loyalty schemes and insurance),

and perceived security are key drivers of consumer payment choices. What about cost? While access to payment services often incurs fees (e.g., card subscriptions or ATM withdrawals), their day-to-day usage is typically free for consumers. Unless they are willing to cancel their existing payment methods—and thereby forgo associated benefits—cost alone is unlikely to be a decisive factor.

Even though the Covid crisis accelerated online and contactless payments, shifts in payment habits tend to be slow. For instance, while contactless payments may seem like a rather recent innovation, their introduction started some 15 years ago.

Consumers hold the key to success, not merchants

What would motivate consumers to use the digital euro?

“To pay in digital euros, you must subscribe to a digital wallet, purchase digital euros with ‘ordinary euros’, and then use them for payments—something you could have done just as easily with your preferred payment method. Got it? If you're still unsure, just do it for strategic reasons!”.

This scenario does not sound particularly appealing to the average consumer. So, why would EU citizens adopt the digital euro? Convenience? Privacy? Unlikely.

One could argue that merchants will drive adoption by promoting the digital euro due to the lower transaction costs mandated by law. However, experience suggests otherwise. If merchants dictated payment trends, the most successful closed-loop international payment card—despite its hefty fees—would have disappeared long ago, along with the leading online payment wallet preferred by consumers hesitant to share their card details. Both systems charge merchants significant fees but remain popular with consumers, ensuring their continued acceptance.

Ultimately, only the consumer determines the success of a payment method—period.

Potential impact of the digital euro on financial intermediaries and merchants

One certainty is that mandatory distribution by banks and mandatory acceptance by merchants will require considerable investment on both sides. Taxpayers will also bear the costs of implementation by the ECB and all public services that will be required to accept the digital euro—schools, hospitals, post offices, sports facilities, and more.

The extent to which the digital euro reshapes the payment landscape will depend on adoption speed. While hundreds of experts are working on its technical aspects, few—if any—seem focused on marketing. Yet the fundamental question remains unanswered: what's in it for the consumer?

Could banks and PSPs drive adoption?

Could distributors build public trust and encourage digital euro adoption? Without clear consumer benefits beyond strategic considerations, convincing users will be a challenge.

Another critical question remains: what's in it for the distributors and acquirers? They must make substantial investments, yet the service must be free for consumers and cheaper for merchants than existing payment options. This means that the likely deficit will fall on the industry.

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If the ECB and other promoters of the digital euro want banks and PSPs to embrace it, two conditions must be met:

Distributors must have confidence that consumers will adopt the system—something that remains uncertain.

A sustainable business model must be in place, ensuring intermediaries have financial incentives to promote usage.

Conclusion: Towards a wholesale digital euro?

There remains scepticism about the retail digital euro. However, banks broadly support the introduction of a wholesale digital euro based on distributed ledger technology (DLT). Such a currency is urgently needed to develop sovereign European digital finance and reduce dependence on foreign currencies. This strategic challenge must be addressed to safeguard Europe's financial autonomy.



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The success of the digital euro depends on public trust

In an increasingly digitalised society, the ECB does not consider it sufficient to continue to provide the EU's government-issued legal tender only in physical form. It identifies the possible large-scale substitution of cash by commercial bank money as a potential source of systemic risk that could undermine trust in the euro in the long term and sees dependence on mainly US providers for POS and e-commerce payments as a potential threat to Europe's strategic autonomy. The digital euro project is therefore mainly driven by macroeconomic and strategic geopolitical concerns. However, the digital euro will only achieve its objectives if it is widely accepted and used by the public. So far, neither the ECB nor the EU Commission has been able to provide a clear rationale as to why users would choose to switch to this new solution and abandon their current payment methods.

Besides, we also have strong doubts about the ability of the digital euro, as it is currently conceived, to foster Europe's strategic autonomy at all. The digital euro could replace dependence on US card schemes with dependence on mobile phone operating systems, which are also American.

But let's turn our attention back to the customer perspective. Even if the digital euro were to offer a compelling use case for citizens, a high user adoption rate will only be achieved if there is a high level of trust in the security, integrity and data protection. Multipliers will be required to reach non-digital natives and encourage them to try this new payment method. The ECB therefore needs the support and goodwill of Europe's retail banks. Banks can play an important role in bringing a new product to the market, especially universal banks that are strongly rooted and have many branches where non-digital natives can actually talk face-to-face with their client advisor.

However, to be able to support the digital euro and actively recommend its use to our customers and members, we first need to be convinced of the product ourselves. And here we stand at a crossroad where still many decisive questions remain unanswered. Apart from concerns about financial stability and costs, we need answers to the added value for our customers and the level of privacy, which is a very important issue for Austrian customers. These decisive questions have to be answered by the ECB before all stakeholders can build their final opinion.

The digital euro will only achieve its objectives if it is widely accepted and used by the public.

It's up to the ECB and the legislator to ensure security and privacy of digital euro transactions and to design the digital euro in such a way that it can't pose a threat to financial stability. Banks frequently take a stand and make suggestions both in the political process and in ECB's consultations. For example, a lot of banks support the availability of an offline functionality from the first day of the digital euro's issue. Compared to the online version it would be more complementary to cash characteristics and works without connection to the DESP. Therefore, an offline digital euro would be more resilient, since the centralisation of transactions on a single ledger held by a public institution can create a vulnerability to individual privacy as well as an opportunity for cyber-attacks.

What remains to be clarified, however, is whether the privacy provided by the offline function will be design-based or policy-based. Only in the former

case would privacy be irreversible and embedded in the system itself. In the latter case, privacy could always be modified or overruled retrospectively. In our view, only the first of these two options provides sufficient protection for users and can ensure public trust. The decision on whether anonymous payments will be possible with the digital euro and the level of privacy protection will be taken by the ECB and the legislator, i.e. politicians.

Regarding safety issues, it is imperative to differentiate between technical problems and fraud. Dispute resolution should be strictly limited to malfunctions directly related to the PSP-customer relationship and technical incidents as the digital euro will be a legal tender recorded on the ECB's balance sheet. Moreover, since the digital euro, unlike credit cards, can only be used within the euro area, and since every EU Member State has courts that provide adequate legal protection, there is no need for commercial dispute support or chargebacks. A different legal process depending on whether a payment is made in cash or in digital euros, which are both legal tender and central bank money, could undermine public trust not only in the euro but also in the rule of law.