EUROPEAN CENTRAL BANK

EUROSYSTEM

Speech

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Making wholesale central bank money fit for the digital age

Delivering innovation, integration and independence to Europe's wholesale financial markets

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Introduction

Digitalisation is transforming every aspect of our lives, and central bank money is no exception. Central bank money comes in two distinct forms: the retail kind, which is used by people and businesses to purchase goods and services, and the wholesale kind, which is used by banks to settle claims between each other. In the Eurosystem we are working on making both forms of central bank money fit for the digital age. On the retail side we are developing a digital euro, and you may have seen that last week the ECB Governing Council decided to move to the next phase of the digital euro project. As part of this, we will continue providing the EU co-legislators with technical input and supporting the legislative process as required.

But today's event is about wholesale central bank money, in particular our work on a wholesale central bank digital currency (CBDC). I would first like to explain why we are embarking on this work, before giving you an overview of what it actually entails.

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Why is a wholesale CBDC necessary?

Let me start by walking you through the logic behind our work on a wholesale CBDC. In a nutshell, we are doing this to support three Is: innovation, integration and independence. Let me explain.

Innovation: safely unleashing potential

The first "I" is innovation. Distributed ledger technology (DLT) can be transformative. It enables the full lifecycle of a financial transaction to be integrated onto a single platform – covering issuing, trading, settlement and custody of the assets – thus making transactions more efficient. It also makes transactions safer by reducing settlement risk – the risk that the seller transfers the asset but does not receive the cash or that the buyer transfers the cash but does not receive the asset. Moreover, it increases flexibility by enabling trading on a 24/7 basis with instant settlement.

One of DLT's key innovations is smart contracts. These open the door to a host of new possibilities, such as automating the release of a payment only when an externally verifiable condition is met. And it is not only financial market participants who can benefit, for instance by automating step-up coupons or warrants – the real economy can benefit too. Think of funding a sustainable investment, for instance, where payments would be triggered only once an official certification or label is obtained, ensuring compliance with green standards. Or a government grant programme for agriculture implemented via a financial instrument that makes payments to the holders if certain extreme weather events are recorded.

Europe cannot afford to miss out on the innovations this technology promises. However, innovation without stability is like a skyscraper without foundations. The dynamics of private settlement assets like stablecoins illustrate this challenge. We are already witnessing the proliferation of many different stablecoins, which could fragment liquidity by creating multiple pools of money. For example, some participants may only accept payments in a specific stablecoin from one provider, while others may prefer a different one. So to make payments to different participants, one may need to hold many different stablecoins.

Moreover, stablecoins carry inherent risks, including the possibility of losing their promised one-to-one parity with official currency. This could occur during periods of financial stress, when there is a sudden rush to redeem stablecoins for the underlying currency, especially if the reserves backing them become less liquid. In contrast, central bank money is not subject to credit or liquidity risk, as it is issued by the central bank itself, which cannot default. This is what makes central bank money the ultimate risk-free settlement asset and a necessary monetary anchor, also for tokenised markets.

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Let me be clear though: private forms of money play an important role in our two-tier monetary system and will continue to do so in the digital era, particularly as not all market participants have access to central bank money. However, when it comes to wholesale and critical financial operations, it is crucial to ensure that central bank money remains the preferred medium of exchange, as also required by international standards for financial market infrastructures.[1] In fact market participants themselves are calling for central bank money to be used in such transactions. Maintaining this role for central bank money is essential to safeguard financial stability and maintain confidence in the European economy.

Integration: from fragmentation to a unified European market

The second "I" is integration. The current state of Europe's fragmented post-trade market is well documented, as Mario Draghi also highlighted in his report.[2] One illustration of this fragmentation is the existence of more than 30 central securities depositories (CSDs) spread across the EU[3], compared with just two in the United States. The large number of CSDs is not necessarily a problem if they are well linked and follow common standards, which is however still not the case in Europe. The resulting fragmentation significantly increases costs, diminishes liquidity and creates barriers that complicate cross-border activity for both issuers and investors. For example, an investor wishing to hold sovereign bonds from more than one euro area country would in many cases need to open multiple accounts with multiple CSDs across those countries while navigating multiple rules, fee structures and operational requirements. This complexity makes cross-border investments more expensive and less efficient and favours large market players who can afford to deal with it.

In principle, integration could be achieved by making existing infrastructures interoperable. But progress has been slow, often blocked by incumbents' interests and legacy systems designed for national rather than European markets.

This is where DLT offers the possibility of a technology-driven paradigm shift to propel us away from the current fragmented landscape. It offers a chance for the industry to build shared, cross-jurisdictional market infrastructures from the ground up. Imagine a situation where the ownership of securities can be recorded and transferred across borders without relying on multiple, siloed national market infrastructures. A recent industry study highlights this potential, estimating that European post-trade

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1 CPSS and IOSCO (2012), *Principles for financial market infrastructures*, Bank for International Settlements and IOSCO, April.

2 Draghi, M. (2024), *The future of European competitiveness*, European Commission, September.

3 Hanssens, B., Sandín de Vega, D. and Franziska Sowa, H. (2025), "Advancing the capital markets union in Europe: a roadmap for harmonising securities post-trading", *Economic Bulletin*, Issue 4, ECB.

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costs could be approximately 75% lower if Europe's financial ecosystem matched the level of integration and competitiveness seen in the US market.[4]

These benefits are tangible. For an issuer, harmonised issuance and settlement processes mean deeper markets and greater liquidity, reducing the cost of capital. And for an investor, a single, seamless platform replaces the maze of multiple national systems, unlocking economies of scale and transparency. But the technical potential will not materialise unless the rules are overhauled to overcome national silos. A bespoke, single legal framework applying specifically to tokenised assets – a "28th regime" – would be the step change that is needed. Such a framework would add a European legal layer, enabling tokenised assets to be issued and move seamlessly across the EU.

Independence: safeguarding Europe's monetary sovereignty

The final "I" stands for independence. The need for European strategic autonomy has taken centre stage in a rapidly changing global geopolitical landscape. Retail payments are a clear case in point, with Europe realising the extent of its reliance on international card schemes and thus drawing a key motivation for the digital euro. Today, we face a similar risk in wholesale markets. The rise of USD-denominated stablecoins could create new dependencies that undermine our monetary sovereignty and risk relegating the euro to a secondary player in global digital finance.

A wholesale CBDC can safeguard our strategic independence in financial markets by offering a trusted public settlement asset in euro. It would support the safe development of regulated private settlement assets in euro, allowing the private sector to innovate while remaining anchored to central bank money. A wholesale CBDC would serve as a bridge across private forms of money, helping to maintain the singleness of money and the two-tier monetary system, in which central banks provide the foundation for money while commercial banks facilitate its distribution to the broader economy.

Bridge and road to the future of finance: Pontes and Appia

The case for introducing a wholesale CBDC is clear and pressing. So, what steps are we taking to turn this vision into reality?

In 2024 the Eurosystem conducted the most comprehensive exploratory work on wholesale DLT settlement in the world to date.[5] We worked with more than 60 participants across nine jurisdictions, running over 50 trials and experiments that settled nearly €1.6 billion in central bank money. The findings

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[4] Association for Financial Markets in Europe (2025), *Analysis of CSD Fees in Major European Markets*, October.

[5] ECB (2025), *The Eurosystem's exploratory work on new technologies for wholesale central bank money settlement*, 1 July.

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were very telling: strong market interest in DLT, clear demand for programmability and automation, and a resounding call for central bank money as the safest, most scalable means of settlement.

Drawing on these findings, the Governing Council of the ECB approved a dual-track strategy in 2025.[6] Two tracks, but one unifying vision and both part of a single roadmap.

Pontes: bridging today and tomorrow

The first track is called Pontes. It enables a market participant buying a tokenised asset to pay for it using tokenised central bank money. Pontes will therefore provide a Eurosystem DLT platform on which the settlement of transactions conducted in market DLT platforms can take place in central bank money.

We will launch Pontes by the end of the third quarter of 2026. This initial solution will incorporate the most successful features tested during our 2024 exploratory work and will explore further improvements aligned with the Eurosystem's operational, legal and technical standards. But even before this launch, we remain open to requests for additional trials and experiments to maintain the momentum and keep the dialogue with the market open.

Pontes is not a stopgap or a temporary measure. It is a reliable and resilient solution designed to address the market's need for central bank money settlement in DLT as early as next year, while establishing the operational and technical foundations for more integrated European markets in the long run. While the initial launch will deliver a limited set of capabilities that meet the market's immediate needs, it will be an evolving solution. To this end, following the initial launch, we will be enhancing Pontes with additional functionalities and features that leverage the full potential of DLT. Overall, Pontes will provide the certainty that the market needs to build DLT-based products and services for Europe today, knowing they can use the safest medium of exchange – central bank money – in euro, on an infrastructure that is scalable, trusted and fit for the future.

Appia: the vision for the future ecosystem

Appia is our long-term track – the vision that will shape an entire ecosystem for European tokenised finance. The Appia vision encompasses the full value chain – not just a settlement infrastructure to exchange cash with financial instruments, but also more complex financial use cases as well as the standards, rules and governance guiding them. It is about building together with the industry one

[6] ECB (2025), "ECB commits to distributed ledger technology settlement plans with dual-track strategy", press release, 1 July.

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coherent European digital financial market, with the Eurosystem providing tokenised central bank money as the anchor settlement asset.

Clearly such an ecosystem cannot be designed by the Eurosystem in a vacuum. Appia, therefore, is envisaged as a collaborative, public-private partnership. The Eurosystem will work closely with market participants, public institutions, academics and international counterparts to co-design the future ecosystem, ensuring that it serves the real needs of issuers, investors, intermediaries and infrastructures, while safeguarding financial stability.

We plan to publish an Appia launch paper in early 2026, explaining our strategic thinking, outlining foundational principles for the design of this integrated European ecosystem and the areas that will require in-depth analysis and concrete practical work. This launch paper will be the starting point for deeper engagement in the form of workshops, consultations and experiments with public and private stakeholders across Europe. We expect to complete this process in 2028. In the meantime, the insights gained from Appia will feed back into the design of the Pontes enhancements. This will ensure that the evolving Pontes solution will be consistent with and serve the Appia long-term vision, as it gradually comes into focus.

Conclusion

Through its wholesale CBDC initiatives, Pontes and Appia, the Eurosystem is promoting financial innovation and market integration across Europe while safeguarding our monetary sovereignty. By providing a safe, euro-denominated settlement asset for the tokenised world, we are laying the foundations for a vibrant and future-oriented European digital asset ecosystem. At the same time, these initiatives support a truly integrated single market – reducing fragmentation in post-trade infrastructures and helping issuers and investors access markets seamlessly across borders. Together, these efforts strengthen Europe’s strategic autonomy, uphold the euro’s role as a trusted global currency, and lay the groundwork for private sector innovation within a secure and interoperable digital financial framework.

The technology alone, however, cannot harmonise laws on insolvency, securities or taxes. While the European Commission’s savings and investments union has made progress in aligning securities issuance and supervision, fully realising the benefits of tokenisation requires a unified digital asset legal framework – a “28th regime”. Combined with secure settlement and digital payments, this would unlock a truly integrated digital market.

Europe must act with determination, shaping its own future rather than waiting for others to set the standards. To achieve this, legislators, regulators, market participants and central banks must work together as partners.

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