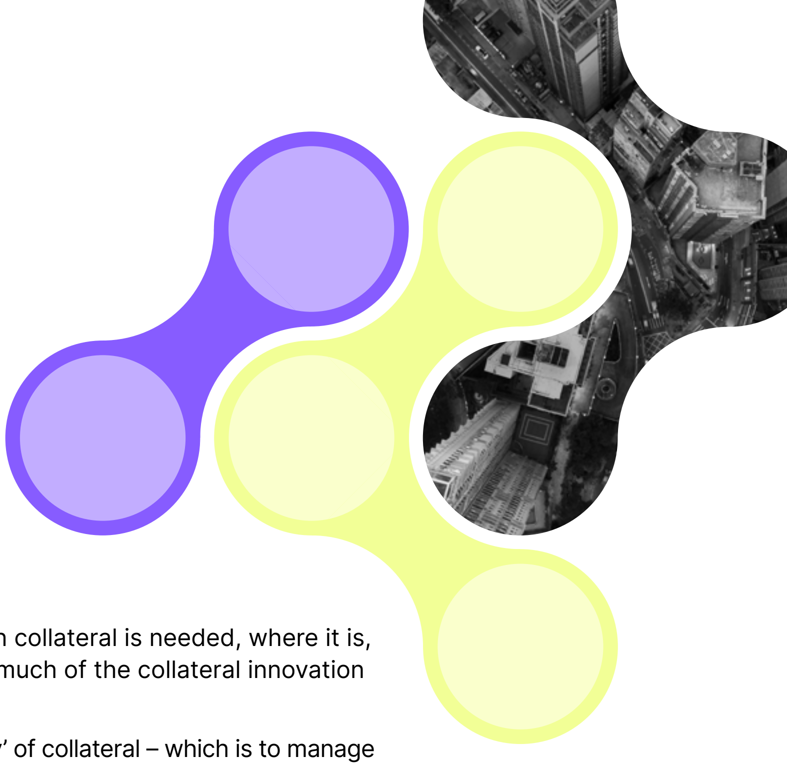

# History repeats itself? Maybe it doesn’t have to.

## Leveraging tokenized real world assets for global collateral opens the doors to more asset mobility and improved market stability

Collateral discussions often focus on practicalities – how much collateral is needed, where it is, and how it can be more accessible. These questions underlie much of the collateral innovation currently underway to deepen liquidity and enable mobility.

However, in focusing on ‘how’, let’s not forget the underlying ‘why’ of collateral – which is to manage counterparty risk. Collateral’s primary objective is to secure transactions. In the event of a default, the party holding the collateral has the legal right to those assets to offset the failed transaction.

On a day-to-day basis, the role of collateral in capital markets and financial stability can be easy to overlook- but it is critical to the function of global markets.  Significant market events over the past two decades have shown what can happen when collateral cannot be readily accessed, utilized, or claimed. If those same scenarios happened today, the use of tokenization and the Canton Network’s blockchain technology might yield very different outcomes.

### The role of collateral in capital markets and financial stability

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**Capital markets facilitate value transfer, liquidity provision and risk management across global financial systems.**

**Collateral is fundamental to securing transactions in repo markets, derivatives, securities lending, and margin management.**

**Market dislocations often arise due to inefficiencies in collateral movement. Liquidity shortages and operational bottlenecks exacerbate crises.**

The evolution of tokenized real-world assets (RWA) and blockchain-based settlement offers improved global collateral mobility and enables more resilient financial markets:

- With the ability to lock an asset to a transaction, the surety of atomic settlement, and perfected security interest, counterparties can be confident that collateral will be available even during challenged market conditions.
- The ability to tokenize RWAs increases the accessibility of more high quality assets, including previously immobile assets like gold.
- More collateral deepens liquidity pools and creates more trading capacity, particularly in volatile markets. Additionally, greater asset utilization and liquidity increases capital efficiency.

1. Note - this article specifically focuses on the role of collateral in various market crises and is not intended to provide a comprehensive view of all contributing factors or all outcomes.

# When financial market infrastructure fails

To understand how tokenization and blockchain could mitigate market challenges, let's look at seven events from the last two decades. Each demonstrates how the inability to efficiently move assets, access liquidity or meet obligations in real time can initiate or magnify a crisis.

By studying historical market challenges, we can identify ways to keep history from repeating itself.

## When access to critical liquidity and financing becomes unavailable

Liquidity crises arise when market participants cannot mobilize collateral in time to secure funding or meet obligations. In 2008, Lehman Brothers faced overnight liquidity shortfalls as counterparties withdrew financing, leaving Lehman unable to access global liquidity markets. The ripple effect this caused across financial markets was the catalyst for the global financial crisis, fueled by a lack of confidence in other firms' access to liquidity.

**Tokenized assets** would have allowed real-time pledging of collateral across borders, without being restricted by operating hours, market cut-offs, etc.

**Smart contracts** could have facilitated automated liquidity provisioning, reducing systemic contagion. Secured parties would have known their positions, where their assets/collateral were, and been able to take control as the secured party. See note about perfected securities interest, below

## When unexpected margin calls cannot be met due to operational bottlenecks

Market participants must immediately meet margin calls. However, operational limitations often prevent them from using available assets. In 2012, Knight Capital suffered a trading error that resulted in an unanticipated margin call. Despite having thousands of securities that may have been eligible to meet the call, manual processing delays meant that they were unusable. The securities would have needed to be delivered to the custodian, set up in the custodian's systems, and priced and valued as collateral – all within a few hours in the middle of the night.

**Digital or tokenized assets** could have been instantly registered, priced and transferred to meet the margin call.

**Smart contract** automation would have enabled seamless same-day settlement, making collateral immediately eligible for allocation.

## When client assets lack proper safeguards against misuse

The integrity of financial markets depends on clear segregation and protection of client assets from firm proprietary trading activities. MF Global engaged in multiple forms of improper client asset use, including investing customers' initial margin in high-yielding bonds and using securities received in securities lending transactions (GMSLAs) for proprietary trading, despite contractual prohibitions on rehypothecation. It also used client cash from securities lending accounts to provide intercompany loans to its broker-dealer and UK subsidiary without client consent. These actions contributed to MF Global's 2011 liquidity crisis and regulatory fallout.

**Smart contracts** could have enforced rehypothecation restrictions and segregation rules, preventing improper asset transfers and ensuring only the permitted uses of client assets

**Tokenized IM** collateral could have embedded eligibility criteria, preventing the purchase of securities that exceeded defined risk parameters

**On-chain regulatory oversight** could have automatically flagged any unauthorized transfers, preventing client asset misuse

## When physical settlement of assets disrupts market functioning

Markets that rely on physical asset delivery (such as commodities) are vulnerable to logistical bottlenecks and external shocks. At the outset of the COVID-19 pandemic in 2020, gold markets faced multiple disruptions. Flight restrictions prevented physical delivery, while closed refineries made it impossible to recast gold bars, contributing to the Comex-London price premium. Vault-to-vault transfer challenges restricted collateral mobility, as staffing shortages prevented institutions from moving gold between major vaults.

**Tokenized gold** can be transferred without requiring physical movement, as demonstrated by Digital Asset's Standardized Gold Unit (SGU) and Location Claim Token framework which was piloted in 2024 with the World Gold Council, Brinks and StoneX

**Smart contract** automation can assure that settlement only occurs when contract terms are met, which includes confirming the precise specifications of the token (vault, weight and purity).

## When intraday liquidity shortages amplify market stress

During March 2020, the U.S. Treasury Market experienced a shock from COVID-19. Intraday funding shortages forced investors to sell assets, and the liquidity crunch nearly froze the world's largest financial market. Investors rushed into cash, creating an unprecedented selloff in U.S. Treasuries (USTs). Even large banks and asset managers faced intraday collateral bottlenecks, intensifying the market turmoil. The Federal Reserve had to intervene aggressively to restore market function.

**Tokenized Treasuries** could have been instantly mobilized as collateral across global liquidity pools, preventing disorderly selling.*

**Smart contracts** would have enabled atomic settlement of margin obligations once conditions were met, facilitating an orderly unwind rather than a liquidity crunch.

**Decentralized repo markets on distributed ledger (DLT)** could have enabled real-time borrowing, reducing the need for central bank intervention.

## When fragmented risk visibility and delayed collateral movements exacerbate market shocks

Archegos Capital had excessive leverage hidden across multiple counterparties. When margin calls came due, this led to a disorderly unwind. Since Archegos built concentrated positions via total returns swaps across multiple prime brokers, no single firm had visibility into the total exposure.

**Tokenized collateral** would have provided real-time tracking across counterparties, offering a unified view of total exposures and reducing systemic blind spots.

**Smart contracts** could have automated margin adjustments, dynamically recalculating and posting collateral in real time and preventing excessive leverage buildup.

## When market volatility leads to higher margin requirements

Rising market volatility leads to higher margin requirements, forcing institutions to post additional collateral or liquidate assets, which can amplify market stress. In September 2022, rising interest rates forced UK pension funds to meet unprecedented margin calls in cash. Selling UK gilts to raise cash further depressed prices, worsening the crisis.

**Tokenized gilts** could have been immediately pledged as collateral, preventing forced sales.

**Smart contracts** could have enabled real-time collateral mobility with atomic settlement, stabilizing liquidity and potentially averting the crisis altogether.

# So what have we learned?

Although multiple factors cause market disruptions, when uncertainty over collateral allocation and control exists, aspects of a crisis can be exacerbated. Smart contracts and blockchain technology offer new ways to prevent snowballs from becoming avalanches. With the greater transparency, certainty, and safeguards enabled by this technology, it's clear that the outcome of each of these scenarios would be substantively different, and almost certainly less severe.

Since, thankfully, market crises are rare, it's important to understand the tremendous value that tokenizing RWAs - whether Gilts, USTs or gold - can deliver within normal market operations. Creating broader, deeper collateral pools of high quality assets enable more transactions to be collateralized. That, along with 24/7 access to collateral across tradfi and crypto markets, improves risk management and strengthens resilience across ever-expanding markets.

# Note about perfected securities interest

For a deeper discussion of perfected security interest, including why it's important how tokenized securities enable it, read these Canton Global Collateral Network pilot reports:

Canton Global Collateral Network:

- US Treasuries Collateral Network Pilot - Legal opinion from Jenny Cieplak, Partner, and Yvette Valdez, Partner - Latham & Watkins LLP
- Multi-Asset Collateral Network Pilot - Legal opinion from Paul Landless, Partner and Co-Head of Fintech, and Boika Deleva, Global Financial Markets Counsel - Clifford Chance

# Get started today and find out more

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