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Content Reference: Tokenisation Revolution

Digital Finance – BSc Course – Standalone Lecture

Learning Objectives

After engaging with this reference sheet and the companion lecture, you will be able to:

- **Define** tokenisation and distinguish on-chain native assets from tokenised representations [Understand]
- **Classify** tokenised assets by underlying (Treasuries, credit, real estate, equity, commodities) [Apply]
- **Compute** the settlement-time and operational-cost saving of atomic DvP [Apply]
- **Evaluate** which tokenisation use cases are economically self-sustaining vs. subsidised [Evaluate]

1. Key Definitions

- **Tokenisation** — representing a right (to cash flow, ownership, use) as a transferable on-chain unit.
- **Native tokens** — exist only on-chain (BTC, ETH, most governance tokens).
- **Tokenised assets** — on-chain wrappers for off-chain claims (US Treasuries, fund shares, deeds).
- **Delivery-versus-payment (DvP)** — the two legs of a trade settle in the same atomic transaction, eliminating settlement risk.
- **Atomic settlement** — either all legs execute or none do; no Herstatt-style half-completed trades.
- **Fractional ownership** — a unit that legally represents less than one physical asset (e.g. 1/10,000 of a Picasso).
- **Permissioned token** — transferable only between whitelisted wallets; used for institutional money-market funds.
- **Whitelabel-able chain** — a chain (Canton, Fnality, Partior) that banks can operate bilaterally at arm's length from public crypto.

2. Core Concept: T+2 to T+0

Why atomic settlement is a big deal

Conventional equity settlement is T+2 in most markets (T+1 in the US from 28 May 2024). Those one-to-two days carry counterparty risk, collateralised by the clearing corporation and funded by ∼$50B of member margin globally.

Atomic tokenised DvP collapses this to T+0. The savings show up in three places:

- **Margin release.** Brokers free up the variation margin they post to the clearinghouse.
- **Float recovery.** Cash sitting in settlement accounts earns interest elsewhere.
- **Fail-rate collapse.** Settlement fails (1–2% of US equities) become a zero-sum property of the transaction itself.

McKinsey estimates the full tokenisation of global tradable assets could free $15–25 billion in working capital annually (2024 estimate).

3. Key Figures & Data

- **$15–25 billion** in tokenised real-world assets on-chain at end-Q1 2026 (rwa.xyz).

- **BlackRock BUIDL** crossed $1 billion AUM in 40 days after its March 2024 launch; as of April 2026 it is among the largest tokenised money-market funds.
- **Project Helvetia III** (Swiss National Bank, 2024) settled six wholesale CBDC transactions against tokenised bonds issued by SIX Digital Exchange.
- **Project Guardian** (Monetary Authority of Singapore) has run 17+ tokenisation pilots since 2022 across funds, FX and bonds.
- **Ondo Finance OUSG** (tokenised short-duration US Treasuries) held ~$600M AUM in Q1 2026.
- **Savills** estimates global real estate at $380 trillion, of which less than 0.01% is currently tokenised – the canonical "TAM is huge, penetration is tiny" story.

4. Worked Example

Float savings from T+2 to T+0

Scenario. A prime broker clears $2B/day of equities. Under T+2, two days of traded value sit in unsettled obligations. The broker posts 1% of that value as variation margin with the CCP, costing the risk-free rate (5%).

Daily volume	$2B
Unsettled obligation (T+2)	$4B
Variation margin (1%)	$40M
Annual carry cost at 5%	**$2M**

Moving to T+0 atomic DvP eliminates the margin posting entirely. Across the industry, these savings are real but unevenly distributed: CCPs lose fee revenue, brokers gain margin back, and the systemic-risk reduction is a public good.

5. Self-Check Questions

1. What is the single biggest reason that tokenisation of public equities has been slower than tokenisation of money-market funds?
2. Explain why fractional real-estate tokens have largely failed commercially despite a $380T TAM.
3. A bond desk saves $800K/year in settlement-fail penalties by moving to T+0. At a 7% cost of capital, what is the present value of the saving over 10 years? (Use PV of annuity.)

[Answers hidden in student version.]

6. Further Reading

- BIS (2023). "Tokenisation: A Brave New World for Payments and Settlements." BIS Working Paper No. 1102.
- McKinsey (2024). "From Ripples to Waves: The Transformational Power of Tokenizing Assets."
- rwa.xyz — canonical live data for tokenised asset classes.
- Swiss National Bank (2024). *Project Helvetia III: Settling Tokenised Assets in Wholesale CBDC.*
- Monetary Authority of Singapore. *Project Guardian* reports (2022–2025).
