

Scaling up tokenisation and DLT

1. Tokenisation market trends and ongoing experimentation

An industry representative highlighted that currently only \$15 billion in real world assets are tokenised, but, with over \$100 trillion in capital market financial instruments globally, some forecasts suggest this could rise to \$30 trillion within five years.

Another industry representative added that according to a recent report, the global tokenised real-world asset market could grow to \$19 billion by 2033. While real estate and investment-grade bonds have led adoption so far, use cases are rapidly expanding to include liquidity management, collateral optimisation, trade finance, and treasury management for corporates.

A regulator explained that in Germany the approach to tokenisation has followed a step-by-step process, making use of the opportunities provided by the EU distributed ledger technology (DLT) pilot regime. The initial phase focused on the issuance of digital securities, which are electronic representations of traditional bonds issued under the existing regulatory framework. In this setup, order processing is carried out by traditional market actors using an off-chain register. Several digital bonds have already been successfully issued and redeemed this way.

The next stage involves the issuance of crypto-assets recorded on-chain, with order execution handled by market participants who are licenced under the Markets in Crypto-Assets Regulation (MiCA) framework. A range of pilot projective has been developed in this context. For the payment leg, the German Bundesbank offers a "trigger solution", which is a mechanism that emulates the functionality of on-chain settlement while not being fully on-chain. The most advanced phase consists of the integration of multiple value chain functions within a single legal entity. This model was tested in 2024 through a digital trading and settlement platform licensed by BaFin under the EU DLT pilot regime. The results and learnings of these tests were positive.

The DLT pilot regime offers a valuable opportunity to gain practical insights in a secure environment, while maintaining the reliability required of financial infrastructures, the regulator added. Since a minimum viable product approach is not suitable for such critical systems, innovation in this field tends to be evolutionary rather than revolutionary. As such, there is significant value in the experimentation and use cases being developed within the DLT pilot regime.

An official noted that different types of digital securities can be issued, transacted and used as collateral including digital forms of traditional bonds, equities and fund units. The UK's Digital Securities Sandbox (DSS) allows issuance, trading and settlement of digital securities within a single legal entity by switching off existing rules

and accommodates public and private DLTs. Eight firms have already applied to the sandbox, testing a variety of business models and features such as atomic settlement and fractionalisation. The UK government has committed to include the Digital Gilt Instrument (DIGIT) in the DSS. This experimentation will inform future regulatory adjustments, helping participants develop sustainable models. Not all experiments will succeed, but the learning process is essential.

2. Opportunities and benefits of tokenisation

The Chair highlighted the main benefits of tokenisation for financial activities, including cost reductions, enhanced transparency, improved reconciliations, 24/7 operations, and programmability of smart contracts. However, these benefits still need to be fully demonstrated.

An industry representative stated that tokenisation and moving assets on-chain could lead to significant cost savings and greater efficiency compared to legacy systems. A Global Financial Markets Association (GFMA) report estimates up to \$16 billion in annual savings, mainly through disintermediation in the post-trade infrastructure. Tokenisation and value transfers on blockchain also have the potential to democratise finance, by enabling broader access of retail investors to different types of investments and by supporting the financing of SMEs, which will contribute to the objectives of the Savings and Investments Union (SIU).

A second industry representative added that a key characteristic of crypto markets is their global nature. Traditional market infrastructures have expanded internationally, but they tend to be more tied to their original market base. Crypto markets facilitate cross-border asset transfers with fewer barriers and in a simpler way. Crypto-asset service providers (CASPs) have also pioneered the notion of 24 / 7 / 365 markets, underpinned by digital assets such as Bitcoin, Ethereum and stablecoins. Additionally, DLT and tokenisation can provide investors with access to asset classes in ways that were previously unavailable, particularly for emerging markets. This will enable broader participation, financial inclusion, and a more efficient capital formation.

A third industry representative agreed that tokenisation offers transformative potential for capital markets globally, and encouraged the EU authorities to support the acceleration of its deployment. The core advantage of tokenisation lies in its ability to record and transact assets on a blockchain ledger shared by different market participants, enabling near to real-time settlement in three to six seconds, as well as automated transactions. The asset and cash legs of transactions can be synchronised to achieve a similar outcome to delivery versus payment (DVP).

Compliance can be embedded into a smart contract and fractional ownership can expand access to investment opportunities. These features generate three main types of benefits. The first benefit is operational efficiencies in terms of speed and cost, with up to 40% issuance cost savings for corporates. The second benefit is greater accessibility for issuers and investors. Tokenisation can lower barriers to accessing capital markets for SMEs with the ability to issue bonds in smaller sizes. Investors may also access more diversified, lower-cost investment opportunities with smaller transaction sizes. The third benefit is resilience due to the underlying blockchains that eliminate single points of failure with decentralisation and enhance transparency.

An official concurred that tokenisation offers the potential for faster, cheaper and more efficient transactions, as well as for executing complex transactions more efficiently. This can be beneficial both on the asset and liability sides. If properly implemented, it could broaden market access, deepen capital markets and support economic growth. The biggest near-term potential lies in private markets, where trading structures and conventions are less established with many inefficiencies, and where tokenisation could reduce frictions and costs.

In more established markets tokenisation can also help to increase efficiencies by unlocking underused collateral, enabling fractional ownership, or increasing accessibility to certain assets. Instant settlement can also help to reduce settlement risks, but it is unlikely that wholesale firms will sacrifice the netting benefits or funding efficiencies for that instant settlement. In the longer term, tokenisation could also lead to a reorganisation of market structures as a result of the ability to collapse different functions into a smart contract, which will not require the same intermediaries as at present.

An industry representative noted that their bank is currently testing the practical benefits of securities tokenisation to reduce infrastructure costs, in collaboration with partner institutions, including insurance companies and the European Investment Bank (EIB). Tokenisation is a strategic priority for their bank, as a lever for boosting operational efficiency and remaining competitive in an increasingly digital financial environment. Unlike digital-native players, banks currently operate on legacy infrastructures, which are expensive to maintain and lack flexibility.

3. Challenges to address and conditions to meet for developing tokenisation

An industry representative stated that while a high level of capability has been achieved by banks for tokenising primary markets, scaling up the market remains a

challenge, as evidenced by experiments that have been conducted in recent years. One issue centres on developing secondary market liquidity, so that digital assets such as digital bonds can be traded at a sufficient scale to be in the balance sheet of banks and asset managers. The DLT pilot regime has helped in the testing phase, but it is constrained by the €6 billion market value cap¹, which makes commercial viability of DLT platforms difficult in a context where the total outstanding market cap amounts to €100 billion to €300 billion.

The second issue is fragmentation. Technological fragmentation, with each bank potentially developing its own DLT platform and with multiple blockchain protocols available, which limits interoperability and liquidity, must be overcome. Convergence will inevitably happen, but it should be accelerated. The Agorá unified ledger concept proposed by the Bank of International Settlements (BIS) could help in this regard. Regulatory fragmentation, particularly between the EU and US, is also a concern, the industry speaker added. The US SAB 121 rule that risked fragmenting the global market was recently repealed², but other challenges come from the Basel prudential regulations, which treat public and private chain-issued securities with identical risk profiles differently, potentially undermining technological neutrality.

Banks face the added challenge of balancing innovation with their responsibility to uphold financial stability and protect customers. This includes offering properly regulated products and payment solutions, which is supported by the legal clarity provided by the MiCA regulation and the DLT pilot regime.

A regulator added that national competent authorities (NCAs) welcome innovation that can potentially lead to more efficient markets as long as it is pursued responsibly, preserves financial stability, anti-money laundering (AML) compliance, and cyber resilience.

An industry representative emphasised that one of the key challenges lies in managing the transitional phase where the emerging digital ecosystem of tokenised assets will coexist alongside traditional market infrastructures. Industry-wide cooperation will be essential to effectively bridge the gap between legacy systems and new digital solutions. This transitional period raises important questions regarding settlement governance, particularly how interactions between the digital ecosystem and traditional infrastructures might affect the functioning of tokenised assets, notably those that confer voting rights, and how settlement processes are handled.

There is a need to apply existing regulatory frameworks in creative and adaptive ways to govern the aforementioned hybrid systems, which will operate tokenised assets and traditional structures in parallel.

An official added that sufficient market standardisation is needed to fully realise the benefits of tokenisation,

1. The total market value of DLT transferable securities recorded at a DLT Market Infrastructure may not exceed EUR 6 billion at the moment of admission to trading or initial recording.

2. SAB 121 was a rule issued by the U.S. Securities and Exchange Commission requiring banks to hold digital assets on their balance sheets as liabilities with corresponding capital charges. Intended to address custody risks, it was criticised for discouraging institutional involvement in tokenisation and was ultimately repealed due to concerns that it hindered innovation and conflicted with broader financial regulatory goals.

particularly in post-trade processes. That standardisation potentially needs to be driven by public authorities.

The Chair summarised that while tokenisation holds significant promise for the future of finance, scaling its use requires addressing several challenges—most notably, achieving interoperability, ensuring regulatory clarity, and securing access to appropriate settlement assets. Ongoing dialogue and cooperation between public authorities and private sector stakeholders will be essential to unlocking the full potential of tokenised finance. This engagement will also be key to managing potential divergences, particularly in relation to the most appropriate settlement assets for tokenised ecosystems.

4. Policy priorities and next steps

4.1 Policy priorities to support the adoption of tokenisation

An industry representative stated that the US is advancing quickly; it is introducing a market structure bill, which is likely to be agreed by Q3 2025 at the latest, that goes beyond experimentation. The bill proposes rules for using blockchain to trade financial instruments. Europe needs a similar policy momentum to adapt its market structure.

There are currently different perspectives in Europe among the private and public sectors on how to capitalise on DLT. A decision needs to be made for tokenisation markets about whether assets are going to be moved onto the chain within private, closed ecosystems, or using public, permissionless blockchains. The private sector is generally in favour of the latter option; there is an increasing recognition by public sector stakeholders of the potential of that option. Public, permissionless blockchains are more secure, resilient, interoperable, and innovation friendly, so the option should be kept. It is likely that there will eventually be a combination of the two systems, with a neutral, public and permissionless base layer, and then a permissioned, know your customer (KYC) layer on top of it, similar to the structure of the internet.

Several other policy issues need further consideration in order to scale tokenisation, the industry speaker suggested. One issue is the 1,250% risk weight that is currently applied to bank exposures to permissionless blockchain assets. The treatment blocks scale-up and contradicts risk sensitivity. Cooperation between crypto-native and banking sectors to advocate for balanced prudential treatment is welcome and the change of US administration may create opportunities for alignment. The implications of the Central Securities Depository Regulation (CSDR) and the Settlement Finality Directive for the scaling of tokenization also need considering. The MiCA capital requirements on stablecoin issuers may also need reviewing in the future.

A second industry representative highlighted the political transitions that have recently happened in many jurisdictions across the world. A renewed focus on economic growth and maintaining globalised financial markets should benefit tokenisation. The main tools to regulate digital asset activities are in place in the EU, such as MiCA, the Electronic Money Institution (EMI)

and the Markets in Financial Instruments Directive (MiFID) licences. The UK and US are also developing their own tools.

A third industry representative added that sufficient regulatory agility is also needed. When the Commission reviews the DLT pilot regime the aim should be to achieve a regulatory approach that can adapt to market changes and empower regulators to revise rules, in order to keep pace with technology and its opportunities.

An official emphasised that regulation must ensure legal clarity around tokenised assets in a digital environment. Authorities must assess the barriers faced by both incumbents and innovators in relation to tokenisation. There are many issues to be considered, including operational risks around permissionless systems, 24/7 governance, conflicts of interest and fractionalisation. These risks are manageable, but require clear principles to guide market development and ensure financial stability. The sandbox environment can also help to determine the conditions for tokenisation to scale up.

A regulator stated that MiCA offers a solid and harmonised regulatory foundation for digital assets across Europe. However, certain areas still require further development, particularly the regulation of staking and lending, which are currently outside the scope of MiCA. Additional clarity is also needed regarding liquidity requirements and the use of e-money tokens for payment purposes. Central bank digital currencies (CBDCs) also have an important role to play as a key building block of an efficient tokenisation ecosystem. Beyond financial regulation, civil and insolvency law issues must also be addressed in the broader context of the SIU.

While regulation must remain flexible and conducive to innovation, it is ultimately the role of the private sector to develop the market through compelling business models, the regulator stressed. Supervisors should refrain from prescribing specific technologies and focus on removing unnecessary barriers to innovation.

4.2 Settlement assets

An industry representative stated that on-chain cash is essential for the scaling of tokenisation markets to avoid having to off-ramp into fiat cash settlement. Three options exist for enabling on-chain cash settlements: CBDCs, tokenised deposits, and stablecoins.

The industry representative was supportive of a mixed-payments ecosystem providing access to these different solutions. Stablecoins, which already operate at scale, can play an important role complementing CBDCs and tokenised deposits. In 2023, stablecoins settled almost \$11 trillion in transactions, equivalent to Visa volumes and double those of PayPal.

The US has the world's largest economy and the most liquid capital market, but it has rejected CBDC and is decisively moving toward stablecoins. It is therefore likely that stablecoins will play an increasing role. Europe must keep an open mind, ensuring that MiCA regulated fiat-backed stablecoins can play a complementary role in the settlement of tokenised asset transactions. Some regulatory concerns that have been expressed regarding

the singleness of money can be addressed through robust regulation; it is expected that the US will impose similar requirements to the EU on this issue.

A second industry representative emphasised that stablecoins are currently the only settlement asset fully transferable on-chain, making them vital for near-term innovation. While central bank money remains the risk-free settlement asset, it is not yet available on-chain. Stablecoins fill that gap and should be able to circulate globally to unlock the benefits of tokenisation, with similar rules across jurisdictions. Global stablecoins that are MiCA-compliant should be able to circulate and be used in the EU, as envisaged by MiCA. EU-issued and regulated stablecoins must be similar to those issued and used in other jurisdictions.

An official agreed that determining the most suitable way to provide payment for the delivery of tokenised assets among the three available options of CBDCs, tokenised deposits or stablecoins is essential. The singleness of

money is an important principle for maintaining financial stability in wholesale markets.

An industry representative highlighted the need for wholesale CBDC to anchor interbank liquidity in the context of tokenisation, and urged the ECB to deliver tangible outcomes soon, noting that the push for stablecoins in the US may create fragmentation between the EU and US.

The Chair noted that the ECB recently took an important step in announcing the rollout of a wholesale CBDC, which could contribute to removing some obstacles to tokenisation business models. Europe will have a CBDC to rely on, contrary to the US. An important condition for the greater use of stablecoins is that the US stablecoin regulation is similar to MiCA, but that remains uncertain.