SPEECH

Harnessing the digital future of payments: Europe's path to sovereignty and innovation

Speech by Piero Cipollone, Member of the Executive Board of the ECB, at the France Payments Forum event “Digital euro and the future of payments in Europe”

Paris, 15 May 2025

Thank you for inviting me to discuss the future of payments and the digital euro.

Most people associate the adoption of the euro with the launch of euro banknotes and coins. While the euro was introduced for accounting purposes in 1999, we tend to feel it only became our money three years later once we started paying in euro cash around Europe. Euro banknotes and coins made the currency the tangible symbol of a united Europe.

A strong currency also comes in tandem with strong payment systems. We offer payment infrastructures that form the plumbing of the financial system. Though less visible than banknotes and coins, these infrastructures are key to our monetary and financial integration.

Retail and wholesale payments are hence an integral part of our tasks at the central bank. We issue cash, supply reserves – the ultimate liquid asset – to banks and operate payment systems, thereby supporting our economy by enabling euro area transactions that are secure, risk-free and European. This is what preserves our economic stability and our monetary sovereignty.

Building on this reliable base, private sector firms can then offer their own solutions, without their customers having to worry about the money they use. One euro is one euro, because private money can be converted to cash at all times and because financial transactions can be settled in central bank money – the only risk-free asset there is.

So today, I want to focus on how we can make our currency future-proof and enhance the integration, competitiveness and resilience of European payments in the digital era.

As people increasingly prefer to pay digitally and online commerce expands, the role of cash as a universal payment solution is declining. We thus risk being left without a European solution that allows us to pay throughout the euro area in all situations. To restore the central role of cash, we need to complement physical cash with its digital equivalent, a digital euro. Making central bank money available in digital form might seem like a small and obvious step, but it is in fact an essential one for overcoming the entrenched and longstanding fragmentation of our payment market. The digital euro will achieve this directly by modernising the supply of public money and indirectly through its infrastructure and acceptance network, which private payment service providers can leverage to expand and innovate on a European scale. Ultimately, a digital euro will enhance the competitiveness of European providers and their ability to offer all types of digital payments to European consumers.

The situation is different for wholesale financial transactions as we already offer settlement in digital central bank money and do not face the same dependencies. However, market participants increasingly expect that tokenisation and distributed ledger technology (DLT) will transform financial transactions by enabling assets to be issued or represented as digital tokens. We are currently expanding our initiative to settle DLT-based transactions in central bank money. By making central bank money available, we avoid the risk of other settlement assets being used, such as US dollar stablecoins, which would reintroduce credit risk, fragmentation and a dependency on non-European solutions.

We are progressing on the retail and wholesale fronts in parallel. In both cases, Europe needs its own, sovereign money for the digital era, so that it can harness the benefits of integration, innovation and independence. In the words of the late French economist Michel Aglietta, money is not just a technical device, it is an essential institution.[1]

A digital euro for everyday payments

Let me first discuss the rationale for the digital euro and the benefits it will bring.

Currently, cash is the sole sovereign payment method across the euro area. It offers Europeans a convenient, secure and universally accepted way to pay and store value, ensuring financial inclusion. Cash also upholds the resilience of our payment systems and economies, acting as a reliable fallback during crises such as cyberattacks or power outages. This is why we remain strongly committed to cash.[2]

However, digital payments have gained popularity, with online shopping accounting for more than a third of our retail transactions. This means that acceptance of and access to cash are no longer sufficient to cover a growing share of payment situations. In value terms, cash payments made up only 24% of day-to-day payments in the euro area last year.[3]

Lacking a genuine European payment solution that works across the euro area, we are left critically dependent on foreign payment providers.[4] Currently, nearly two-thirds of euro area card-based transactions are processed by non-European companies while 13 euro area countries depend entirely on international card schemes or mobile solutions for in-store payments.[5] And even where national card schemes are available, they require co-badging with international card schemes to facilitate cross-border payments within the euro area or online shopping. Moreover, mobile apps and e-payment solutions are dominated by foreign solutions like PayPal, Apple Pay or Alipay. And they partner with international card schemes to further reinforce their position and expand their reach: PayPal has just announced that it will start enabling contactless payments in Germany, using Mastercard technology.[6] Looking ahead, our dependency could soon extend to foreign stablecoins, 99% of which are dollar-denominated in terms of total value.[7]

As a result, European payments face three significant challenges.

First, we need to ensure our strategic autonomy and monetary sovereignty. Our overreliance on foreign payment providers makes us dependent on the kindness of strangers at a time of heightened geopolitical tensions. I trust that this risk is well understood in the country of De Gaulle. There is no true sovereignty without sovereign money.[8] As my dear colleague Banque de France governor François Villeroy de Galhau has remarked, this is as true in the 21st century as it was in the past.[9]

Second, we should simply ask ourselves why there is no Europe-based international card scheme. I would say it’s because we suffer from a lack of competitiveness and innovation. European payment service providers focus on their home country and struggle to compete on a European level, let alone on a global one, limiting their ability to drive large-scale innovation. The cost of investing in a European-wide acceptance network has often discouraged European payment service providers from offering a European card payment solution.

These failures come at a high price: the dominance of non-European providers stifles competition, leading to higher costs for merchants and consumers. And when transactions are conducted through international card schemes, European banks lose fees. When transactions are made on apps such as Apple Pay or PayPal, they lose fees and data. And if the use of US dollar stablecoins becomes more widespread, the banks could lose, fees, data and deposits.

Third, user experience is still poor for Europeans, who juggle multiple payment solutions to meet various needs. Despite the euro's 25-year legacy, we still lack a digital payment solution that can be used across all euro area countries.

By introducing the digital euro, we aim to tackle these challenges head-on.

Importantly, the digital euro would make payments more convenient. It would provide a digital payment method that complements cash, extending its benefits into the digital realm. For instance, it would have legal tender status, meaning that it would be accepted wherever one can pay digitally. And it would also be available offline, offering users similar privacy to paying with cash and allowing them to pay even in the absence of a network connection. A digital euro would give European consumers a simple and safe digital payment option, free for basic use, that covers all their payment needs everywhere in the euro area.

In fact, one simple reason for introducing the digital euro is that people want it. Even at this early stage, surveys show that close to half of respondents would be likely to use the digital euro – a number that has significantly increased over time.[10] This trend is confirmed by several surveys[11] conducted by national central banks which suggest that many Europeans are open to the idea of using a digital euro.

Launching the digital euro would also ensure that the euro area retains control over its financial future. By offering a secure and universally accepted digital payment option which would be suitable for all use cases – and, crucially, under European governance – it would reduce our dependence on foreign providers. This would protect European merchants from excessive charges, strengthening their bargaining power with those providers and offering an attractive alternative.[12] At the same time, European banks would be able to retain their customer relationship and be remunerated for their role in distributing the digital euro. And the digital euro would limit the likelihood of foreign currency stablecoins becoming widely used for retail payments within the euro area.

Moreover, the digital euro would be based on a core public-private partnership that would leverage synergies, enabling private initiatives to scale up across the euro area. For instance, domestic card payment solutions could co-badge with the digital euro to cover transactions currently beyond their reach. At the same time, banks' wallets and internet banking solutions could integrate the digital euro as an alternative way to pay that is accepted throughout the euro area and supports both contactless and QR-based payments.[13] The open digital euro standards – which can be finalised as soon as the regulation on the digital euro is adopted and can start being used even before the digital euro is issued – would facilitate cost-effective standardisation, allowing private providers to launch new products and functionalities on a European scale. This would unlock innovation and create new business opportunities. In fact, research shows that stock prices of European payment firms increase in response to positive announcements on the digital euro, whereas those of US payment firms decrease.[14]

Last October we issued a call for expressions of interest in innovation partnerships for the digital euro. Some 70 merchants, fintech companies, start-ups, banks and other payment service providers – including four from France[15] – have now joined us in exploring the potential of the digital euro to drive innovation.[16] Our innovation platform simulates the envisaged digital euro ecosystem, in which the ECB provides the technical support and infrastructure for European intermediaries to develop digital payment features and services at European level. One of the areas we are exploring is broadening the set of possible conditional payments, such as making payments dependent on successful delivery of goods or services.

In July we will release a report on these innovation partnerships. It will include the technical information shared with the participants, enabling the entire market to replicate these activities, thereby further supporting innovation by the private sector. Additionally, based on the positive feedback from the pioneers, we will extend the exercise until the end of June, which will allow us to test new functionalities of conditional payments, incorporating fresh ideas and suggestions from our private sector counterparts.

The digital euro's success in reclaiming our autonomy in the retail payment space and boosting innovation capacity hinges on collaboration. In recent years we have engaged extensively with market stakeholders, gathering input from consumers, merchants, banks and payment service providers. We have also started working with market participants on the digital euro rulebook – a single set of rules, standards and procedures for digital euro payments.[17]

This inclusive approach helps us to address everyone's needs and perspectives, crafting a robust payment solution and platform that will benefit all Europeans, support private sector innovation and preserve the future of our money – the euro.

The role of central bank money in shaping a European market for digital assets

Let me now turn to wholesale transactions, a domain where technology holds tremendous potential for transformation.

Currently, we facilitate transactions between financial institutions through our TARGET Services: T2 processes over 90% of large payments, while T2S handles securities transactions.

These services have significantly enhanced the efficiency and integration of post-trade platforms in Europe. And we plan to continue improving them: in 2023 we extended T2 operating times to 22.5 hours on weekdays and we are about to launch a consultation paper investigating stakeholder needs and their interest in a further extension of operating hours. In a month's time we will also launch the European Collateral Management System, which will provide a single, harmonised framework for handling collateral in the 20 euro area countries.[18] And in October 2027 we will move to T+1, shortening the settlement cycle from two days to one. Meanwhile, emerging technologies such as DLT and tokenisation have the potential to bring about a step change in wholesale markets.

These technologies are no incremental improvement: they represent a fundamentally new way of operating by allowing assets to be issued or represented in digital token form. This innovation would enable market participants to manage trading, settlement and custody on a single platform, available 24/7, 365 days a year. It would also synchronise trading and settlement. And it would enable new business models, as tokenised money can be used to automate conditional transactions. DLT and tokenisation could also reduce the cost and barriers to access capital markets, in particular for small and medium-sized enterprises.

In fact, the emergence of these new technologies is an opportunity to establish an integrated European capital market for digital assets from the outset – a digital capital markets union – which would contribute to better channelling our savings into productive uses and boosting Europe's innovation potential.[19] It could help European capital markets to become a hub for DLT-based financial services.

European banks are active in this space, with over 60% exploring or using DLT and 22% already implementing DLT applications. On the securities front, there is a growing number of high-profile issuances on DLT.

The availability of central bank money for settling transactions using these new technologies is crucial for two reasons. First, without central bank money, other settlement assets like stablecoins or tokenised deposits may be used, reintroducing credit risks and fragmentation into the financial system. Second, the market views the ability to settle in central bank money as a key factor in adopting new technologies.

Last year the Eurosystem conducted exploratory work with DLT for settling wholesale transactions in central bank money, using three different solutions to ensure interoperability between our infrastructures and market DLT platforms.[20] The results were highly promising, with 60 industry participants settling real transactions in central bank money or conducting experiments with mock transactions. A wide range of securities and payments use cases were covered, including the first issuance of an EU sovereign bond using DLT. A total of €1.6 billion was settled over a six-month period, exceeding values settled in comparable initiatives in other parts of the world.

As the next step, we have already announced plans to provide a solution to settle DLT-based transactions in central bank money in the short term.[21] Looking further ahead, the Eurosystem will explore a more integrated, long-term solution. A critical risk is indeed that DLT application fragmentation and a lack of interoperability could hinder the development of liquid DLT-based markets in Europe, imposing high costs on investors and issuers connecting to multiple platforms. So we need to create a more harmonised and integrated ecosystem.

One way to achieve this would be to move towards a shared ledger: a programmable platform bringing together token versions of central bank money, commercial bank money and other assets, on which market players can provide their services. Another option could be the coordinated development of an ecosystem of fully interoperable technical solutions, which might better serve specific use cases and enable the coexistence of both legacy and new solutions.

This approach will help us enhance the efficiency of European financial markets through innovation, aligning with the Eurosystem's goal of achieving a more harmonised and integrated European financial system.

However, we cannot do this alone. As we enter this new exploration phase, collaboration with public and market stakeholders will be crucial.

Conclusion

Let me conclude.

The journey toward a digital euro and the integration of new technologies in wholesale transactions represents a pivotal moment for Europe. By embracing these innovations, we can strengthen our monetary sovereignty, enhance our competitiveness and pave the way for a more integrated and resilient financial system.

The digital euro will ensure that Europeans have access to a secure, reliable and universally accepted digital payment solution that complements cash while reducing our reliance on foreign providers. Meanwhile, leveraging central bank money in DLT-based transactions will foster a dynamic and unified digital asset market, driving innovation and unlocking new business opportunities across the continent.

In this transformative era, collaboration is key. We must bring together all stakeholders – public and private, national and European – to craft solutions that reflect the diverse needs and perspectives of all Europeans. Together, we can harness these technological advancements to build a financial ecosystem that is not only more efficient and innovative but also more inclusive and secure.

We have inherited a united Europe and a currency embodying this unity. Our legacy should be European sovereignty and a euro that is fit for the future. This is our collective responsibility, in the public and private sector alike.

Thank you for your attention.

1.

Aglietta, M. and Valla, N. (2021), “La monnaie n’est pas un dispositif technique, c’est une institution essentielle”, *Le Monde*, 2 April and Aglietta, M. and Valla, N. (2021), *Le futur de la monnaie*, Odile Jacob.

2.

The Eurosystem cash strategy aims to ensure that cash remains widely available and accepted as both a means of payment and a store of value. The ECB also emphatically welcomes the proposed EU Regulation governing the legal tender status of euro banknotes and coins.

3.

Cipollone, P. (2025), “The role of the digital euro in digital payments and finance”, contribution to Bancaria, 28 February.

4.

Cipollone, P. (2025), “Empowering Europe: boosting strategic autonomy through the digital euro”, introductory statement at the Committee on Economic and Monetary Affairs of the European Parliament, Brussels, 8 April.

5.

ECB (2025), *Report on card schemes and processors*, February. In addition, only a limited number of European countries offer a domestic payment option for online shopping.

6.

PayPal (2025), “PayPal Announces Plans to Revolutionize In-Store Payments in Germany”, 5 May.

7.

Lane, P.R. (2025), “The digital euro: maintaining the autonomy of the monetary system”, speech at University College Cork Economics Society Conference 2025, Cork, 20 March.

8.

Aglietta, M. and Orléan, A. (eds.) (1998), *La Monnaie souveraine*, Odile Jacob.

9.

Villeroy de Galhau, F. (2023), “Monetary sovereignty in the 21st century”, speech at the Council of State Conference “Monetary sovereignty in the 21st century”, Paris, 14 November.

10.

The share of euro area respondents who would be likely to actually use the digital euro increased from 28% in 2022 to 45% in 2024. See Georgarakos, D. et al. (2025), “Consumer attitudes towards a central bank digital currency”, *Working Paper Series*, No 3035, ECB.

11.

See dnb.nl (2025), bundesbank.de (2024), dnb.nl (2021), bde.es (2022–2023), nbs.sk (2024), OeNB ideas.repec.org (2021/2022).

12.

No scheme fees would apply and service charges would be capped under the proposed digital euro regulation.

13.

A digital euro would support various payment technologies, such as near-field communication (NFC) technology to facilitate quick contactless payments via cards, phones or wearables, suitable for transactions in physical shops and between people, and quick-response (QR) codes, enabling simple payments online and in proximity.

14.

Berg, T., Keil, J., Martini, F. and Puri, M. (2024), "CBDCs, Payment Firms, and Geopolitics", *NBER Working Paper Series*, No 32857, National Bureau of Economic Research. The authors estimate a gain of USD 23 billion for European payment firms and a loss in market capitalisation of USD 127 billion for US payment firms owing to positive announcements about the digital euro over their sample period (up to 2022).

15.

Cartes Bancaires (as part of the European Card Payment Association), equensWorldline SE, Venturexpert Capital SAS and Xavier Lavayssière (Naga Banking).

16.

ECB (2025), “ECB partners with private sector through digital euro innovation platform”, *press release*, 5 May. Examples of new use cases include: i) suburban transport using a smartphone as the check-in/out device, enabling reimbursement in case of delays ; ii) implementing consumer rights to withdraw from subscriptions, a process that is currently not always transparent.

17.

The Eurosystem established a Rulebook Development Group for the digital euro scheme to obtain input from the financial industry, consumers and merchants. The Group consists of 22 public and private sector experts with experience in finance and payments. See ECB (2023), *Members of the Rulebook Development Group*, 15 February. For more information, see the letter from Piero Cipollone to Aurore Lalucq, Chair of the Committee on Economic and Monetary Affairs of the European Parliament, on the “Update on work of digital euro Rulebook Development Group”, 5 September 2024.

18.

The Eurosystem Collateral Management System (ECMS) is a unified system for managing assets used as collateral in Eurosystem credit operations. Its launch is planned for 16 June 2025.

19.

Cipollone, P. (2024), "Towards a digital capital markets union", keynote speech at the Bundesbank Symposium on the Future of Payments, 7 October.

20.

See ECB (2024), *Exploratory work on new technologies for wholesale central bank money settlement*.

21.

ECB (2025), "Eurosystem expands initiative to settle DLT-based transactions in central bank money", *press release*, 20 February.