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ASSET TOKENIZATION 101:

Everything you should know in 10 slides

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Deutsche Bank Research Institute

ASSET TOKENIZATION 101: Everything you should know in 10 slides

The US stablecoin GENIUS ACT marked a major turning point for asset tokenization. Stablecoins – tokenized representations of real-world assets onto a blockchain – accounted for >91% of the tokenized asset market in 2024. Their growth has been exponential, with USD-backed stablecoins expected to reach>$2 trillion over the next few years.

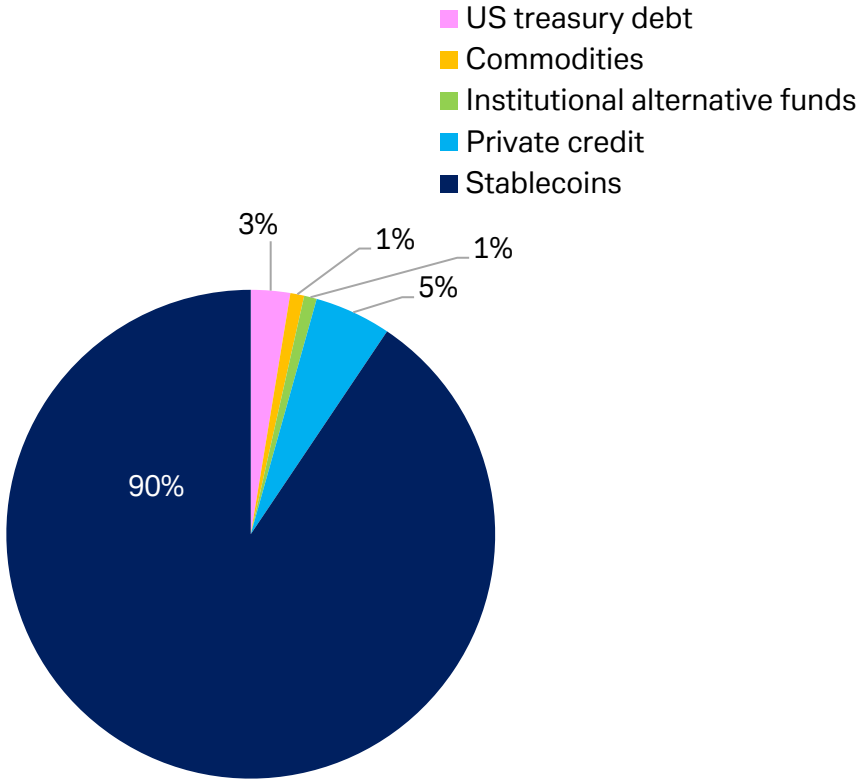
2025 has been a pivotal year for tokenization, and momentum continues to build as we move into 2026. Even excluding stablecoins, regulatory clarity is fuelling confidence among large institutions to tokenize a broader range of real-world assets (RWAs). Fixed income is emerging as the next major asset class to undergo tokenization. The total market size for tokenized assets has expanded from ~$4bn in Dec 2019 to ~$331bn (including stablecoins) in Nov 2025 – an 8,175% increase. Outside of stablecoins, tokenized US treasuries have led this shift, growing ~118% YTD in 2025.

Looking ahead into 2026 and beyond, we expect tokenization to continue accelerating as major jurisdictions (including the US and EU) roll out clearer, more supportive regulatory frameworks for digital assets and tokenization. In the US, a pro-crypto regulatory stance is further encouraging both retail and institutional adoption. Yesterday's announcement that the Trump Organization and a Saudi-backed company will jointly build a Maldives resort backed by tokenized investments is the latest example. Still, inconsistent regulation remains the main barrier — slowing institutional scaling, limiting interoperability, and preventing liquidity from forming across tokenized markets.

In this chartbook, we review (i) market size; (ii) adoption trends; (iii) the regulatory drivers of tokenization; and (iv) barriers that will determine the pace of growth.

For our recent work on stablecoins, see here.

Market share of tokenized assets



Sources: Deutsche Bank Research, RWA Database. Corporate bonds, stocks, non-US gov bonds, private equity, real estate, actively managed strategies all account for less than 0.80%. Figures taken on November 17.

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WHAT IS ASSET TOKENIZATION? A 101

Asset tokenization converts the rights to a real-world asset into digital tokens that can be bought, sold, or traded more easily.

- Assets can be tangible (e.g. real estate, art, commodities) or intangible (e.g. equities, bonds, intellectual property rights).
- Tokenization is enabled by distributed ledger technology (DLT), where ownership rights are represented as digital tokens on a decentralized network. The most widely-used form of DLT is the blockchain.

Two types of tokenized assets

- On-chain assets: The asset itself, its transaction history, and its ownership record exist fully on the blockchain. All transfers and updates occur directly on-chain.
- Off-chain assets: The underlying asset and its legal rights remain outside the blockchain, but ownership claims, and economic rights are represented digitally on-chain.

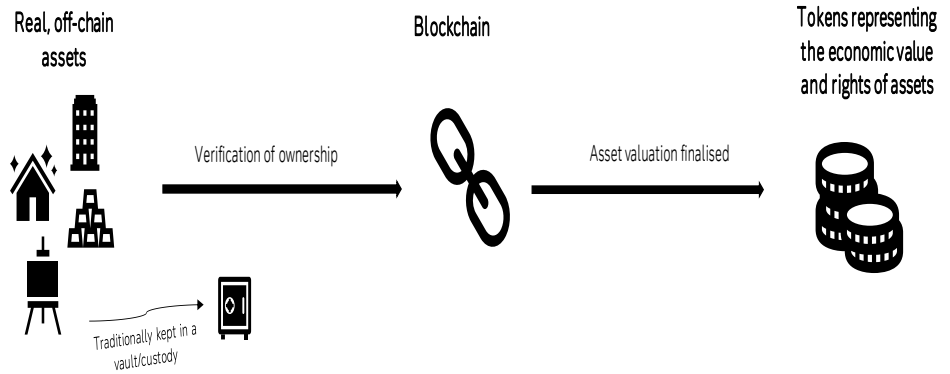
Role of smart contracts

- Automatically track ownership, distribute earnings, and enforce rules for transfers, voting, and corporate actions.
- Reduce the need for intermediaries and allow programmable, rules-based automation.

Benefits of tokenization

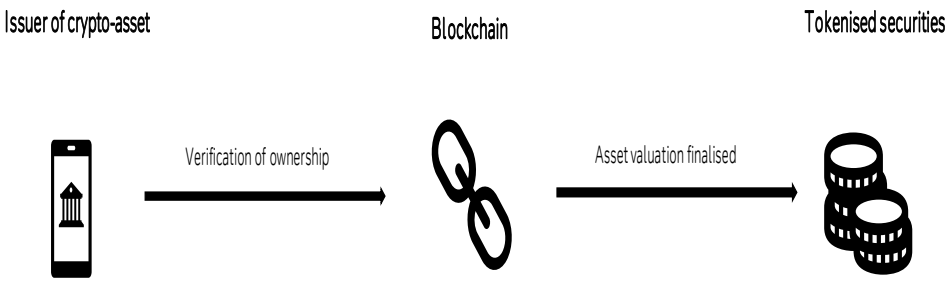
- 24/7 trading and programmable transferability, enabling faster rights and fractional ownership (investor access to smaller, more affordable units/"tokens")
- Improves settlement and operational efficiency, reducing reconciliation needs, errors, and transaction frictions.

Tokenization of physical assets that exist off-chain



Process:
1. Fractionalize underlying asset
2. List fractionalized asset on an exchange
3. Each party able to own small fractions
4. Supervision by a centralized agency
5. Execute corporate actions

Tokenization of digital assets that exist on-chain



Process:
1. Ecosystem assembled
2. Register underlying asset
3. Configure the token
4. Implement compliance rules
5. Process of storing, managing and distribution of tokens
6. Execute corporate actions

Sources: Deutsche Bank Research, World Economic Forum.

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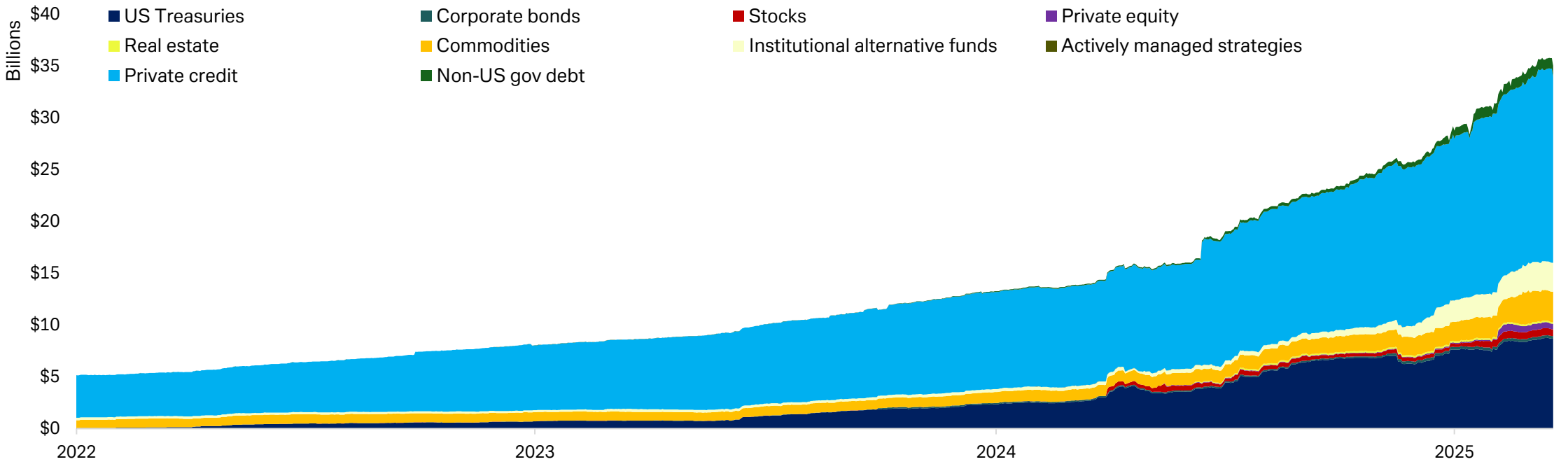
MARKET SIZE: Private credit and US Treasuries now dominate tokenized RWA issuance, reflecting strong institutional demand and regulatory clarity

- In 2025, the market size of tokenized real-world assets is ~$33bn. Including stablecoins, the total tokenized asset market is ~$331bn.
- New issuance volume of tokenized assets has expanded sharply, rising from $59.7mn in 2018 to $300bn in Oct 2025 – a ~502k% increase.
- Growth is likely to remain uneven across asset classes, with fixed income leading adoption due to its bonds' simple structures, standardized cash flows and suitability for issuance as digitally native tokens.

Market size of tokenized real-world assets (ex-stablecoins)



Sources: Deutsche Bank Research, RWA Database. Updated November 2025. To note, private credit's large market size accounts for companies using blockchain as a record keeping layer for private credit like Figure Technologies, who record all their loan level data onto the blockchain.

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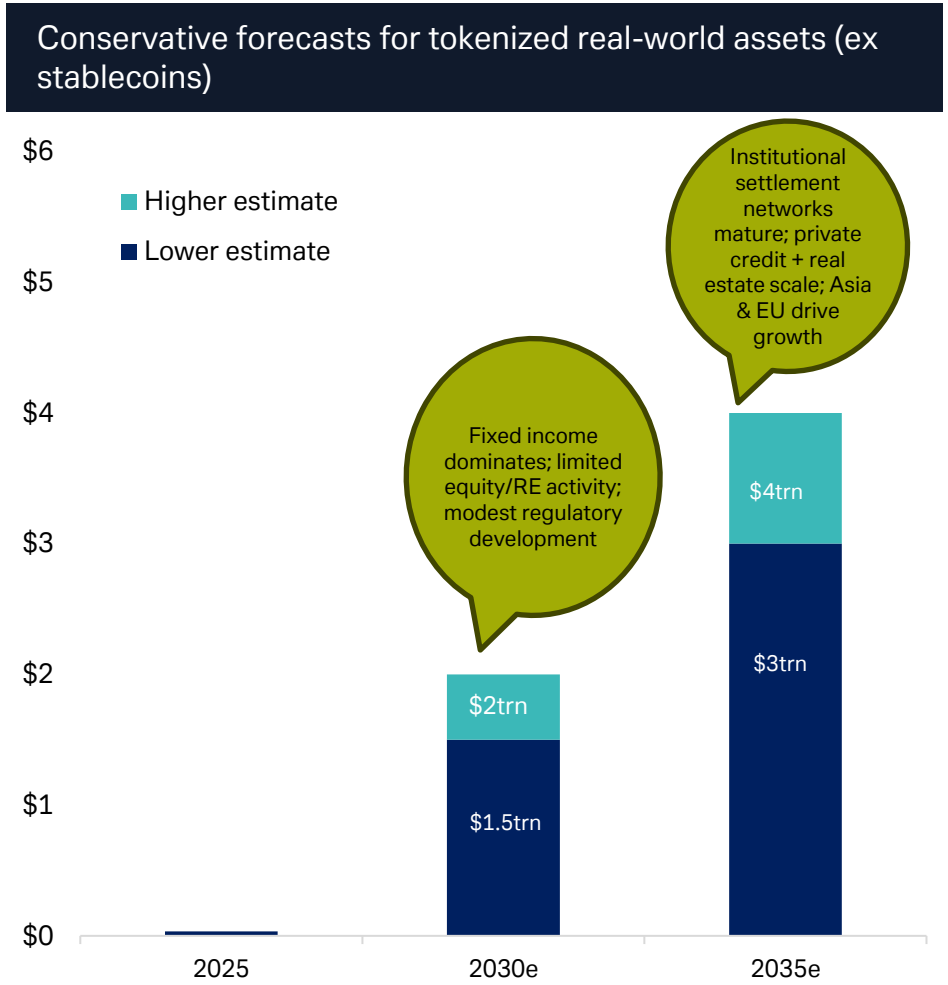
IMPACT: Tokenized capital markets could become the default infrastructure for issuance and trading by the 2030s

- Tokenization will not eliminate intermediaries (i.e.. custodians), but it will move traditional financial infrastructure onto digital rails, improving transparency, speed, and automation.
- We adopt a conservative stance and estimate the market for tokenized-real world assets (excluding stablecoins) could reach $1.5-2trn by 2030 and $3-4trn by 2035.

- Assumptions behind our estimates:

1. Regulation improves gradually, not rapidly. EU (MiCA + DLT Pilot) scales slowly. US remains fragmented (GENIUS Act, CLARITY Act). UK, Singapore, UAE, Switzerland continue pilots but not full adoption before 2030.
2. Tokenization remains concentrated. 80%+ of volumes remain in US Treasuries, money-market funds, credit. Equities, real estate stay small until late 2020s.
3. Limited secondary-market liquidity. Tokenized bonds and loans have low turnover. True market depth emerges only when interoperable settlement infrastructure matures (~2029–2032)
4. Banks adopt DLT slowly and unevenly. A handful of leading institutions run pilots, but broad-scale migration of infrastructure (custody, settlement) unlikely complete by 2030.
5. Stablecoins grow materially but are excluded from the RWA market forecast. For more details about stablecoins, see our latest chartbook (here).

- The US stands to benefit significantly from adopting tokenization to modernize capital markets, increase Treasury liquidity, attract foreign investment, and counter de-dollarization pressures. USD-denominated tokenized assets (e.g. equities, bonds, funds) could become primary trading instruments on global blockchains, reinforcing international demand for the USD.



Source: Deutsche Bank Research.

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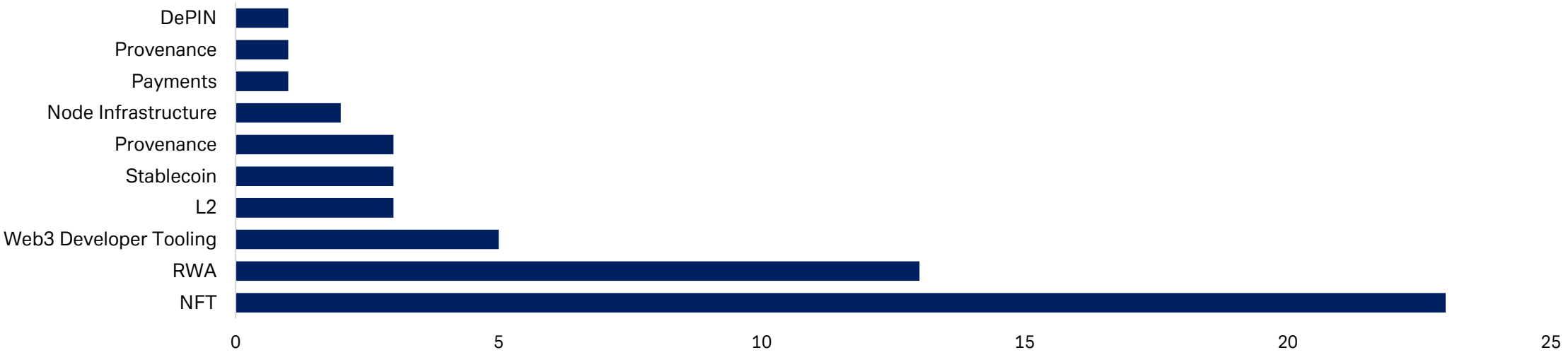
INSTITUTIONAL ADOPTION: Tokenization will unlock significant value trapped in illiquid assets

- Institutional adoption is expected to begin with low-risk, high liquidity assets (e.g., government bonds, money market funds) before gradually expanding into higher-yield, less liquid assets.
- Banks are accelerating tokenization efforts through the deployment of DLT solutions.
  - Example: R3's Corda, a bank-led consortium DLT platform for financial institutions.
  - Example: Linux Foundation's Hyperledger, with 170+ corporate participants including banks, tech firms, and exchanges.
- Notable institutional deployments include:
  - Franklin Templeton's FBOXX: The first US-registered mutual fund to use a public blockchain for recordkeeping and transactions.
  - BlackRock's BUIDL: A tokenized fund operating across Ethereum and six other public networks.

Number of non-crypto companies building on Ethereum and Ethereum Layer 2s, by product category



Source: Deutsche Bank Research, Galaxy.

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FIXED INCOME SPOTLIGHT: Bond tokenization has the strongest growth potential

- Bond tokenization is accelerating rapidly, supported by strong government engagement (e.g., UK's digital gilt pilot), and ease of the bonds largely maintaining their traditional legal status and structure while leveraging DLT for efficiency.
- Tokenized fixed income issuance (bonds, bills, commercial paper, covered bonds) rose by 230% from €848mn in 2023 to €3bn in 2024, according to AFME.

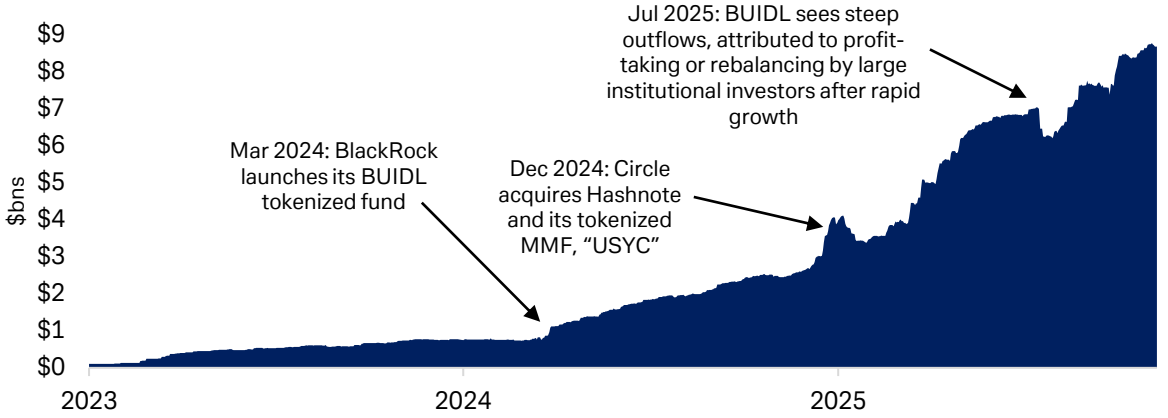
Benefits

- On-chain Treasuries enable near-real-time settlement, reduced transaction costs, and higher trading velocity.
- Lower underwriting fees by 0.22% of a bond's par value.
- Automation of up to 2,000 tasks in the bond issuance & lifecycle process.
- Narrower bid-ask spreads, reduced by 5.3% on average, with compounding efficiencies when retail participation is included.
- Shorter closing periods, reduced by >50%.

Notable digital bond issuances

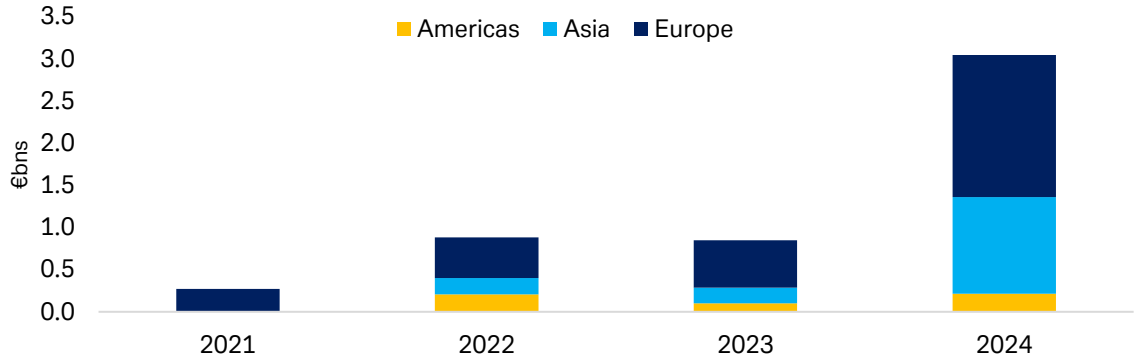
- Germany's KFW: Announced its first blockchain-based digital bond in May.
- EIB: Issued five digital bonds since 2021 using platforms such as HSBC's Orion and the Banque de France's DL3s.
- World Bank: Launched its first digital securities on a DLT in 2023 developed by Euroclear.

Tokenized US Treasury market cap



Source: Deutsche Bank Research, RWA Database. Updated in November 2025.

Fixed income issuance using DLT



Source: Deutsche Bank Research, AFME.

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SHORT-TERM ADOPTION: Tokenized funds & gold are leading in early market growth

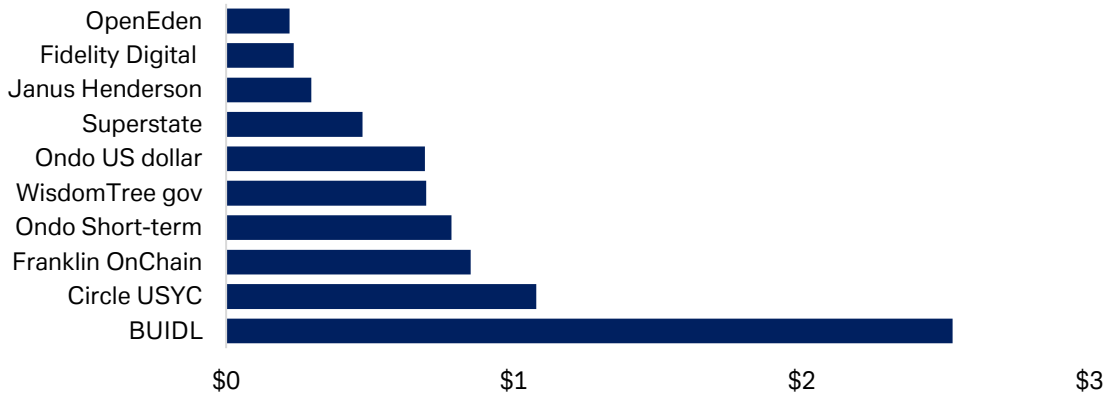
Tokenized funds

- Among the earliest tokenized products to scale, supporting deeper liquidity and more efficient secondary-market trading.
- Despite strong growth, they still represent only a small share of the overall money-market sector (~$2bn tokenized AUM in 2024 vs. ~$7trn in assets, AFME).
- Benefits: Automates many back-office processes; enables faster settlement; increases accessibility for a broader range of investors; often offers lower management fees (e.g. BUIDL fee: 0.20-0.50%).
- Risks: Inconsistent ownership records: some funds keep the "official" shareholder register off-chain (e.g., BUIDL), while others maintain it entirely on-chain (e.g., FBOX), creating reconciliation complexity.

Commodities

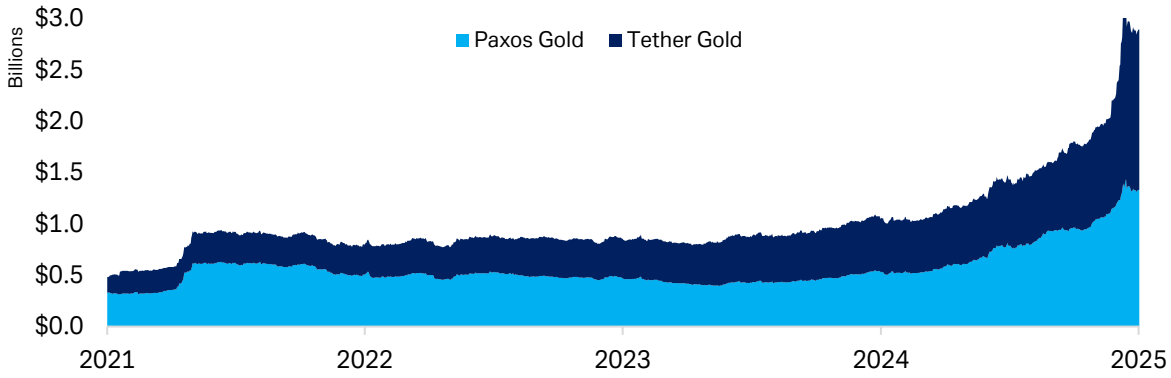
- Gold is leading the tokenization of precious metals, driven by investor familiarity and strong demand for digital wrappers of traditional assets.
- Benefits: Enables fractional ownership; lowers entry barriers for retail investors; offers 24/7 on-chain liquidity.
- Risks:
  - Some gold-backed tokens do not offer physical redemption.
  - Continuous on-chain trading can cause price dislocations when interacting with traditional markets.
- Examples: Paxos Gold, Tether Gold, WisdomTree, HSBC.

Market cap of select funds



Source: Deutsche Bank Research, RWA Database. Updated November 17.

Tokenized commodities market cap of Paxos Gold and Tether Gold

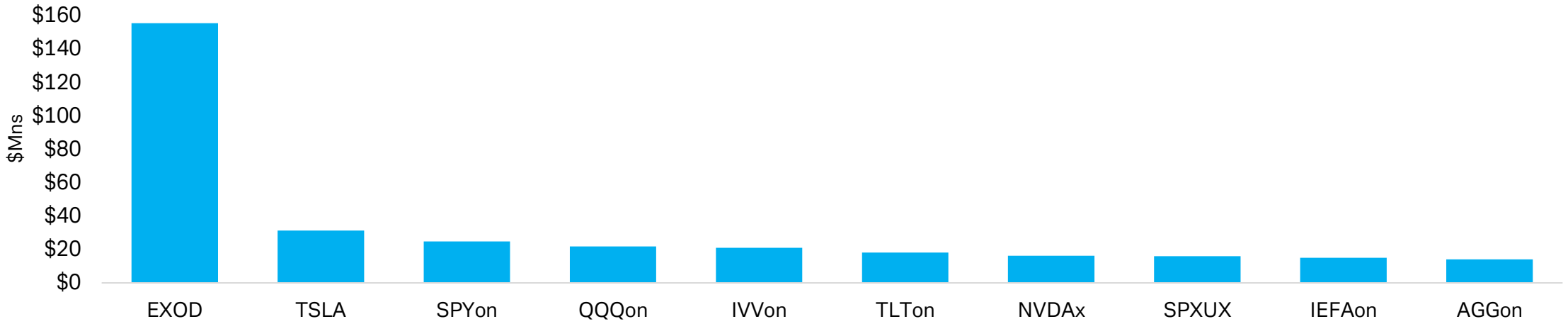


Source: Deutsche Bank Research, RWA Database. Updated November.

MEDIUM-TERM ADOPTION: Equity tokenization will advance gradually, with early traction in niche and emerging markets

- Market readiness remains limited: Public equities already trade efficiently in developed markets, reducing the immediate need for tokenization. However, there is a stronger opportunity in emerging markets, where infrastructure is less mature and cross-border barriers remain high.
- Developments: A growing set of tokenized equity products targeting EU investors emerged this year, including those from Gemini with Dinari and xStocks by Kraken and Backed Finance.
- Notable tokenized stocks: S&P 500 tokenized ETF, Tesla, MicroStrategy, Apple, Coinbase.
- Benefits:
  - Reduce barriers for foreign investors; automates post-trade processes; enable 24/7 trading of equity-like products; reduce information asymmetry (e.g., embedding listing or disclosure rules directly into the tokens).
- Risks: Investors are exposed to counterparty risk against the token issuer, particularly if the structure is synthetic. There is also inherent uncertainty in the legal recognition of tokenized asset creation and transfer under. Also face operational vulnerabilities including smart contract bugs and cyber attacks on blockchain.

Market capitalisation of the largest tokenized equity products



Sources: Deutsche Bank Research, RWA Database. Total value taken on November 17. Tokenized public stocks: Exodus Movement Inc., Tesla Xstock, SPDR S&P 500 ETFs, iShares Core S&P 500 ETF, Invesco QQQ, iShares 2-+ year treasury bond ETF, Wisdom Tree 500 Digital Fund, Nvidia xDyovk, iShares Core MSCI EAFE ETF, iShares Core USD Aggregate Bond ETF.

LONG-TERM ADOPTION: Tokenization of private credit and real estate is still in its early stages

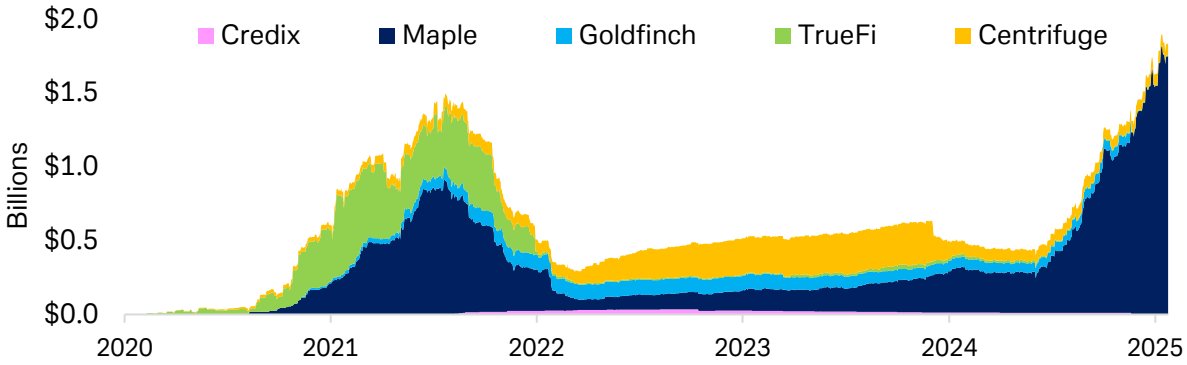
Private credit

- Activity today is largely focused on crypto-native loans and selective corporate bond issuances.
- Record-keeping and servicing layer show more adoption. Companies like Figure Technologies and Tradable use blockchains to track loan origination, ownership, payments schedule, and servicing rights.
- >$13bn in on-chain loans now exist across public networks such as Ethereum and Solana.
- Challenges and risks: Tokenization remains concentrated among a small number of issuers and still lacks a deep, liquid secondary market. Also faces fragmented regulation across jurisdictions and spillover risk given most loans are backed by crypto collateral such as Ethereum.

Real estate

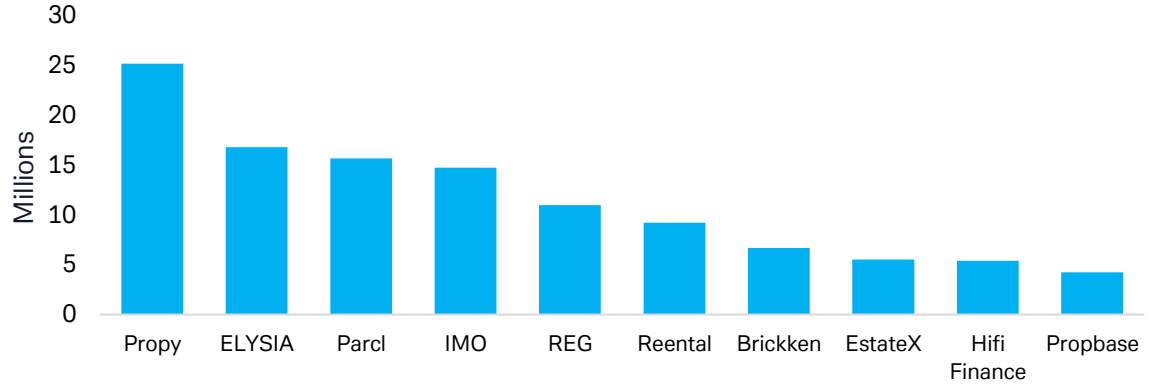
- Enables fractional ownership at accessible entry point (typically for $100-$1,000 per unit).
- Still niche (<$1bn globally in 2024) but could become a meaningful driver of adoption in emerging markets where property liquidity is low.
- Benefits: Expands liquidity for traditional illiquid assets; broaden investors access to property markets; streamline transfer, record-keeping, and settlement
- Challenges: Competes with established structures like REITs, which already offer diversification and liquidity. Regulatory requirements for property rights and local land registries still limit scalability. Valuation updates and maintenance obligations add operational complexity.

Market size of tokenized private credit (in $bn)



Sources: Deutsche Bank Research, RWA Database. Updated November. Looks at total active loans value. Excludes platforms that issues tokens using blockchain as a recordkeeping layer, i.e. Figure Technologies and Tradable.

Market cap of top tokenized real estate coins (in $bn)



Source: Deutsche Bank Research, Coingecko. Market cap figures from November 17.

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REGULATION ultimately remains the biggest barrier to adoption, followed by weak secondary-market liquidity

Main barriers to adoption

- Regulatory uncertainty: Fragmented or incomplete frameworks slow institutional adoption and complicate integration with traditional financial infrastructure.
- Limited integration with existing custodial, settlement, and record-keeping systems restricts institutions from scaling tokenized products.
- Secondary-market liquidity remains low. In bond markets, approximately $15bn of assets have been tokenized via DLT, but only 47% of initiatives exceed $1mn in turnover. This indicates that many tokenized assets are not actively traded, leading to challenges in price discovery, liquidity, and overall market efficiency.

Other barriers

- Potential difficulty reconciling tokenized systems with existing institutional books and records.
- Tokenized financial assets will be increasingly linked to the crypto sector (e.g. stablecoin reserves or collateral), creating the risk of transmitting crypto-related volatilities and shocks to conventional financial markets.
- Compliance limitations, e.g., inability to honour GDPR "right to erasure" on immutable ledgers.
- Cybersecurity risks, including smart-contract vulnerabilities.
- Operational risks i.e.. loss of private keys by institutions or users.

Country	Regulatory status	Description
	EU MICA	Comprehensive crypto-assets regulation. National pilots (e.g., France's DLT Pilot Regime) are testing tokenized capital-markets applications.
	No framework in place.	FCA has pledged to support fund tokenization as part of its 2025–2030 strategy; initial industry pilots underway.
	No unified framework in place	Momentum toward pro-digital regulations: GENIUS Act (stablecoins), Executive Orders on Bitcoin & digital-asset reserves, progress on the CLARITY Act, and rules allowing digital assets in 401(k)s.
	No framework for tokenization	Strict rules on cryptocurrencies remain; however, a limited "gray zone" exists for tokenized real-world assets on private or permissioned DLTs.
	Project Ensemble Sandbox (Aug 2024); new regulatory roadmap for digital assets (Feb 2025); progress ongoing.	New digital-asset regulatory roadmap (Feb 2025). HK maintains an open, inclusive stance on tokenization; potential mainland extension depending on pilot outcomes.
	Payment Services Act & Securities and Futures Act	Two-fold approach: 1) regulate digital payment tokens for retail use and 2) promote institutional asset tokenization through initiatives like Project Guardian.
	Financial Instruments and Exchange Act, overseen by the Financial Services Agency	Legally recognizes security tokens through FIEA since 2020. Subjects security tokens (STOs) to the same regulations as traditional securities, including registration and disclosure obligations.
	Abu Dhabi's ADGM regulatory framework treats security tokens as regulated financial instruments.	Tokenized securities classified as "digital securities" under ADGM. Actively supports blockchain-based projects that allow businesses to test tokenization ideas via its sandbox program.

Sources: Deutsche Bank Research, IOSCO.

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Marion Laboure is a Senior Economist at Deutsche Bank in London and Lecturer at Harvard University.

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Appendix 1

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