DTCC | DIGITAL ASSETS

Great Collateral Experiment Q&A

Product, Operations and Risk Management

DIGITAL ASSET CONVERSION AND TRANSFER AGENTS

How do you make an asset available on the Appchain and what happens to the original asset?

- For traditional assets, the CSD or custodian acts as the issuing agent of the digital token. The underlying security remains in a control account, while the token represents the beneficial owner's entitlement. This model aligns with established practices under New York custody law, though further legal analysis is required for other jurisdictions.
- Bitcoin (or any other asset on a third-party digital asset ledger) is wrapped upon entry into the Collateral AppChain. In this example, the original Bitcoin is locked on the Bitcoin network, and a wrapped version is minted on the AppChain using the same Compliance-Aware Token framework employed by DTCC for asset tokenization.

RISKS AND COMPARISONS

Rehypothecation/Reuse of collateral

- Rehypothecation is fully within scope for the AppChain, as it remains a critical component of the collateral management ecosystem today and will continue to be so in the future. Other elements, such as the inclusion of payables and receivables, may be considered for future integration.
- Rehypothecation of pledged assets is supported on the Collateral AppChain, provided it is authorized within the collateral agreement.

Are there any new risks associated with this liquidity management model?

- The 24/7 nature of blockchain technology enables continuous asset movement, unconstrained by traditional market hours or closures. However, in a live production environment, future regulatory measures, particularly in response to market disruptions or systemic events, may impose temporary restrictions on such activity.
- The risks associated with transitioning to digital collateral models vary by stakeholder, i.e., CSDs, custodians, prime brokers, buy-side firms, or CCPs. A key industry risk lies in the potential mismatch between the speed of digital collateral movement and the capabilities of traditional risk systems, which could lead to liquidity shortfalls. A gradual transition is essential to allow firms time to adapt their risk frameworks.
- Collateral risk assessments regarding the underlying tokens are defined by the trading parties within their collateral schedules, which are part of the principal trading agreement. These assessments may consider factors such as asset type, issuer, maturity, and concentration limits.

MARGIN CALL AND COLLATERAL MANAGEMENT

- Local banks with collateral arrangements enjoy the same benefits as other participants, including enhanced liquidity, asset optimization, and operational efficiency. For example, a bank may tokenize its deposits and agree with counterparties to accept those tokens as eligible collateral.

Are the excess/deficit the agreed margin call amount? If not agreed or disputed, how can the asset be reallocated, or if a client returns something not eligible for the other client?

- In the New York scenario of The Great Collateral Experiment, cash from the intraday repo was used to provide a liquidity buffer for MarginCore Bank. The bank's Treasurer sought to maintain immediate access to liquidity to meet potential cash demands during a volatile credit environment. As with any repo transaction, the cash must be returned at maturity; failure to do so allows the collateral receiver to claim and liquidate the pledged collateral.
- In the event of a default by the collateral provider, the pledged tokens are transferred from the collateral agreement smart contract to the collateral receiver's digital wallet. Once received by the collateral receiver, the tokens can be used to meet other obligations, transferred to another network, or burned in exchange for the underlying real-world asset (RWA) to be moved into the receiver's DTCC account.
- Eligibility of collateral is determined solely by the counterparties to the collateral agreement. The Collateral AppChain does not participate in or influence this determination.
- The Collateral AppChain receives the Triparty Required Value (RQV), representing the agreed collateral obligation. Based on the RQV, assets are allocated or recalled. An optimization algorithm can be applied to ensure efficient allocation across obligations.

With the allocation of collateral from multiple sources, doesn't this require the recipient to have accounts with all the sources if the collateral must be liquidated?

- As the issuing agent of the token, the CSD can embed controls that restrict token ownership to accounts held by either direct or indirect participants of the CSD. For example, Bank ABC, a direct participant, may trade with Client XYZ, who is an indirect participant via its custodian, Alpha Bank (a direct participant). If Bank ABC defaults while Client XYZ holds the token, XYZ becomes the instructing party for the underlying asset. The CSD can then burn the token and transfer the underlying asset to XYZ's custody account. However, if Client XYZ does not have a recognized relationship with the CSD, the token would not be eligible as collateral for the trade.
- The Collateral AppChain receives the Triparty Required Value (RQV), representing the agreed collateral obligation. Based on the RQV, assets are allocated or recalled. An optimization algorithm can be applied to ensure efficient allocation across obligations.

Who executes the liquidations or sets the margin call thresholds? Who decides the liquidation prices and how are they fed to the liquidation engine?

- Margin call thresholds are defined within each individual collateral agreement, as mutually agreed by the counterparties. The smart contract on the Collateral AppChain references these terms to calculate net excess or deficit positions. In the event of a default, the protocol allows the non-defaulting party to assume ownership of the pledged assets, with the discretion to liquidate them as needed.

How is the collateral allocated to JSCC for control for rehypothecation?

- CCPs typically do not reuse non-cash collateral. However, in bilateral arrangements, parties may choose to rehypothecate received tokens, which then become part of their Net Asset Pool. This is only permitted if the collateral provider explicitly authorizes rehypothecation, as it introduces the risk of asset loss in downstream transactions in the event of a default. The ability to trace token positions across ledgers offers additional assurance, as the asset can be repurchased or recovered if necessary.

IMPACT ON TRADING AND PRICING

With real-time collateral movement using DLT, especially across markets and time zones, do you think this will reduce arbitrage opportunities? Today, some traders make profits because collateral is slow to move or margin calls are delayed.

- While intra-bank trading opportunities may slightly decline, this model primarily reduces friction in asset mobility. Firms will still need to acquire or borrow assets to build inventory. A frictionless settlement model enables 24/7 lending, supporting increased cross-border activity.

How is pricing taken care of during non-US hours? So, what is the stock price for Apple or a US corporate bond?

- Pricing is available during the trading hours of each respective asset's market.

Legal and Regulatory

How would real-time agreement and legal signing work if digital currency is not currently eligible in existing contracts?

- The current process of negotiating collateral schedules is highly manual and time-consuming when done on paper. By digitizing this process through smart contracts, e.g., used as addenda to traditional agreements, negotiations become immediate and operationally efficient. This also enables risk managers to gain real-time visibility into open positions, accelerating decisions around expanding collateral eligibility requirements.

Is the completion of stable coin regulation the most important task for the US?

- Unlocking the full value of this ecosystem requires overcoming significant regulatory hurdles. Securing regulatory approval across all relevant jurisdictions is essential to enable the use of tokens as collateral within a standardized framework. To support repo and cash collateral use cases, a form of regulated digital money will be necessary. In the near term, however, digital money market funds (MMFs) can serve as a practical and compliant source of collateral.

What is the legal construct for moving assets across entities, jurisdictions, and chains?

- We anticipate publishing a legal analysis of the cross-jurisdictional challenges at a later date. In the interim, please refer to the whitepaper DTCC published in May 2024 with Clearstream, Deutche Borse Group and Euroclear in collaboration with BCG, entitled Building the Digital Asset Securities Ecosystem, Digital Asset Securities Control Principles: A Framework for Adoption.

Logistical

Is the session being recorded for future review by participants?

- Yes. You can watch a replay of the session here.

Will the presentation deck be available to participants?

- While we will not be sharing the presentation deck directly, we will be presenting deep dives on each use case with Dan Doney, Chief Technology Officer, DTCC Digital Assets and Joe Spiro, Product Management Director, DTCC Digital Assets. Watch this space for updates.

Is there a white paper or technical summary available on today's process?

- We will be doing deep dives on each of the use cases, watch our social media feed and web pages.

Disclaimer: The scenarios described in this publication are part of a simulated experiment and do not reflect live production environments or actual financial transactions. All institutions referenced in this publication, including MarginCore Bank, are fictional and are used solely for illustrative purposes. Statements regarding future plans or capabilities are forward-looking and subject to change based on regulatory, technical, and operational considerations.