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Technology, Money and the Financial Infrastructure of the Future

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José Luis Escrivá

Governor

Good morning.

Let me start by thanking IEMed and all the institutions involved in organising this tenth Conference of Mediterranean Central Banks. It is a pleasure to welcome you to Roda de Berà.

For centuries, the Mediterranean has connected economies and societies across its shores. This makes it a particularly appropriate setting for a discussion in which connectivity and interoperability will feature prominently.

The agenda of this conference reflects how rapidly the environment in which central banks operate is changing. We will discuss digital currencies, cross-border payments, remittances and the evolution of the international monetary system. These may appear to be very different issues, but they are increasingly connected by a common underlying transformation: the technology that underpins money, payments and finance is evolving at an extraordinary pace.

I would like to share with you my reflections on technology: not on technology as an end in itself, but as the force that is reshaping our financial infrastructures and even questioning our understanding of money.

Focusing on financial infrastructures, we hear every day that they are on the verge of a revolution. New platforms promise transactions that are faster, cheaper, more transparent and programmable. Decentralised infrastructures are often presented as the inevitable successor to an old financial system that is too slow, too costly and too complex. There is a degree of truth in this diagnosis, as technology is opening possibilities that would have seemed unrealistic only a decade ago. Yet I would like to introduce a different perspective.

Instead of asking only what must change, I ask myself what must remain? Which features of our monetary system are essential to public confidence, financial stability and the singleness of money? Which institutions and safeguards have value precisely because they are not visible in ordinary times? And how can we combine those foundations with the benefits of innovation?

My central message is simple. Technology can transform the way money and assets move, but it does not eliminate the need for trust. Innovation should not force us to choose between the old ways of doing things and the new ones. Our challenge is to make them work together: to preserve the role of central bank money as a monetary anchor of trust and stability by adapting *fiat money* to new technological environments, and by focusing our efforts on areas where today's arrangements may fall short.

I will develop this argument in three steps: what must be preserved, what must be adapted, and what must genuinely be improved.

1 WHAT MUST BE PRESERVED

The strength of the two-tier monetary system

To understand what is at stake, let us start with the architecture we have today. Our monetary system rests on the harmonious coexistence of two forms of money. The first is central bank money, including cash and reserves, and the second is commercial bank money, in the form of deposits held by households and firms.

These two forms of money perform different but complementary functions. Banks supply deposits, payment accounts and financial services while central bank money serves as the safest settlement asset. For this reason, the payment ecosystem is based on continuous interactions and transformations between these two types of money, relying on final central bank money settlement as a fundamental cornerstone. These routine conversions, combined with appropriate regulation, supervision and access to central bank liquidity, create the necessary confidence that different forms of private money are interchangeable one for one with public money, ensuring that, for instance, a euro is a euro regardless of which form it takes.

Money as a settlement asset has been and still is taken for granted. New technologies, however, have put the role of money into question and make these foundations visible. This is useful, because it forces us to examine critically an essential part of our financial system. But it also carries a risk: that an excessive enthusiasm for the new technologies makes us overlook the fundamental role of central bank money as a monetary anchor.

2 WHAT MUST BE ADAPTED

Distributed ledgers and tokenisation

Let's now turn to what has changed. A symbolic starting point is 2009, with the launch of Bitcoin. This demonstrated that a decentralised network could record and transfer value without a central operator, using a blockchain and a consensus mechanism to establish agreement among participants who did not need to trust, or even know, one another.

Bitcoin also revealed the price of removing trust from the centre of the payment system. Its high volatility, a resource-intensive consensus mechanism or scalability challenges showed that every institutional design involves trade-offs. A permissionless system can coordinate participants who do not know one another, but it must replace trust with technological and economic incentives that may be costly and highly inefficient.

But Distributed Ledger Technologies (DLT) have evolved considerably. In permissioned environments, participants are identified and governance can be better defined. Trust is therefore reintroduced, although in a new form. Combined with tokenisation, these platforms may offer important benefits such as lower reconciliation costs, synchronized settlement of complex transactions and greater automation through smart contracts.

The settlement asset used on these platforms has evolved as well. The early models relied mainly on unbacked crypto-assets. More recently, stablecoins have become prominent.

Although designed to maintain a stable value and increasingly subject to regulation, they remain private liabilities with varying degrees of collateralization. Their growth, however, has encouraged a powerful narrative: tokenised assets will live on DLT platforms, stablecoins will provide the cash leg, and the combination will replace much of the existing financial infrastructure.

This narrative is attractive because it is simple, but it conceals important questions.

The first one concerns the speed and order of a potential transition to a new steady state. The second concerns the nature of the settlement asset. We should not assume that adopting a new technology requires us to abandon the monetary arrangements that have supported confidence and stability. DLT and stablecoins are not inseparable. The technology used to record an asset and the money used to settle the transaction are distinct design choices.

Evolution, not disorderly revolution

The first challenge is time. Today's financial infrastructures are the result of decades of legal development, operational experience and risk management. They process enormous volumes reliably, and are deeply embedded in our regulatory and supervisory frameworks. Replacing this ecosystem is far from trivial.

For that reason, I expect a long period of experimentation and gradual adoption rather than an overnight revolution. DLT platforms are likely to coexist with conventional infrastructures for many years, requiring interoperability and safe bridges with existing systems.

If this transition is poorly managed, innovation could create fragmentation rather than efficiency. Liquidity might become trapped across disconnected networks, assets might not be portable, legal certainty might vary across platforms, and the singleness of money could be weakened. The objective must therefore be innovation with interoperability, common standards and sound governance.

The second challenge is conceptual. A tokenised security does not necessarily have to be settled with an unbacked crypto-asset or a stablecoin. There are no fundamental obstacles that prevent central bank money or bank deposits from operating in DLT environments. In other words, we do not need to give up our sound two-tier monetary system. We can adapt it.

This distinction matters. Technology defines how information and value are recorded, transferred and programmed. The settlement asset determines which liability changes hands and which risks participants bear. The decisive question is not whether the cash leg is digital—it already is in most wholesale markets—but whether it retains the qualities that underpin trust.

Adapting wholesale central bank money: Pontes and Appia

This is the logic behind the Eurosystem's work on Pontes and Appia: ensuring that central bank money remains available as financial markets become increasingly tokenised.

Pontes is the near-term, operational bridge. Launched in September 2026, it links approved market DLT platforms with TARGET Services so that wholesale transactions in tokenised assets can settle in central bank money. Its purpose is not to dictate which market platform should prevail; it is to ensure that innovation does not require market participants to give up access to the safest settlement asset. In this way, Pontes can support innovation while reducing the risk that tokenised finance develops as a collection of isolated islands.

Appia takes a broader and longer-term perspective. Its purpose is to help shape an integrated, innovative and resilient European ecosystem for tokenised wholesale finance. The Eurosystem plans to crystallise this work in a blueprint in 2028, in close cooperation with market infrastructures, technology providers and market participants.

Together, Pontes and Appia illustrate a pragmatic approach, learning from immediate market developments while preparing the future architecture of tokenized finance. Tokenised commercial bank deposits may also play an important role, extending the familiar two-tier model into programmable environments while preserving bank intermediation and customer relationships.

The deeper lesson is that public and private money can continue to complement one another even when both assets and infrastructures evolve. Innovation need not come at the expense of trust, stability and the monetary anchor provided by central bank money.

The retail dimension: a digital euro

The adaptation of money would be incomplete if it addressed only wholesale markets. Digitalisation is also transforming the way citizens pay. Cash is important and must remain available, but its use has declined as electronic payments have expanded. This creates a strategic question. If cash becomes less relevant in everyday transactions, would citizens still have meaningful access to central bank money in daily life?

Without a public option, payments would rely entirely on private money and private infrastructures, many of which are headquartered in foreign jurisdictions. In today's geopolitically fragmented world, strategic sovereignty issues deserve serious consideration.

The digital euro is designed to address this challenge. It would be a digital form of central bank money available for electronic payments, complementing—not replacing—cash or other private payment instruments. Citizens would have an affordable and inclusive option to pay with public money in shops, online or from person to person, with security and privacy, while banks and other payment service providers would remain central to distribution and customer-facing services. The project is now in a preparatory phase in which technical readiness is advancing and market engagement continues, while the Eurosystem is supporting the legislative process.

The objective, again, is to preserve the balance at the heart of our two-tier system. In a digital economy, citizens should continue to have access to public money, while private institutions continue to innovate, provide credit and offer payment services. The form changes; the complementarity remains.

3 WHAT MUST GENUINELY BE IMPROVED

Cross-border payments: where change is still urgently needed

So far, I have focused on adapting money and financial infrastructures to technological change while preserving the strengths of the monetary system, but innovation should also address the areas where existing arrangements still fall short. Cross-border payments are a clear example.

Domestic payments in many jurisdictions can now often be completed in seconds at very low cost. Yet cross-border payments frequently remain slower, more expensive and less transparent. Multiple intermediaries, differing standards and regulatory requirements continue to generate frictions.

Technology can contribute in several ways. One approach is to build new rails. Projects such as Agorá, led by the BIS, have demonstrated how tokenised central bank money and commercial bank money from different jurisdictions could support programmable, multi-currency settlement while preserving monetary sovereignty.

Another approach is to connect domestic fast payment systems, as initiatives such as Nexus seek to do. The Eurosystem is also exploring cross-border links between TIPS and payment systems in other jurisdictions.

At the same time, meaningful improvements can also come from enhancing existing correspondent banking arrangements through better data standards, longer operating hours, more efficient compliance processes and improved payment tracking.

Should we build new rails or rebuild the old ones? The realistic answer is likely to be both. Different use cases may require different solutions, but all should aim to deliver better outcomes for households and firms while preserving interoperability and safety.

And here we return to trust and coordination. While technology can help, the obstacles to better cross-border payments are not purely technical. Differences in legal frameworks, supervisory practices and regulatory requirements remain major sources of friction. Better cross-border payments therefore require stronger coordination among jurisdictions.

That is why cooperation between central banks, regulators and international organisations, and between the public and private sectors, is essential. And while central banks are particularly well placed to lead this dialogue, leadership does not mean acting alone.

This is especially relevant in the Mediterranean context, where trade, migration, tourism and family ties generate a constant need for reliable cross-border payments. Improvements are not abstract efficiency gains. They affect a small exporter waiting for payment, a worker sending money home, a student paying fees abroad and a company managing liquidity across several markets.

CONCLUSIONS

Let me conclude with three propositions.

First, technology is a game changer, but not everything needs to change. We should remove genuine inefficiencies while preserving the safeguards that underpin confidence. Central bank money is not a relic, it is a public good that cannot be easily replaced.

Second, fully reaping the benefits of innovation requires an evolution rather than a revolution. DLT platforms can support tokenised markets, but that doesn't mean that settlement assets need to fundamentally change. Pontes and Appia show how wholesale central bank money can adapt to new platforms. Tokenised deposits can extend commercial bank money into programmable environments. The digital euro can ensure that citizens retain access to public money as payments become increasingly digital. Together, these initiatives seek to carry the strengths of the two-tier monetary system into a new technological era.

Third, governance is key. Cross-border payments remind us that even the best technical solution will fall short without coordination across legal systems, authorities and market participants. We need experimentation, competition and private innovation but also standards, interoperability and a safe settlement asset.

The future of finance should not be framed as a choice between defending the past and embracing the future. The better question is how to combine what each does best. If we proceed carefully, we can do more than modernise existing infrastructures. We can build a financial system that is more resilient, more integrated and more useful to the people and businesses it serves. That will require patience, because transition takes time; ambition, because existing shortcomings are real; and cooperation, because no institution or jurisdiction can succeed alone.

For centuries, the Mediterranean has been a meeting place for the people who live around it—a route for trade and knowledge, but also a space in which differences had to be bridged. This is particularly inspiring for our discussions today. This gathering offers an opportunity to compare experiences, challenge assumptions and learn from one another.

Thank you.