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Finance in transition: the Central Bank's approach to tokenised finance – Speech by Deputy Governor Vasileios Madouros

26 May 2026 Speech



¹We are at the early stages of a potential technological rewiring of finance. Fast-forward ten or twenty years, and it seems likely that the use of shared, programmable ledgers – and the tokenisation of financial assets – will have become embedded across the financial system.

Today, we stand at a juncture. The question is less whether the technology will transform finance. Rather, it is how we collectively shape this ongoing transition, so that the potential of tokenised finance is realised, from the perspective of households, businesses and the broader economy.

Central banks are not just observers of this evolution, but active participants, providing many of the enabling foundations for the private sector to innovate responsibly. So today I want to outline how the Central Bank of Ireland is approaching the emergence of tokenised finance.

The transformative potential of tokenised finance

Let me start by recognising the transformative potential of the technology.

At its core, the modern financial system relies on a system of ledgers. Every bank deposit, every security, every loan is recorded on a ledger maintained by a financial intermediary. And most financial transactions ultimately rely on well-established – but also complex and costly – processes for updating and reconciling those ledgers across financial institutions.

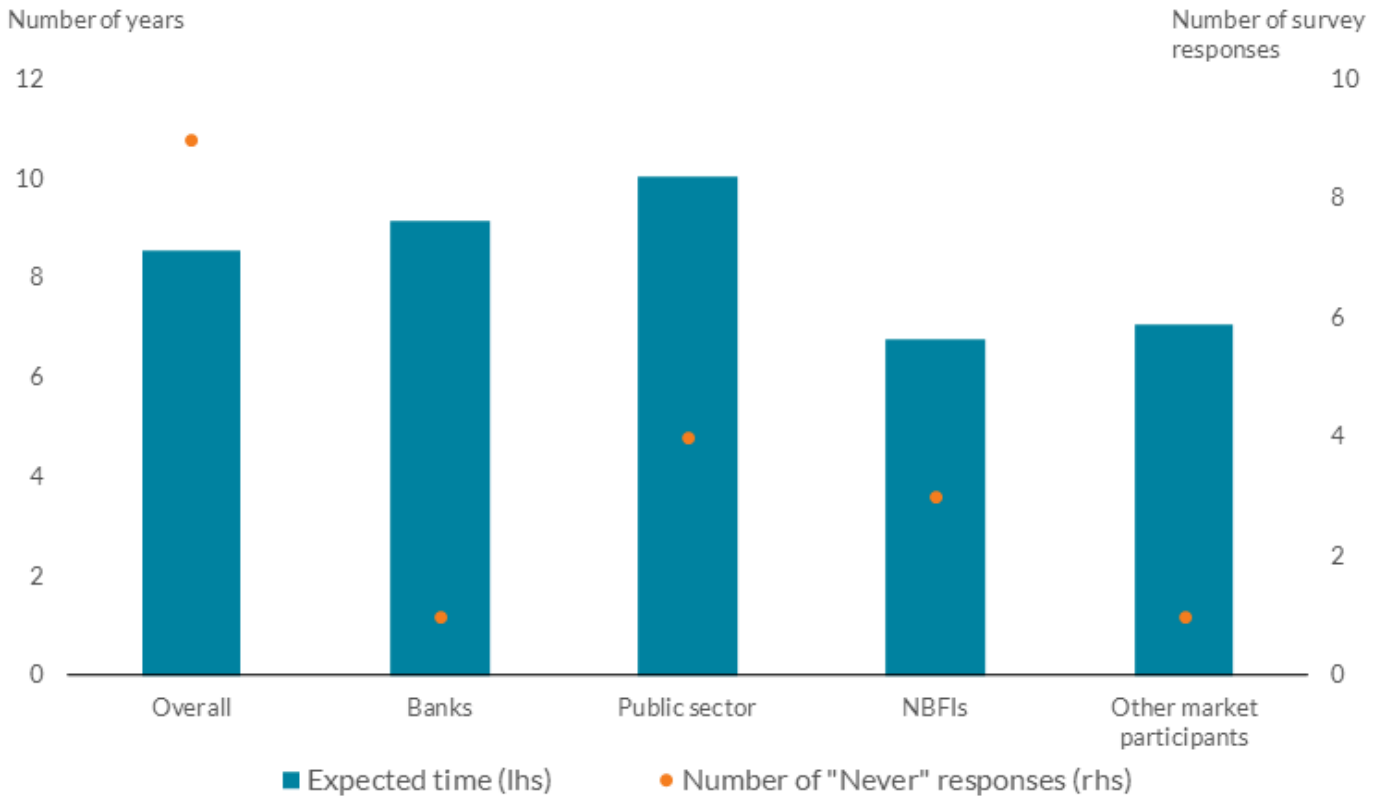
Tokenisation – and the use of distributed ledger technology in finance – supports two core innovations. First, it enables a shift to shared ledgers that different parties can simultaneously agree on and update. Second, it enables programmability of transactions, with the shared ledgers not just containing a record of ownership, but also information that enables the execution of transactions based on pre-defined conditions.

While these innovations relate to the underlying ‘plumbing’ of finance, their implications go far beyond that. Tokenisation offers the potential for real-time or near-instant settlement in markets, reduced counterparty exposure, 24/7 system availability and lower operational costs. Together, these can make financial services substantially more efficient, with ultimate benefits for households and businesses in terms of cost, speed and availability.

But the potential of tokenisation goes beyond efficiency of existing services. It can also support the emergence of entirely new services, meeting the evolving needs of households and businesses. Smart contracts, for example, have a range of possible applications in wholesale markets and in retail financial services. Tokenisation can also deliver an additional way to achieve fractionalisation of assets, broadening retail participation in capital markets. And, as with all technological innovations, it is likely that tokenisation can lead to the emergence of services that we may not even have thought about today.

Market interest in tokenisation is growing rapidly. Financial institutions globally are building capabilities, piloting use cases and investing in the underlying infrastructure. In a recent Eurosystem ad hoc questionnaire, respondents expected tokenisation to become the dominant venue for asset issuance, settlement and trading within the next decade.

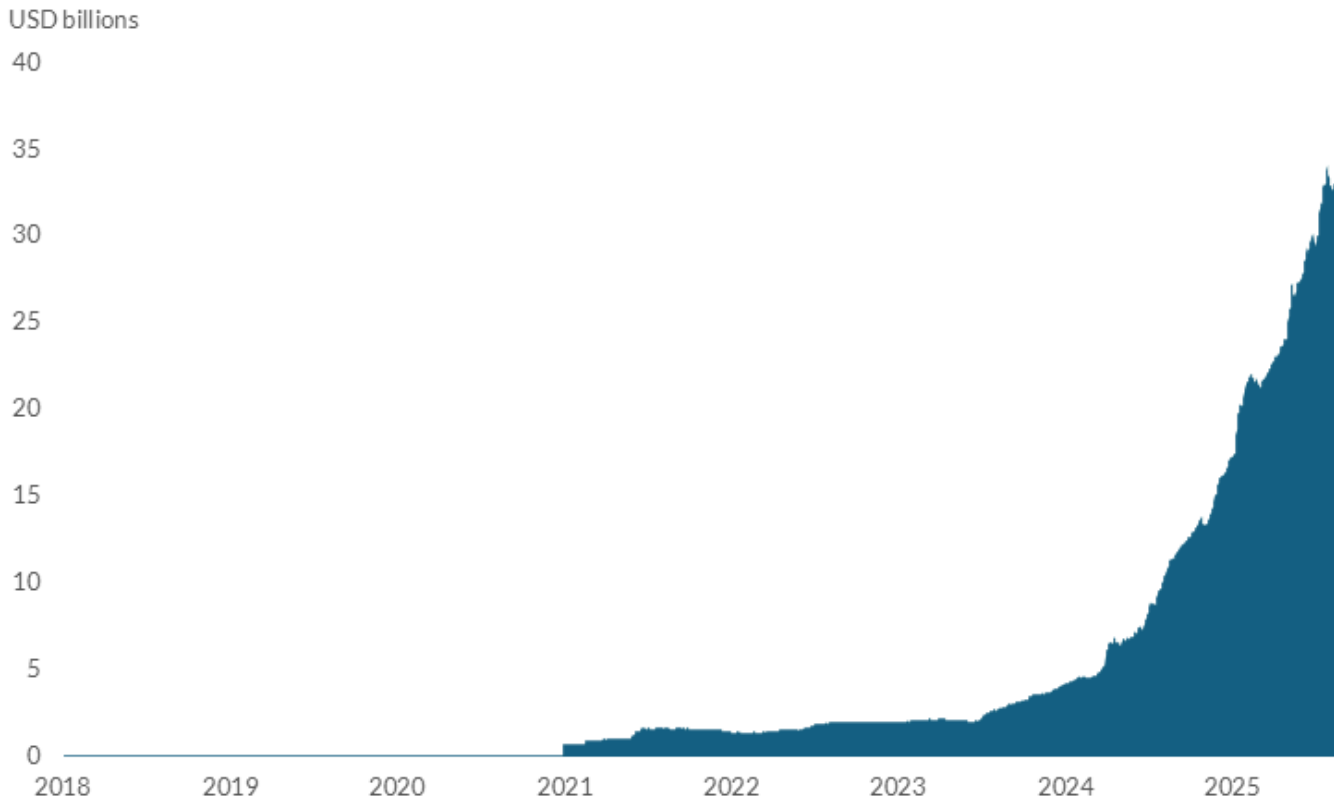
Chart 1: Market participants expect tokenisation to scale over the next decade



Source: Eurosystem Survey on "Trends and Adoption of Tokenisation". Notes: Survey respondents were asked the following: "When do you expect tokenised markets to become the dominant venue for asset issuance, settlement, and trading?". Total number of respondents was 52.

In practice, of course, we are still at the very early stages of this evolution. Tokenised real-world assets on public blockchains, for example, increased more than threefold over the past year, but still represent a tiny share of global financial assets.

Chart 2: Real-world assets on public, permissionless chains have grown rapidly, but are very small still



Source: rwa.xyz.

Navigating the transition towards tokenised finance

In thinking about how we collectively navigate this transition, it is important to recognise two realities upfront. First, that this is a system challenge, requiring coordination across the sector. And, second, that we do not have certainty over what the precise configuration of the financial system in the future will be. Let me briefly cover each.

A system-wide evolution...

Technology, in and of itself, will not deliver the benefits of tokenisation for users of financial services. We know that from history. Past transformative technologies only realised their potential when entire systems adapted around them. Railways required common track gauges and standard time keeping. The telegraph required coordination around signalling and traffic.² Tokenisation in finance is similar.

For example, to unlock the true potential of tokenised finance, it is important to consider jointly the tokenisation of assets and money. Any financial transaction requires a cash leg, so both are essential foundations of a DLT-based ecosystem to flourish. That, in turn, requires an evolution in both private and public forms of money. In addition, for the benefits of tokenisation to be realised, interoperability across systems, networks, and jurisdictions will be essential. If that is not there, we may see a costly and inefficient fragmentation of liquidity across markets.

So, a systems lens is required for tokenised finance to scale and deliver on its potential. No individual market participant can, on their own, transform finance. The entire ecosystem needs to evolve and adapt, if we are to avoid a fragmented, siloed, riskier landscape in the future.

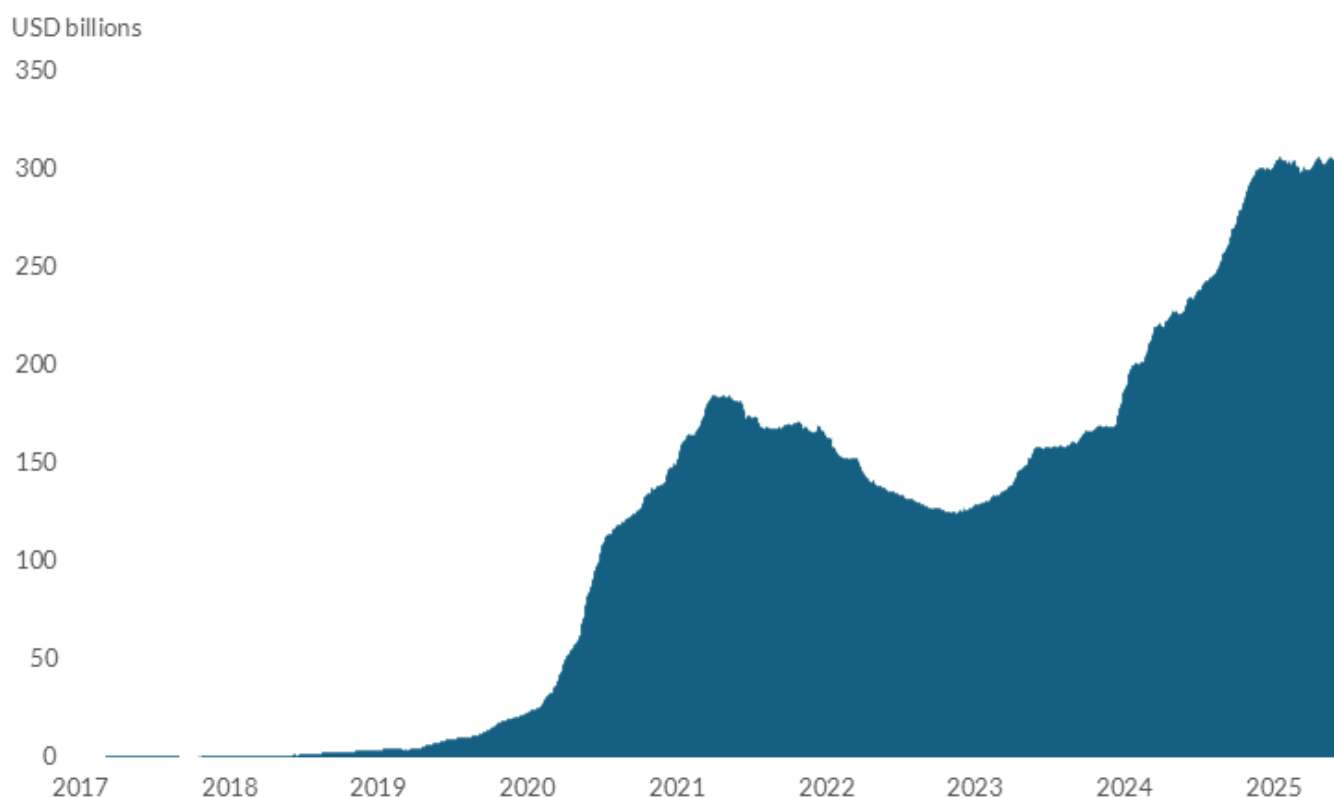
...with uncertainty around the future end-state.

Beyond being a systems challenge, it is also important to recognise that we do not know with certainty what the precise configuration of the financial system in the future will be. Tokenisation has the potential not just to rewire the technological underpinnings of finance, but also reshape the structure of the system itself. Let me illustrate this point with three examples, which – in my view – are particularly macro-relevant.

The evolution of private money

The first relates to the evolution of private money. A key feature of the DLT-driven innovation to date has been the emergence of new forms of private money-like assets in the form of stablecoins.

Chart 3: Stablecoins have grown markedly, acting as the key instrument for setting transactions on-chain



Source: rwa.xyz.

Stablecoins are currently the main settlement asset of DLT-based transactions and, increasingly, are being used for broader purposes, such as cross-border payments.³

Stablecoins offer many of the technological benefits of DLT-based infrastructures. But they also entail a higher risk of deviation from par.⁴ And, especially if issued by non-banks, they can also lead to a substitution away from retail deposits issued by the banking system, with macrofinancial implications. Recent ECB research, for example, has found that large-scale substitution of retail deposits into non-bank stablecoins could weaken the transmission of monetary policy, affecting bank lending to firms and households.⁵

Tokenised bank deposits are another DLT-based form of private money.⁶ They can harness the technological benefits of DLT, within the existing two-tier monetary architecture. And, because of that architecture, they do not pose the same risk in relation to deviation from par. They also better support the credit creation mechanism, especially in bank-based financial systems.

Looking into the future, it seems likely that different forms of private money will co-exist. That is also the case now, with usage depending on consumer preferences and the offerings provided by the financial system. Underpinning that co-existence, of course, is trust that a unit of currency has the same value regardless of who issues it. Indeed, most people do not experience any difference between different forms of private money. As we navigate the evolution of private money, maintaining that core foundation is essential.

The shape of the capital markets ecosystem

The second dimension relates to the shape of the capital markets ecosystem. Tokenisation may significantly alter the role of established and regulated intermediaries – such as CSDs, custodians, or clearing houses. Certain functions currently conducted by such intermediaries may be embedded directly into smart contracts or distributed ledgers.

While this can reduce operational frictions, it may also reallocate roles and activities away from institutions subject to regulatory and oversight frameworks toward technological components. At the same time, tokenised capital markets may become increasingly dependent on new entities – such as validators, oracles or bridge operators – whose activities could become increasingly systemically relevant.

The reshaping of the capital markets ecosystem also represents an important opportunity, especially for Europe. The European capital markets landscape emerged organically out of countries' domestic infrastructures. This has resulted in a fragmented landscape of clearing and settlement systems. As the tokenised capital markets ecosystem develops, a guiding principle should be supporting the deepening and integration of European capital markets.

The configuration of the DLT infrastructure

A final important question relates to the future configuration of the underlying DLT infrastructure itself. In recent years, we have seen the development of a growing number of underlying DLT platforms.

There are different conceivable architectures for a future DLT ecosystem. Will we end up with a small number of underlying DLT platforms consolidating much of the on-chain activity, or will there be more competition at the infrastructure level? Similarly, will most of the future on-chain activity be on permissioned DLT networks, or is there a future in which public, permissionless platforms become increasingly prevalent for the tokenisation of real-world assets?

These remain open questions still. And the different configurations matter for ultimate economic outcomes: competition and innovation at the infrastructure level; the integration of liquidity across markets; governance and accountability, as key enablers of resilience. What is clear, though, is that any ultimate configuration needs to ensure interoperability, prevent fragmentation and maintain strong and accountable governance of the core infrastructures supporting finance.

How the Central Bank is responding

Let me now turn to how the Central Bank – as part of the Eurosystem and the European System of Financial Supervision – is approaching the emergence of tokenised finance.

To be clear upfront, our overall stance is positive. We very much recognise the benefits it can offer for consumers of financial services and the economic opportunities it can unlock. Nevertheless, this is not a predetermined outcome. Broader foundations – beyond technology – need to be there for that to happen. Our contribution centres around providing several of these foundations, so that the system can realise the benefits of tokenisation, while managing risks.

Evolution of central bank money

A key dimension of our response is the evolution of central bank money. In any economy, central bank money is the safest, most liquid financial asset, acting as an anchor of stability for the financial system and the broader economy. As finance shifts to a tokenised infrastructure, it is essential that central bank money continues to play that role. We are working to ensure that central bank money remains fit for the digital age, both at a wholesale and a retail level.

On the wholesale side, the Eurosystem has been progressing an important project to enable settlement of DLT-based transactions in central bank money. The initial launch phase will be later this year, making the Eurosystem amongst the earlier major central banks in the world to enable such an outcome.⁷ The exploratory work that preceded this project demonstrated a strong appetite from the market for such a foundational response. Ensuring that wholesale DLT-based transactions can settle in central bank money is a key enabler for the broader tokenised ecosystem to scale effectively and safely.

On the retail side, the Digital Euro project is progressing at pace. While not relating to DLT infrastructures per se, the objective of the Digital Euro is very clear: to give citizens and businesses a reliable, public, digital form of money that works anywhere in the euro area, complementing cash. That will also preserve the role of central bank money as the anchor of the retail payments system. As part of the Eurosystem, we are contributing to the design of, and preparation for, the Digital Euro. And, in the second half of this year, we will be supporting our colleagues in the Department of Finance as they lead the negotiations to progress the Digital Euro legislation during Ireland's presidency of the Council of the EU.

Acceptance of DLT-based assets as eligible collateral

A second dimension of our response relates to the acceptance of assets as collateral in our monetary policy operations, which research has shown can have a positive effect on market functioning.⁸ In March, the Eurosystem took a first step in that direction by starting to accept marketable assets issued in central securities depositories using DLT.⁹ And we have launched an ambitious workplan to explore if, how and under what criteria assets issued using DLT – and not represented in eligible securities settlement systems – could become eligible as Eurosystem collateral in the future. This reflects the Eurosystem's continued commitment to encouraging innovation and technological progress, enhancing market efficiency, and contributing to the integration of European capital markets.

A responsive approach to regulation, supervision and oversight

A third dimension of our response relates to our approach to regulation and supervision, which has been – and continues to be – responsive to the innovation we are seeing in finance.

The regulatory framework itself has already adapted to the growth of digital assets, with the introduction of MiCAR in Europe. The Central Bank is the National Competent Authority for the authorisation and supervision of MiCAR entities in Ireland. We have put in place a well-resourced and expert team to authorise and supervise these new entities. With tokenisation becoming increasingly embedded in finance, it will also become increasingly relevant to all aspects of our supervisory work – as demonstrated, for example, by last week's announcement by two retail banks to join a consortium of European banks issuing a stablecoin.

The Central Bank's Innovation Sandbox is another example of our responsive approach to regulation and supervision. It provides a structured environment for firms to develop and test innovative financial products and services in close dialogue with us. It allows us to build insights into how these technologies work in practice, and to consider their implications for consumers, for market integrity, and for financial stability. This year's sandbox, focused on innovation in payments, already includes initiatives that deploy DLT applications. And I expect that future iterations of the sandbox will continue to explore tokenisation in finance.

We also recognise that there may be areas where the regulatory framework may need to adapt. This is one of the reasons we issued our Discussion Paper on tokenisation in March.¹⁰ Amongst others, we want to understand whether there are any specific elements of the current Irish or EU regulatory or legal frameworks that need to evolve, to remain fit for purpose as tokenisation scales across the financial system. The deadline for response to the Discussion Paper is next week, and we want to hear from a wide range of stakeholders.

A catalysing role

Finally, a somewhat subtler, but still important, part of our response is acting as a catalyst for the system to co-ordinate towards better outcomes from a public policy perspective.

In Europe, we do this through our contribution to the Eurosystem's work to develop a longer-term vision for a European tokenised financial ecosystem.¹¹ That work will entail significant engagement with the private sector – and I urge many of you in the room to grasp these opportunities as they become available. Because, ultimately, designing the future ecosystem relies on an effective public-private partnership.

Domestically, we do this through the Central Bank's 'convening power' and active engagement with market participants via different fora – such as the Irish Retail Payment Forum or the Financial Industry Forum. These offer opportunities to identify areas where engagement and collaboration across different parts of the ecosystem could lead to better outcomes from a public policy perspective.

Conclusion

Let me conclude here. We are at a pivotal moment in the next wave of a technological rewiring of finance. Done well, tokenisation has the potential to both make finance more efficient as well as to lead to the provision of new, innovative services to meet the evolving needs of households and businesses.

But that is not a predetermined outcome. At the Central Bank, we are setting core foundations to enable that: central bank money as the system's anchor; regulation that is adaptive, and continues to safeguard financial stability, safety and soundness, consumer protection and market integrity; and coordination across the ecosystem to avoid fragmentation.

The shift towards tokenised finance is an opportunity for Europe and for Ireland to strengthen our financial system so that it supports the broader economy into the future. And it is an opportunity we need to collectively grasp. Thank you for listening this morning and I look forward to continuing the engagement on this important topic over the coming months and years.

[1] I am very grateful to Seán O'Sullivan, Anne Marie McKiernan, Mícheál O'Keefe, Ray O'Connell, Rosemary Hannah, Gillian Phelan, Patrick Haran, Reamonn Lydon and Gavin Ó Ceallacháin for their advice in preparing these remarks.

[2] See, for example, Spar (2001) 'Ruling the Waves: Cycles of Discovery, Chaos, and Wealth from the Compass to the Internet', Harcourt Trade Publishers.

[3] See, for example, Adrian et al (2025) 'Understanding stablecoins', IMF Departmental Paper, and Barta et al (2026) 'Stablecoin payments: the truth behind the numbers'.

[4] See, for example, Kosse et al (2023) 'Will the real stablecoin please stand up?', BIS Papers.

[5] Altavilla et al (2026) 'Stablecoins and monetary policy transmission', ECB Working Paper.

[6] See, for example, G30 (2026) 'The past and future of money: new technologies and economic risks', and Lagarde (2026) 'Stablecoins and the future of money: separating functions from instruments'.

[7] See, for example, Cipollone (2025) 'Innovating for stability: central bank money in the digital era', and more information on the Pontes project.

[8] Pelizzon et al (2024) 'Collateral eligibility of corporate debt in the Eurosystem', *Journal of Financial Economics*, Volume 153.

[9] See ECB paves way for acceptance of DLT-based assets as eligible Eurosystem collateral.

[10] Central Bank of Ireland (2026) 'DLT and tokenisation in finance services, *Discussion Paper* (PDF 1.37MB).

[11] ECB (2026) 'Appia – paving the way for a future-ready, integrated financial ecosystem leveraging tokenisation and DLT'.