Policy paper

The Digital Euro

Competitiveness Between Regulation and Market Principles

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Europe

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The European Central Bank (ECB) continues to advance its work on the digital euro, moving toward a phase of decisive choices that will determine the project's future design. This transition marks the conclusion of a multi-year conceptual phase on the introduction of a central bank digital currency (CBDC) and the beginning of a process that could fundamentally reshape the structure of Europe's payments landscape in the years ahead.[1]

The issuance of a digital euro is far more than a technological endeavour. The ECB's initiative aims not only to create a new form of money, but also to strengthen Europe's sovereignty in the digital payments domain.[2] It is a political project driven less by market-based innovation than by the strategic need to reduce Europe's dependence on non-European payment infrastructures and to safeguard its autonomy within an increasingly competitive global financial system.

Recent data show just how deep these dependencies are. The European Court of Auditors says that more than 90 percent of cross-border card payments in the euro area are processed by the US-based companies *Visa* and *Mastercard*. Online payments are mostly made using companies like *PayPal* and *Apple Pay*.[3] These market structures create extra costs for merchants and payment service providers. They also let foreign

1 https://www.ecb.europa.eu/euro/digital_euro/progress/shared/pdf/241202-timeline-digital-euro-project.en.pdf

2 https://www.ecb.europa.eu/pub/pdf/other/Report_on_a_digital_euro~4d7268b458.en.pdf

3 https://www.eca.europa.eu/ECAPublications/SR-2025-01/SR-2025-01_EN.pdf

actors have a lot of influence over sensitive payment data of European consumers.[4] This shows that the digital euro should be viewed not only as a technical tool, but also as a strategic response to the challenge of ensuring Europe's economic independence in the digital realm.

At the same time, a key challenge lies in designing the digital euro in such a way that it does not stifle competition and innovation through excessive regulation, but instead encourages market-based dynamism. The United States relies on private-sector solutions such as stablecoins, while China is developing a centrally controlled digital yuan. Europe is adopting a middle path. The digital euro is intended to ensure stability and data protection without excluding private actors from innovation and value creation.[5]

The central question, therefore, is what role Europe will assume in this international comparison, and how the digital euro can be positioned between state sovereignty and market openness. Particular attention must also be paid to the German market, whose distinctive banking structure will significantly influence the implementation of the digital euro. The key issue is how a project initiated by the political sphere can function in a market-oriented manner while preserving Europe's independence in global financial competition, and under what regulatory and institutional conditions this can be achieved.

1. Political Milestones on the Road to the Digital Euro

Within the political process, the focus is gradually shifting from the fundamental question of *whether* to introduce a digital euro to the more practical question of *how* it should be designed. The Council, the European Commission and the European Parliament are now more concerned with implementation than principle.

In mid-September 2025, the Eurogroup within the Council reached a political agreement and secured greater involvement of member states in negotiations with the ECB on key issues, including the launch timeline of the digital euro and potential holding limits. The latter refer to the largest amount that each user may hold. The agreement establishes a decision-making process that gives governments a formal say, protected by a qualified majority. The intention is to establish a mechanism that will maintain the ECB's independence while ensuring that the political interests of the member states are represented through the European Council and the European Commission.[6] However, the exact structure of this process remains unclear, as does whether it will extend to other contentious topics, such as a possible compensation scheme for participating banks, and what role the Parliament will ultimately play.

4 https://www.europarl.europa.eu/cmsdata/296480/MD_SFL%20June%202025_FINAL.pdf

5 https://www.swp-berlin.org/publikation/the-digitalisation-of-central-bank-money

6 https://www.consilium.europa.eu/media/cs4dvijn/peg-to-pec-letter-october-2025-final.pdf; https://www.politico.eu/article/ecb-learns-to-listen-to-eu-countries-to-get-deal-on-digital-euro/

Scepticism towards the digital euro is most pronounced in the European Parliament. Fernando Navarrete Rojas, the conservative EPP group's rapporteur, has repeatedly expressed doubts about the project's benefits.[7] The Parliament's Committee on Economic and Monetary Affairs (ECON) now intends to reach a decision in the first half of 2026. This widens the gap with the European Council, which, under the Danish presidency, intends to reach a general approach by the end of 2025.[8] Consequently, the ECB is under additional pressure to continue making technical preparations while major legislative decisions are still pending.

Assuming a comprehensive legal framework is in place, the ECB estimates that an additional two-and-a-half to three years will be required to develop and implement the necessary technical infrastructure.[9] This creates tension between the growing political momentum for the digital euro and the persistence of unresolved technical questions, such as offline functionality (including fraud prevention in physical carriers) and interoperability with existing payment systems, such as *girocard* and instant payments.[10] Effectively communicating the project to the public and market participants remains equally challenging.

The evolution of the digital euro from a politically driven initiative into a viable market solution will depend on how these factors interact. Comparisons with developments in the United States and China highlight the mounting pressure on Europe to take action.

2. Between Digital Sovereignty and Market-Driven Dynamism

In the United States, the digital payments system is shaped by market-driven dynamics which have spread worldwide. Industry leaders such as *Visa* and *Mastercard* dominate retail commerce and control a significant proportion of global card transactions. In 2024 alone, *Visa* processed payments worth over 15 trillion US dollars.[11] Digital payment provider *PayPal* is the dominant player in online commerce, being integrated into almost 35 per cent of German online domains.[12]

There is currently a particularly strong growth trend in the area of stablecoins. These are privately issued cryptocurrencies whose value is linked to a traditional currency, most often the US dollar. Stablecoins such as *USDC* and *Tether* have reached a combined global market capitalisation of around 230 billion US dollars, accounting for

7 https://www.politico.eu/article/digital-euro-enraged-half-brussels-eu-what-you-need-to-know-ecb/; https://table.media/en/europe/feature/sovereignty-in-payment-transactions-why-the-argument-could-give-the-digital-euro-a-boost

8 https://danish-presidency.consilium.europa.eu/en/programme-for-the-danish-eu-presidency/programme-of-the-danish-eu-presidency/

9 https://www.bloomberg.com/news/articles/2025-09-23/digital-euro-may-be-rolled-out-in-mid-2029-ecb-s-cipollone-says?embedded-checkout=true

10 https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp240510~4a0c22ce7b.en.pdf

11 https://s29.q4cdn.com/385744025/files/doc_downloads/2024/Visa-Fiscal-2024-Annual-Report.pdf

12 https://www.statista.com/topics/2411/paypal/#topicOverview

approximately 7.5 percent of the total crypto market. Forecasts suggest this figure could exceed two trillion U.S. dollars by 2028.[13]

So far, stablecoins have primarily been used in the cryptocurrency market for trading digital assets. In the US, they have filled a gap resulting from the country's historically underdeveloped interbank infrastructure.[14] Without the presence of real-time payment systems, such as SEPA in Europe, stablecoins offered a market-based alternative to cheques and platforms like *PayPal*.

By contrast, the digital euro represents a fundamentally different approach. As a form of central bank money, it would be a direct liability of the European Central Bank — essentially the digital equivalent of cash. Unlike stablecoins, which are privately issued and backed by assets, the digital euro would serve as legal tender, designed to ensure security, data protection and universal accessibility.[15] Therefore, the two instruments pursue different objectives: stablecoins facilitate value transfer within digital markets, whereas the digital euro aims to guarantee monetary stability and sovereignty in everyday payments.

This distinction is reflected in U.S. regulatory developments. While the Genius Act, adopted in July 2025, established a comprehensive legal framework for stablecoins, the U.S. government simultaneously ruled out the development of a central bank digital currency by the Federal Reserve.[16] Thus, the United States deliberately favours market competition and private-sector innovation over a state-issued digital currency.

China, on the other hand, is taking a fundamentally different approach, centred on ensuring state control over digital currencies. The digital yuan (e-CNY) is currently the world's most advanced central bank digital currency. It is already in use across much of China and, in some cases, abroad. The e-CNY is part of a wider strategy to promote the international use of the renminbi and establish an independent payment system. The aim is to create a payment system that operates independently of Western clearing houses

Related initiatives, such as the Universal Digital Payment Network and the mBridge project, are designed to facilitate cross-border payments with partner countries. Technically, the e-CNY enables extensive programmability, allowing the central bank to link transactions to specific purposes or timeframes. Aspects such as data protection and user sovereignty take a back seat to goals such as efficiency, control and geopolitical influence.[17]

Europe is positioning itself between these two extremes. The current design envisages a two-tier model, whereby the European Central Bank would provide the core

13 https://coinmarketcap.com; https://www.apolloacademy.com/wp-content/uploads/2025/07/StablecoinOutlook_v2.pdf?utm_source=chatgpt.com

14 https://www.jpmorgan.com/insights/payments/payables/instant-payments-understanding-rtp-and-fednow-service#:~:text=In%20the%20United%20States%20there,2023%20by%20the%20Federal%20Reserve

15 https://www.ecb.europa.eu/euro/digital_euro/report/html/index.en.html

16 https://www.congress.gov/bill/119th-congress/senate-bill/394

17 https://www.swp-berlin.org/publikation/the-digitalisation-of-central-bank-money

infrastructure and banks, payment service providers and fintech firms would manage the interfaces to the end-users. This structure aims to strike a balance between stability and innovation. At the same time, Europe's robust data protection standards could offer a distinct competitive advantage. However, whether this potential advantage can be realised depends on whether the digital euro can match private-sector solutions in terms of usability and accessibility.[18]

Projects such as *Wero* and *EURAU* demonstrate that Europe's capacity for innovation hinges not only on the digital euro itself, but also on the establishment of a regulatory and market environment conducive to the growth of private initiatives.

3. Acceptance by Regulation

As a politically initiated project, the central question surrounding the digital euro is how it can be designed within the existing institutional framework so that it does not become an obstacle to competition and innovation, but rather a catalyst for both. For the German market, those adjustments that have a profound impact on the structure of the national payment system are particularly relevant.

Germany's financial system has traditionally been bank-driven and built on a three-pillar structure including private banks, public savings banks and cooperative institutions.[19] This structure promotes regional diversity and reflects economic stability and decentralisation. However, it can also hinder centrally designed systems, such as the ECB's proposed digital euro, as the interests of these different regional groups are not always aligned.

Cash continues to play a significant role in everyday transactions. In 2024, approximately 72 percent of all in-store purchases in Germany were made using banknotes and coins.[20] Nevertheless, cashless payments have been gaining ground. The *girocard* remains a key payment method in German retail, facilitating 7.9 billion transactions worth €307 billion in 2024 alone. The number of active card terminals has risen to around 1.2 million, and mobile payment usage has increased from 12 to 20 percent in recent years.[21] This has resulted in a more fragmented payment landscape, offering opportunities for innovation and competition but also posing risks to the existing market organisation.

Against this backdrop, the digital euro initially appears to be a complementary offering. However, the expected implementation costs are significant. Earlier estimates suggested an investment of around €2 billion for the German banking sector alone. A more recent study by PwC, commissioned by European banking associations, projects costs of up

18 https://wero-wallet.eu/; https://allunity.com/eurau/

19 https://www.bundesbank.de/resource/blob/935100/918bd607ec4184f0fe40b11773c72311/mL/bankstellenbericht-2023-data.pdf

20 https://de.statista.com/infografik/27524/anteil-der-befragten-die-in-den-vergangenen-12-monaten-im-einzelhandel-in-restaurants-wie-folgt-gezahlt-haben/#:~:text=Laut%20Statista%20Consumer%20Insights%20gaben,h%C3%B6her%20als%20jede%20andere%20Zahlungsart

21 https://www.girocard.eu/news-media/newsroom/jahreszahlen-2024/

to €30 billion across the euro area and warns of a disproportionate financial burden on banks.[22] The ECB has considers these figures to be exaggerated, citing an alternative assessment that highlights potential efficiency gains and shared infrastructure solutions, which could reduce overall costs to around €5 billion.[23] The final outcome will depend largely on the extent to which technical resources are shared, and on how implementation and operating costs are allocated.

This raises questions about the project's economic viability. The following analysis therefore focuses on the structural factors that will influence the design and acceptance of the digital euro, such as acceptance requirements, holding limits, anonymity, user interfaces and cash conversion.

One key point of contention is the *acceptance obligation*. Under the current proposal, merchants and service providers who already accept similar digital payment methods would have to accept the digital euro too. Contractual terms that exclude it from general business conditions would not be permitted. Unlike with cash, where signs such as 'cards only' or 'cash only' remain legally valid, such exceptions would not be permitted for the digital euro. This would effectively grant the digital euro a privileged status over cash, representing a significant regulatory intervention aimed at accelerating its adoption.[24]

Although the Commission's proposal includes exemptions for micro-enterprises with fewer than ten employees or annual revenues below €2 million, the broader question remains: is such an obligation compatible with freedom of contract? Even with these exemptions, the principle of mandatory acceptance restricts market choice. To maintain equal treatment and contractual freedom, businesses should be allowed to exclude the digital euro under their general terms, as is currently possible with cash. The banking sector has also warned of potentially high integration costs, particularly for small and medium-sized enterprises, which would require updating their point-of-sale and IT systems.[25]

Another sensitive issue is the *holding limit*, which is currently under discussion at a level between €500 and €3,000 per person. The purpose of these limits is to prevent large-scale transfers of bank deposits into digital euro wallets, as this could weaken the refinancing bases of banks.[26] This risk is particularly pertinent in Germany, where local and regional banks play a pivotal role in lending to small and medium-sized enterprises. Therefore, ensuring the stability of these institutions is crucial.[27]

22 https://www.pwc.de/de/finanzdienstleistungen/pwc-digital-euro-cost-study-2025.pdf

23 https://www.ecb.europa.eu/euro/digital_euro/timeline/profuse/shared/pdf/ecb.de-prep251010_a_view_on_recent_assessments_of_digital_euro_investment_costs_for_the_euro_area_banking_sector.en.pdf

24 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52023PC0369

25 https://bankenverband.de/en/digitalisierung/german-banking-industry-committees-key-requirements-digital-euro

26 https://www.ecb.europa.eu/euro/digital_euro/timeline/profuse/shared/pdf/ecb.de-prep251010_technical_annex_financial_stability_impact_digital_euro.en.pdf; https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op326~d5c223d9b4.en.pdf

27 https://www.bundesbank.de/de/presse/interviews/nur-500-euro-guthaben-erlaubt-was-der-digitale-euro-bringen-soll-und-was-nicht-933530

The introduction of holding limits is not just a technical matter; it requires a delicate balance between financial stability and innovation.

So far, the legislative proposal envisaged that the ECB alone would determine the limit level. This would be a significant expansion of the ECB's powers.[28]

From a democratic point of view, however, it would be advisable for the question of setting the holding limit to be decided in cooperation with the EU institutions and the member states. This is the only way to ensure that a decision of systemic importance is taken with broad political participation and that the different interests of the Member States are taken into account. Furthermore, any later reduction in the holding limit could undermine public confidence in the digital euro. To provide predictability for citizens and banks, downward adjustments should be explicitly ruled out after a first transition period.

A third area of concern is *anonymity*. While only cash guarantees complete privacy, the digital euro must reconcile data protection with measures against illicit activities. The ECB has stated that digital euro transactions should offer a level of anonymity similar to that of cash withdrawals at ATMs.[29] In practice, full anonymity is only feasible for offline payments; however, limited anonymity for online transactions — up to a daily cap set by the ECB — was also under consideration. Successfully embedding strong EU data protection standards into the digital euro's architecture would foster public trust and acceptance in everyday use and provide Europe with a genuine competitive advantage. Therefore, anonymity is not a side issue, but a core requirement for the success of the digital euro in Germany and across Europe.

Another major issue is the *mandatory provision* of the ECB's standard digital euro application. Under the current model, banks and payment service providers maintain customer relationships while the ECB operates the underlying infrastructure. However, under the Commission's proposal, intermediaries would be required to offer not only their own applications, but also the official ECB app.[30]

Although this may seem like a service-oriented measure, there are practical drawbacks. If the ECB app is made available alongside private-sector apps, banks and payment providers are less incentivised to develop their own user-friendly and innovative solutions. Additional technical and compliance requirements would increase complexity and costs, and competition in terms of user experience and service integration would lose momentum. A more sustainable approach would be to allow intermediaries to decide whether to rely solely on their own front-end applications. In turn, the ECB could focus on its core role of providing legal tender and maintaining secure back-end infrastructure.[31] This division of responsibilities would encourage innovation and

28 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52023PC0369

29 https://www.ecb.europa.eu/euro/digital_euro/timeline/profuse/shared/pdf/ecb.degov220404_privacy.en.pdf

30 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52023PC0369

31 https://www.ecb.europa.eu/press/intro/news/html/ecb.mipnews211122.en.html#:~:text=The%20PISA%20framework%20is%20aimed,schemes%20of%20other%20payment%20instruments.

competition, and help to avoid conflicts of interest between the ECB's roles as supervisor under the PISA framework and as a potential market participant.

Finally, the issue of *cash conversion* and related fees remains unresolved. The current legislative proposal states that converting digital euros into physical cash should be free of charge, for instance at ATMs.[32] However, this could place a significant financial burden on banks, particularly in rural areas where maintaining ATMs is becoming increasingly expensive due to branch closures. From a regulatory standpoint, a blanket cost exemption appears impractical. A more practical approach would be to use cash as the reference point: customers holding both a bank account and a digital euro wallet with the same institution should face identical fee structures for withdrawals and deposits. This would prevent discrimination without imposing unilateral costs on banks.

The proposal also requires *public authorities to ensure access to cash withdrawals* to promote financial inclusion.[33] While this might be feasible in other Member States, for instance through post office networks, Germany lacks comparable infrastructure. In light of existing obligations, such as the savings banks' universal service mandate and the legal right to a basic payment account, lifting this requirement would be reasonable. A more sustainable approach would be to rely on private-sector infrastructure combined with fair, market-based compensation mechanisms that distribute costs evenly.

These issues are not just technical or administrative. They raise fundamental questions about competition, innovation and regulatory design. The way in which they are resolved will determine whether the digital euro is viewed in Germany as a politically mandated product or as a platform for a modern, market-oriented payment system.

4. Sovereignty Requires Competition

Recent decades have shown that Europe's strength lies in its ability to combine stability with freedom. This balance must not be undermined by excessive regulation. For the digital euro, this means that acceptance requirements must respect freedom of contract, cash withdrawals should not create one-sided burdens, holding limits must be defined through broad political participation, and intermediaries must retain sufficient room for innovation. Above all, a credible guarantee of privacy is essential so that the digital euro is perceived not as a tool of control but as a means of payment that unites freedom and security.

The digital euro is not the result of natural market forces. It represents a politically driven response to geopolitical dependencies and technological challenges. Rather than relying primarily on private-sector innovation and open market infrastructures, Europe has chosen an institutional path led by the central bank. Whether this approach will ultimately prove beneficial, and who will bear its costs, remains uncertain.

32 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52023PC0369

33 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52023PC0369

Cash will continue to play a central role in Europe's monetary system, providing trust, choice and public acceptance. The digital euro should complement, not replace, existing means of payment. To maintain this balance, it will be important to ensure that the digital euro does not receive preferential treatment but fits into a broader framework of freedom of choice, competition and monetary stability.

Ultimately, the success of the digital euro project will depend on its ability to function within an open and competitive environment. Only under these conditions can it earn the trust of citizens and businesses and support innovation in the wider financial ecosystem. If this balance can be achieved, the digital euro may evolve into an essential component of European sovereignty, strengthening innovation, competition and public trust in equal measure.