Bond Markets 2.0: Embracing Tokenisation

Keynote speech[1] by Imène Rahmouni-Rousseau, Director General Market Operations, European Central Bank (ECB)

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Ladies and gentlemen, good afternoon, and thank you to AFME and Victoria for the invitation[2].

It is a pleasure to speak to a distinguished audience that represents the backbone of Europe's financial system. The sovereign bond markets you issue and trade in are among the deepest in the world. They contribute to fund our essential public goods such as education and healthcare and they allow to finance public investment to prepare for the future. They anchor the yield curve. They provide the safe assets that banks and investors hold as safety and liquidity buffers and pledge as collateral. And they are key to monetary policy transmission.

So, when we talk about transforming the fabric of markets and embracing innovation, there is no more important audience than this one. I would like to start in a slightly unusual way with a small guessing game. I am going to read you a short passage, and I would like you to figure out which great transformation it describes. I give you one small clue: you will need to go back in time. "This period saw the proliferation of clocks and the synchronisation of measured time. It was an era when a sense of accelerating time could be felt - both as a subjective experience and in tangible ways - notably through the shortening of distances." So, what is it?

Indeed, this refers to the railway revolution, and the quote currently welcomes visitors of a Monet exhibition in Paris where several of his paintings of trains and train stations are on display. But it could just as well apply to my topic today: tokenisation.

My message is simple. Tokenisation can transform European markets, the same way that the creation of railways networks transformed our sense of time and distances and with it the global economy. But that transformation will not happen through technology alone. It will happen through coordination, and coordination is what we must now focus on.

[1] The views expressed in this speech are my own and do not necessarily reflect those of the ECB or the Eurosystem.

[2] I would like to thank Antoine Lallour for his invaluable help in preparing these remarks, as well as Aurélien Broche, Alexander Düring, Jeff Moore, and Thomas Vlassopoulos, for their comments.

What tokenisation can do

Let me begin with the technology itself.

Today, the lifecycle of a bond passes through many steps: issuance, trading, clearing, settlement, payment of coupons and finally redemption. These steps are handled by different institutions. They take place on different systems, connected by messaging and reconciliation processes. This works, and works reliably. But it carries costs, delays, and operational frictions.

Tokenisation compresses this chain. It represents financial assets as digital tokens on *programmable* ledgers, often built on distributed ledger technology (DLT).

Programmability automates processes and makes them *composable*, which means combining them, like building blocks, into one seamless sequence. For instance, coupon payments and redemptions can be fully automated through smart contracts.

Securities can move faster and be mobilised across time zones as collateral. This can free up collateral that is today trapped within the settlement chain.

Faster collateral also supports more active liquidity management. When liquidity can be sourced just in time, banks and corporate treasurers can manage their intraday liquidity more efficiently. Bonds in tokenised format can become closer substitutes for cash, both in liquidity buffers and for meeting intraday needs.

Thus, tokenised instruments, by offering new functionalities and more convenience, can attract a broader investor base.

They can make European markets faster, cheaper, more transparent and more integrated. And for a fragmented European landscape, that last word, *integrated*, matters a great deal.

By now, the real question is not *whether* the DLT technology works for bond markets. It does. But rather: *under what conditions* can tokenised bonds function at least as well, and ultimately better, than the conventional bonds you issue and trade today? And how can they scale up?

But let me clarify first *what* we are trying to replace, or rather, to improve.

The pillars of bond markets

The depth and efficiency of today's bond markets did not arise overnight. They result from decades of incremental improvement across several core pillars.

First, **legal frameworks**: clear rules on ownership, transfer, finality. Investors buy bonds in part because they know with certainty what their rights are.

Second, **robust infrastructure for issuance and custody**: central securities depositories and custodians who keep accurate records and safeguard assets.

Third, **reliable market-making and trading services**: trading venues and intermediaries like primary dealers and liquidity providers. They support price discovery and liquidity across the curve. This is underpinned by liquid repo and futures markets, where intermediaries can finance and hedge their holdings.

Fourth, **trusted payment solutions**: above all, settlement in central bank money, the safest settlement asset.

And fifth, **eligibility as high-quality liquid assets and as central bank collateral**, which is why sovereign bonds are valuable to banks and central to monetary policy.

A tokenised ecosystem must preserve every one of these functions.

A market-wide exercise

That is why adoption must be a market-wide exercise, involving both public and private actors.

The different parts of the bond market depend on one another. Investors will hold tokenised bonds if they can trade them, settle them and pledge them as collateral. Market-makers will provide liquidity if there is enough issuance and enough investor demand. Infrastructure providers will invest if they see volumes coming. Issuers will issue if they are confident the market will absorb their paper at competitive cost. You cannot tokenise one corner of the market and hope that the rest will keep working around it.

But these mutual dependencies also create a virtuous cycle. As more components achieve readiness, they lower the barriers for the others. Each step forward makes the next one easier.

Picture the market as a set of interlocking gears: law, infrastructure, trading, payments and collateral. If one tries to turn while the others are stuck, nothing moves. But once enough of them engage, each one helps drive the rest, and the whole mechanism begins to turn.

Eurosystem as coordinator and catalyst

The Eurosystem is determined to play its part as coordinator and catalyst, and we are acting on several fronts.

First, **by providing on-chain central bank infrastructure with Pontes**. Pontes is our solution for settling DLT-based transactions in central bank money, by linking DLT platforms with our TARGET services. It ensures that tokenised markets in Europe can grow sustainably, anchored by central bank money, which is the safest, most trusted and most scalable cash settlement asset.

Second, by **making tokenised securities eligible as central bank collateral**. Since March, we accept certain DLT-based assets as collateral in Eurosystem credit operations. This is a key enabler as central bank collateral eligibility is one of the main reasons sovereign and other high-quality bonds are valuable.

Third, **by shaping a shared vision of the future tokenised ecosystem** with **Appia**, a public-private partnership to design an integrated European wholesale tokenised ecosystem. Being clear on the architecture empowers each contributor to build their own corner of the system.

Fourth, by **investing** a small portion of our own funds **in tokenised public sector securities** to gain firsthand experience as an investor and develop institutional knowledge.

With these steps, we are putting our full weight behind this new system, and also, literally putting our money where our mouth is. But we cannot build it alone. We need each of you to do your respective part, and to help us bring this system into existence.

Nonlinear trajectory

Let me now say something about the likely pace of change, because expectations matter.

Mutual dependencies and the need for coordination mean that adoption will not follow a straight line. Until enough components are ready, adoption will remain limited. Once they are, it can take off quickly.

This is a common feature of general-purpose technologies. In the early days, it is easy to overestimate the speed and magnitude of their impact. Casual observers are then surprised by how long adoption takes, and some conclude that the technology has failed. But in the long run, these technologies take over completely.

Think of the internet. In the late 1990s, expectations ran far ahead of reality, and many concluded after the dotcom bust that the promise had been exaggerated. Yet over the following two decades, the internet reshaped commerce, communication and finance more profoundly than even early enthusiasts imagined. It needed complementary pieces to fall into place, such as broadband, secure payments, mobile devices and new business models, before its full potential could be realised.

I expect tokenisation to follow a nonlinear path as well. We should neither be discouraged by a slow start nor complacent about the eventual scale or speed of change.

Where adoption will come first

Adoption will not proceed at the same pace everywhere.

The pace depends largely on how complex the coordination problem is. Where few players need to align, the benefits can be captured quickly and visibly, and take-up will be faster. Where a larger number of entities must move together, progress could take longer.

For that reason, the benefits of tokenising bonds are likely to be felt first in the primary market, and only later in secondary market trading.

The primary market is already coming on chain. We have seen DLT issuances by Luxembourg and the ESM. And very soon, project Pythagore[3] will bring a coordinated, multi-issuer shift to DLT issuance, for an entire euro commercial paper market.

Hybrid infrastructures as bridge

How do we make progress while the full ecosystem is still being built? One practical answer is hybrid infrastructure.

Hybrid infrastructures allow us to overcome mutual dependencies. When you have a use case for tokenisation, you use the tokenised version, but you keep access to all other components of the existing market by detokenising where necessary. A bond might be issued and settled on a DLT platform, while remaining fully usable in conventional custody chains, trading venues and collateral frameworks. And existing bonds can be tokenised on demand, as well.

This way, the benefits of tokenisation can be captured where they are clearest, without waiting for every other part of the market to be ready, and without sacrificing the secondary market liquidity, legal certainty and collateral value that the existing system provides. Hybrid models are not the destination, but they are a valuable bridge.

The role of debt management offices

Let me close by speaking directly to the sovereign issuers in this room.

I imagine many of you are wondering whether, when and how to issue tokenised instruments. As I argued earlier, for markets to fully tokenise, all their pillars will need to adapt. Your mandate is to issue at the lowest cost for taxpayers. So, many of you may see a trade-off between being ready in time and moving too early, before the ecosystem has matured and liquidity has followed.

But when tokenisation takes off, sovereign issuers will be among its main beneficiaries. That gives you a particular stake in how the future ecosystem takes shape. It needs to be innovative. It needs to be open to competition in the provision of key services. It must not be fragmented. And it must preserve our strategic autonomy.

[3] Project Pythagore is a joint initiative by the Banque de France and Euroclear to modernise the Negotiable European Commercial Paper (NEU CP) market using distributed ledger technology (DLT).

These outcomes will not necessarily emerge on their own. That can and should encourage you to shape this ecosystem proactively according to your needs, rather than waiting to adapt to one designed by others.

Tokenisation faces a classic chicken-and-egg problem. Investors and intermediaries wait for issuance; issuers wait for investors and intermediaries. Sovereign issuers are uniquely placed to break this deadlock. Because sovereign debt sets the benchmark yield curve for the entire market, tokenised sovereign issuance would create powerful incentives for others to issue. It would bring scale, credibility and trust. And it will send a clear signal: tokenisation is here to stay and it is worth building infrastructure, liquidity and services around it.

You do not need to move your entire programme at once. But regular, predictable tokenised issuance, even at modest size, settled in central bank money and eligible as collateral, would give the rest of the market the anchor it needs to coordinate around.

Conclusion

The technology is ready. What remains is the coordination.

The Eurosystem is doing its part: providing settlement in central bank money through Pontes, accepting DLT-based assets as collateral, shaping a shared vision through Appia, and dipping its toes into tokenised investment of its own funds. Sovereign issuers can provide the backbone of issuance. Market participants can provide the liquidity, infrastructure and services that turn individual transactions into a functioning market.

If we each play our part, the virtuous cycle will take hold. Adoption may seem slow at first, then surprisingly fast. And Europe will have built a tokenised bond market that is deeper, more efficient and more integrated.

Let us build it together.

Thank you.