STRUCTURED FINANCE ASSOCIATION

SFA Research Corner

Tokenization: Securitization's Container Revolution

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Before the 1950s, global shipping was a mess—cargo traveled in mismatched crates, sacks, and barrels, unpacked and repacked at every stop. It was slow, error-prone, and costly.

The standardized shipping container fixed that, letting goods move seamlessly between ships, trains, and trucks without ever being reopened. Handling times plummeted, losses shrank, and global trade took off.

This "container revolution" has repeated across industries—software (Docker), manufacturing (pallets), media (MP3/MP4), and pharmaceuticals (blister packs). The pattern is the same: take something fragmented and inconsistent, standardize it into a self-contained, portable unit, and suddenly whole systems work together more efficiently.

Today's securitization process looks a lot like shipping before containers. Pooling loans, leases or receivables into tradable securities depends on massive volumes of accurate, timely data. Yet information is scattered across disconnected systems, processes are split between manual and digital, and each participant—originators, structures, trustees, rating agencies, investors, and others– keeps its own version, resulting in duplicates, manual reconciliation, costly delays, and ultimately higher operational risk.

Tokenization could be securitization's "container moment." Just as the shipping container unified cargo, trucks, and ports into one seamless global system, tokenization can unify securitization's cargo (data), trucks (value transfer), and ports (execution). State Street Global Advisors makes a similar comparison, describing tokens as the "railcars" of digital finance—digital containers that carry information efficiently across distributed ledgers, enabling mobility and programmability in financial markets.

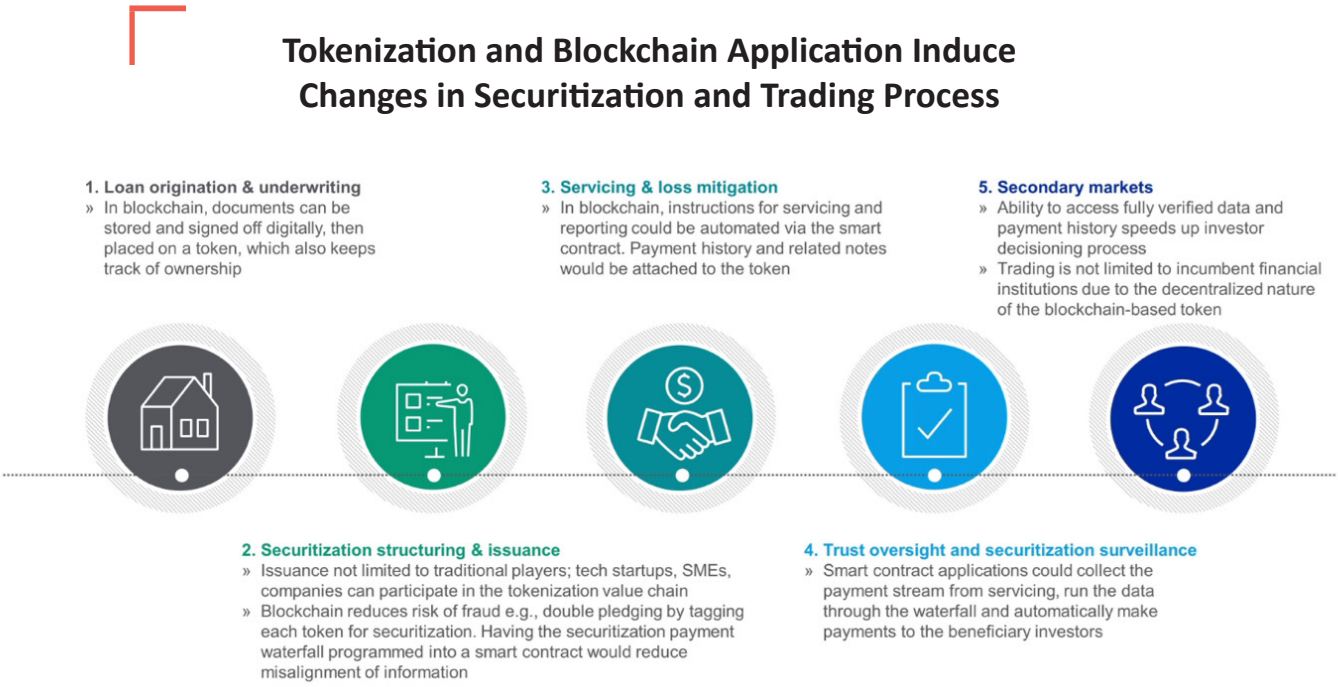
The Federal Reserve defines tokenization as "the process of linking a reference asset to crypto tokens via design features that link the token's price to the value of the token's reference asset"—ideally giving the token holder a legally enforceable ownership claim. In practice, most tokenizations combine five key components: (1) a blockchain, (2) a reference asset, (3) a mechanism to value the asset, (4) custody or storage arrangements, and (5) a redemption process for the token and/or the asset. These elements will determine how a tokenized securitized transaction connects blockchain-based infrastructure with the broader capital markets, influencing everything from investor access and secondary liquidity to reporting, compliance, and settlement speed.

The Bank for International Settlements calls tokenization "the next logical step in digital recordkeeping and asset transfer," with the potential to "dramatically enhance" the financial system by enabling intermediaries to serve end users in new ways and removing the traditional separation of messaging, reconciliation, and settlement. This, it notes, could "unlock new types of economic arrangement" previously blocked by system frictions.

When deployed on a shared blockchain, the tokenized "container" can synchronize data, payments, and governing rules in real time—reducing reconciliation work, strengthening data integrity, streamlining reporting, and lowering counterparty and settlement risk.

Moody's uses the lifecycle of a residential mortgage-backed securities (RMBS) transaction to highlight both the promise and the pitfalls of tokenization. Today, mortgage origination blends partial digitization with labor-intensive manual steps. Blockchain can replace these with an immutable, time-stamped loan-level database and can employ smart contracts to automate recurring and conditional functions—improving transparency, efficiency, and fraud prevention. In RMBS, this could cut duplicate due diligence, guard against ineligible assets, and enable real-time execution of payment distributions, credit bureau updates, loss-mitigation actions, and waterfall calculations (the step-by-step order of payments to different tranches of investors).

Yet, Moody's cautions, these benefits come with challenges: increased cybersecurity risks, the absence of common standards, missing complementary infrastructure, and the uncertainty inherent in any new process. Addressing these gaps will be essential for the securitization industry to make the leap to a fully digital, end-to-end model.



Sources: Moody's Investor Services, "Asset Tokenization has Potential to Deepen and Diversify Financial Markets," January 21, 2021

Tokenization's ability to unify the information, value, and execution layers enables innovations such as digital bonds—issued natively on a blockchain with fractional ownership, instant settlement, and 24/7 transferability—and smart contracts to automate processes. In the securitization context, this could mean everything from waterfall distributions to covenant checks. But Moody's notes in "Smart contracts, Key to Broader Adoption of Blockchain, Face Their Own Hurdles," without common standards, creators bear the most liability for failures, and coding errors, cyberattacks, flawed logic, bridge exploits, or reliance on external "oracles" can be costly.

Momentum for tokenization in securitization is building on both sides of the Atlantic. Europe has laid important groundwork:

- Markets in Crypto-Assets Regulation (MiCA) — Effective since late 2024, MiCA provides a harmonized framework for crypto-assets, including stablecoins and asset-referenced tokens, setting rules on issuance, transparency, and investor protections.
- EU DLT Pilot Regime (Regulation 2022/858) — Enables authorized market infrastructures to experiment with trading and settlement of tokenized financial instruments on blockchain, paving the way for innovation in securitization workflows.

In the U.S., recent legislation could accelerate adoption:

- GENIUS Act (Guiding and Establishing National Innovation for U.S. Stablecoins) — Signed into law in July 2025, it creates a federal framework for payment stablecoins, including reserve, disclosure, and governance standards. Qualifying stablecoins are removed from securities and commodities classification and placed under federal banking oversight, enabling their use in securitization cash flow settlement. Rajeev Bamra, Global Head of Digital Economy Strategy at Moody's Ratings, notes: "The GENIUS Act … establishes the first structured framework for fiat-backed stablecoins in the U.S. While this clarity is welcome and lays the groundwork for increased institutional adoption and cross-border transactions, the focus now shifts to implementation and execution."
- CLARITY Act — Passed by the House in mid-2025 and pending Senate approval, it refines the legal classification of digital assets to ensure payment stablecoins used in capital markets are not inadvertently treated as securities, reducing uncertainty for issuers and investors.

S&P Global projects a 10-year phased rollout from early pilots in liquid markets (2025–2028), to expansion into private credit and tokenized CLOs (2027–2033), and ultimately to AI-driven automation and custom portfolio execution (2031–2035). If successful, tokenization has the potential to transform today's fragmented, manual workflows into a unified, real-time infrastructure—compressing execution timelines from the multi-day cycle of legacy processes to just minutes, as demonstrated by Vanguard in its digital ABS pilot. Realizing this vision across the structured finance industry will require progress on multiple fronts: establishing common technical standards, ensuring legal clarity across jurisdictions, building robust governance and accountability structures, integrating with legacy systems, and adopting consistent market practices for issuance, trading, and lifecycle management.