EUROPEAN CENTRAL BANK
EUROSYSTEM

Speech

Milan, 17 January 2025

Transmission embargo until 12:15 CET on Friday, 17 January 2025

The role of central bank money in digital payments and digital finance

Keynote speech by Piero Cipollone, Member of the Executive Board of the ECB, at the Crypto Asset Lab Conference on crypto-asset and CBDC challenges

Thank you for inviting me to this conference on investments, economics and regulation for digital assets and central bank digital currencies.

Let me start my emphasising that this topic should be a key priority for Europe. As evidenced in the recent report of Mario Draghi, the productivity gap between the US and the EU is mostly explained by technology and finance. Take the ICT and financial sectors out, and there is no productivity gap left. So, if we are to close the productivity gap with the US, we need to focus on tech and finance.

Digital payments and digital finance stand at the intersection between these two sectors. And they are developing fast, driven by changes in habits and technology. This is both an opportunity and a risk for Europe. It is an opportunity to close the gap, developing innovative and competitive European solutions. And it is a risk if we do not seize the opportunity, as we would then aggravate risks to our competitiveness, resilience and strategic autonomy.

I cannot emphasise enough the importance we give to this at the European Central Bank, as guardians of our currency, the euro. Ultimately, this is about the future role of our currency. The euro is currently the second most important currency in the international monetary system. Its share across a range of indicators stands at around 20%, whereas the euro area accounts for around 12% in world GDP. For the euro to continue punching above its weight, transacting and investing in euro needs to be seen as safe, convenient and efficient even as digitalisation transforms payments and finance.

Central bank money has a key role to play in this regard as the central pillar of the payments and financial system. This is because it connects its different parts of and acts as a stability anchor by

European Central Bank
Directorate General Communications
Sonnemannstrasse 20, 60314 Frankfurt am Main, Germany
Tel.: +49 69 1344 7455, email: media@ecb.europa.eu, website: www.ecb.europa.eu

providing the only risk-free settlement asset in the system. And this is particularly relevant in Europe, where payments and finance too often remain fragmented along national lines, preventing us to fully leverage the full scale of our European market.

This is true for both retail and wholesale transactions:

For retail transactions – that is, the daily transactions involving consumers and businesses –, our dependency on non-European solutions weakens our strategic autonomy and is a drag to productivity growth; we should ask why we do not have a European VISA or Mastercard.

For wholesale transactions – that is, transactions between financial institutions –, we need to avoid repeating the mistake we made in the retail sector and make sure that we set up the conditions for European actors to stay ahead of their competitors.

I will discuss both aspects in turn.

A digital euro for everyday payments

Let me start with retail transactions and our digital euro project.

Rationale

While central bank money is currently available in the form of cash, it does not currently exist in digital form.

This is becoming increasingly problematic because the use and acceptance of cash are declining. In the euro area, cash transactions have fallen below card transactions in value. And the share of companies reporting that they do not accept cash has tripled in the last three years to 12%. The European Commission has therefore put forward a legislative proposal to ensure the acceptance of cash and the ECB is committed to keeping euro cash widely available and accessible. Still, the trend towards less use of banknotes for daily transactions is likely to continue, reflecting the digitalisation of economic activity and mirroring patterns observed in many advanced economies.

Moreover, digital payments in the euro area remain fragmented, both along national lines and in terms of use cases. Current European digital payment solutions mainly cater to national markets and specific use cases. To pay across European countries, consumers have to rely on a few non-European providers, which now dominate most of these transactions. International card schemes accounted for two thirds of card transactions in the euro area in 2023. And 13 out of 20 euro area countries rely entirely on non-European solutions in the absence of their own domestic payment scheme. But even those international payment solutions are not accepted everywhere and do not cover all key use cases (payments in shops, from person to person and online).

So a key objective of central bank money – to offer the public a means of payment backed by the sovereign authority that can be used for retail transactions across the jurisdiction – is not being fulfilled in the digital space.

In addition, European payments have become a prime example of the situation that Enrico Letta and Mario Draghi have described in their recent reports. The fragmentation of the market along national lines, the lack of European payment solutions available on a European scale and the difficulty faced by European payment service providers in keeping pace with technological advances means that Europe is not competitive within its own market, let alone on a global scale.

Moreover, in an unstable geopolitical environment, we are being left to rely on companies based in other countries. Today's dependency on US companies could in future develop into reliance on companies from countries other than the United States. Platforms like Ant Group's Alipay have demonstrated their ability to bridge geographical gaps: during major events like UEFA EURO 2024 they were able to boost their payment app usage among customers in Europe.

Merchants – and consumers, to whom costs are eventually passed on – are left to deal with the consequences of the international card schemes' market dominance. For instance, the average net merchant service charges in the EU nearly doubled between 2018 and 2022. This increase occurred despite regulatory efforts to contain it, as international card schemes exploited their strong negotiating position to raise the non-regulated components of the merchant service charge, such as scheme fees. As a result, every year, European merchants collectively transfer large amounts to international card networks. The cost falls disproportionately on smaller retailers, who face charges that are three to four times higher than those paid by their larger counterparts.

We must move swiftly to address the risks stemming from Europe's current inability to secure the integration and autonomy of its retail payment system. This is a key motivation behind the digital euro project: bringing central bank money into the digital age would provide a digital equivalent to banknotes and strengthen our monetary sovereignty.

By ensuring everyone across the euro area would have access to central bank money in digital form, the project aims to provide tangible benefits to consumers, merchants and payment service providers alike.

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Benefits for consumers and merchants

Complementing banknotes, the digital euro would offer all European citizens and firms the freedom to make and receive digital payments seamlessly.

The digital euro would provide a single, easy, secure and universally accepted public solution for digital payments in stores, online and from person to person. It would be available both online and offline. And it would be free for basic use.

For merchants, the digital euro would provide merchants with seamless access to Europe's consumer base. Moreover, it would offer an alternative that would increase competition, thereby lowering transaction costs in a more direct way than regulations and competition authorities can.

Fostering competition and innovation in a unified payments ecosystem

The digital euro would also generate broader benefits for the euro area economy by fostering competition and innovation.

European payment service providers are finding it increasingly difficult to compete with international card schemes and e-payment solutions. For example, Apple Pay has significantly expanded its reach in Europe, capturing a portion of interchange fees. Banks risk missing out on not only interchange fees but also client relationships and user data.

By contrast, the digital euro would ensure that distribution would remain with payment service providers, allowing them to maintain customer relationships and be compensated for their services, as is currently the case. It would also offer an alternative to co-branding with international card schemes for cross-border payments in – and potentially beyond – the euro area, thus promoting competition.

The digital euro would also expand opportunities for payment service providers while reducing the cost of rolling out solutions on a European scale. In addition, it would cultivate an environment conducive to the widespread adoption of payment innovations throughout Europe.

Currently, several innovations aimed at simplifying payments are emerging within specific national markets or across a few countries, driven by European payment service providers. Although these innovations are highly commendable and would enhance people’s lives, existing structural barriers mean they would encounter considerable obstacles in trying to achieve pan-European scale.

What is the end result? By failing to implement large-scale innovations accessible to everyone in the euro area, these companies are unable to achieve the optimal scale needed for continuous investment

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in new technology. This limits their ability to compete effectively with the large international players who can fully leverage economies of scale, even on a global level.

According to the European Commission's legislative proposal, the digital euro's legal tender status – which would require merchants to accept the digital euro for electronic payments – and mandatory distribution would help overcome the challenges of achieving sufficient scale by ensuring widespread accessibility and acceptance across the euro area. This legal tender status, combined with the digital euro rulebook, would establish a wide acceptance network and common standards, which the private sector can leverage.

This would advance a more integrated European payments market. As private providers expand their geographical footprint and diversify their product portfolios, they will benefit from cost efficiencies and be better positioned to compete internationally.

In essence, the network effects generated by a digital euro would function as a public good, benefiting both public and private initiatives. This approach is akin to creating a unified European railway network or European energy grid, where various companies could competitively operate their own services and deliver added value to customers.

Instead of requiring significant investment to expand existing services across the euro area, the open digital euro standards would facilitate cost-effective standardisation, making it possible for private retail payment solution providers to launch new products and functionalities on a broader scale.

Ultimately, whether through the digital euro or private solutions, this standardised framework would unlock innovation, create new business opportunities and improve consumer access to a diverse range of goods and services.

Making this vision a shared reality

The design of the digital euro, as well as the key provision in the Regulation proposed by the European Commission, contains all the key elements required to make this vision a reality.

Over the past years, we have extensively engaged with a multitude of market stakeholders to shape the digital euro value proposition and prepare its implementation. We have collected and discussed the input of the payments ecosystem at large, including from representatives of consumers, merchants, banks and other payment service providers. And we are now deepening our exploration of the innovation potential of the digital euro: our recent call for innovation partnerships has received very strong interest from the market.

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By adopting this inclusive approach, we can ensure that everyone's needs and perspectives are addressed, paving the way for a more robust and dynamic payments system.

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

Let me now turn to the role of central bank money for the development of digital finance.

At present, the ECB and national central banks (which we collectively refer to as the Eurosystem) offer central bank money in digital form to financial institutions via our TARGET Services. Among these, T2 settles more than 90% of the value of large payments between financial institutions, and T2S settles securities transactions. They have been crucial for the efficiency and integration of the post-trade landscape in Europe.

We are committed to continue providing state-of-the-art settlement services in central bank money, even as new technologies emerge.

The potential of new technologies

In this respect, we see potential for new technologies such as distributed ledger technology (DLT) to transform and improve wholesale financial markets by allowing to issue or represent assets in digital form.

DLT allows market participants to handle trading, settlement, and custody on the same platform, reducing credit risk, transaction failures, and reconciliation needs. It can enhance efficiency by operating 24/7/365 and settling transaction instantly, potentially cutting annual infrastructure operational costs. A shared DLT platform could lower market entry barriers, enabling small and medium-sized enterprises and new players to access capital markets and facilitating efficient trading of currently unserviced financial instruments.

We have an opportunity to create an integrated European capital market for digital assets from the outset – in other words, a digital capital markets union.

Recently, we have observed an acceleration in DLT initiatives in Europe. Over 60% of EU banks are exploring or using DLT, with 22% already implementing DLT applications. And on the securities side, there has been increasing number of high-profile issuances on DLT.

The role of central bank money and the Eurosystem's exploratory work

We at the ECB think that we need to be in this space from the very beginning.

The availability of central bank money for settling transactions that use these new technologies is important for two reasons. First, because if we don't, other settlement assets – such as stablecoins or tokenized deposits – will be used, reintroducing credit risks and fragmentation in the system. And second because the possibility to settle in central bank money is seen by the market as a key factor for the adoption of new technologies.

The Eurosystem has already worked with the market to test central bank money settlement of wholesale transactions using DLT. In 2024, we conducted exploratory work with DLT for settling wholesale transactions in central bank money. We offered three different solutions to link our infrastructures with market DLT platforms. This allowed industry participants to settle real transactions in central bank money, in addition to experiments with mock transactions.

This exploratory work stands out at global level in terms of scale and scope. Overall, 60 industry participants took part in our exploratory work, including incumbents and new entrants. More than 40 experiments and trials covered a wide range of securities and payments use cases. Among others, the Eurosystem's exploratory work included the first issuance by an EU sovereign and the largest DLT issuance to date. A total value of €1.6 billion was settled via trials within the 6 months of exploratory work, exceeding values settled in comparable initiatives in other jurisdictions.

Next steps

In the short term – months not years – the Eurosystem will aim to make it possible to settle DLT transactions in central bank money, with a view to enabling the market to continue developing their DLT offerings. The technological solution will be based on interoperability between market DLTs and the Eurosystem, but also – and this is very important – between market platforms, based on strong and enforceable standards.

[Importantly, we do not need new legislation for this – contrary to the digital euro –, as we benefit from the DLT pilot regime. And when the time comes to review the Pilot regime, we will be able to make good use of the experience we are gaining currently.]

Looking further ahead, we will investigate how DLT can be leveraged to create a more integrated financial market. With new technology, there is the opportunity to create a new ecosystem from scratch in a more integrated and harmonised manner. One way to achieve this integrated ecosystem in the longer term would be to move towards a European shared ledger bringing together token versions of central bank money, commercial bank money and other digital assets on a shared, programmable platform, on which market participants 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 the coexistence of legacy and new solutions.

Trade-offs between benefits of such flexibility and those of bringing everyone together on one platform need further analysis. We will reflect on these trade-offs and flesh out this long-term vision together with private and public sector stakeholders.

Conclusion

Let me conclude.

In the current fast-moving environment, Europe cannot stand still. If we do not bring central bank money in the digital world, we will hamper Europe's competitiveness, resilience and strategic autonomy. And we will miss out on the opportunity that digital payments and digital finance present. Others would reap the benefits.

Ensuring central bank money keeps pace with digitalisation and new technologies would instead safeguard our monetary sovereignty. It would overcome fragmentation by offering money that can be used for any digital transactions in the euro area. It would foster competition and innovation. And it would strengthen our autonomy and resilience.

Thank you for your attention.

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