Accelerating the velocity of collateral

The potential for tokenisation in cleared derivatives markets

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ABOUT FIA

FIA is the leading trade organisation advocating for the cleared derivatives markets globally, with offices in Amsterdam, Brussels, London, Singapore and Washington, DC. FIA's membership encompasses the ecosystem of futures, options and cleared derivatives markets, including participants providing clearing and execution services as well as trading venues, clearinghouses, trading firms, commodity firms, buy-side firms, technology firms, law firms and other professional service providers.

FIA's mission is to support open, transparent and competitive markets, protect and enhance the integrity of the financial system and promote high standards of professional conduct.

Our work includes engaging with global regulators, driving industry-led best practices, promoting efficiency and innovation and protecting the integrity of derivatives markets.

Introduction

FIA believes the cleared derivatives industry is now at an inflection point in the adoption of tokenisation. Years of work on this technology are beginning to bear fruit, and many leading institutions see meaningful potential to use this technology to upgrade the clearing and settlement infrastructure for financial markets.

One of the best use cases for tokenisation is the modernisation of the post-trade movement of collateral that backstops trading activity. The trading of derivatives drives the movement of collateral worth billions of dollars every business day. Tokenisation has the potential to make this process much faster and more efficient. In addition, tokenisation could help remove some of the risk associated with 24/7 trading by making it possible to move collateral when banking systems are closed.

This paper is intended to serve as an introduction to the subject. It describes the potential benefits of tokenisation in the movement of collateral and some of the challenges to its adoption. The paper also makes pragmatic recommendations on ways to advance this developing technology in post-trade processing for cleared derivatives.

Summary

The daily collection of margin is central to ensuring the safety and soundness of the global cleared derivatives markets. Margin serves as a first line of defense against market losses and customer defaults by serving as a reserve liquidity resource if payments are not made. Participants in the global cleared derivatives markets move cash and securities worth billions of dollars every business day to backstop their trading activity and prevent potential defaults.

Tokenisation holds the potential to radically transform this process. Cash and securities can be represented as digital tokens on a blockchain and transactions involving those assets can be conducted and recorded on a blockchain.

This technological advance can benefit the industry in at least two ways. First, it can reduce operational friction in the movement of collateral to meet margin requirements. Settlement times have the potential to drop from days to minutes, unlocking liquidity and the reducing risk and cost associated with traditional settlement processes.

We believe that the adoption of tokenisation in the cleared derivatives markets should start with non-cash assets that are already permitted by regulators for use as collateral.

Second, tokenisation can reduce the risk of extending trading hours. When banks are closed on weekends and holidays, participants in the derivatives markets cannot use the banking system to move cash or settle securities to derisk the system. This has prevented the clearing and settlement process from keeping up with demands to extend trading hours. Adopting this innovation in the cleared derivatives markets would allow market participants to move collateral in tandem with trading and settlement whenever markets are open.

Regulatory considerations will be critical to the adoption of this innovation. Like any new technology, tokenisation will introduce new workflows and disrupt existing workflows, and regulators around the world are grappling with the implications.

For this reason, we believe that the adoption of tokenisation in the cleared derivatives markets should start with non-cash assets that are already permitted by regulators for use as collateral. For example, if certain categories of money market funds have been deemed by a regulatory authority as eligible collateral, the tokenised versions of these funds also should be eligible. In other words, the technology is different, but the character of the asset remains the same.

On the other hand, the majority of the collateral posted for margin requirements is in the form of cash. In fact, at all major clearinghouses cash is the only asset acceptable for variation margin requirements. The full benefits of tokenisation, therefore, will not be achieved until digital forms of money such as stablecoins, tokenised commercial bank deposits and central bank digital currencies can be used as an alternative to cash.

It may take some time, however, for a clear path to adoption to emerge for the use of digital money as collateral in the cleared derivatives industry. Although the use of stablecoins is growing rapidly in many parts of the global economy, the regulatory and legal status of stablecoins is a work in progress in several major jurisdictions. Tokenised commercial bank deposits, which are essentially the economic equivalent of existing bank deposits but recorded on a blockchain, hold promise as cash collateral as well as many other forms of payment, as set out in reports issued by Oliver Wyman and JP Morgan in 2023 and Citigroup in 2024. At this point in time, however, only a few banks have begun to deploy this innovation, as noted by a report issued by the European Banking Authority in December 2024. CBDCs also are at an early stage of development. According to the Atlantic Council, a nonpartisan US organisation, more than a dozen G20 countries are in the pilot stage of exploring a CBDC, but only three countries have actually launched one.

This is why we believe it makes sense for the cleared derivatives industry to start with the forms of collateral that are already accepted by clearinghouses and consider the steps necessary to apply tokenisation to these forms of collateral.

What is tokenisation?

For the purpose of this white paper, tokenisation is defined as the process for generating and recording a digital representation of an asset as a token on a distributed ledger and using this technology to record the asset's attributes, transaction history and ownership. That asset can be a "real world asset," such as a conventional government bond, or it can be a "native" digital asset that exists only on that blockchain. In some instances, a token itself can be considered a separate, distinct asset.

A distributed ledger is a common record of information that is shared across a network of independent computers. Think of it as a single database maintained across many integrated computers. If a record is updated on one of those computers, then the records across all the computers that are part of the network also are updated.

There are several forms of distributed ledger technology in use today, but the form that is most important for this white paper is commonly known as blockchain. Definitions of this technology vary, but for the purpose of this paper we rely on

the description set out by the Financial Stability Board, the international body that coordinates the work of national financial authorities and international standard-setting bodies.

In a report issued in October 2024, the FSB described blockchain-based distributed ledgers as holding the details of transactions in a data structure that consists of blocks of information. When a ledger is updated, blocks of new information are appended to a chain of pre-existing blocks that are linked together using a cryptographic mechanism.

Initially, the technology was used to create crypto currencies, such as bitcoin, that exist only on a blockchain—a status often referred to as "on-chain." But the financial industry is now exploring the potential to apply this technology to traditional financial products and bring the benefits of tokenisation into traditional markets.

In contrast to today's securities markets and banking systems, blockchain networks can operate twenty-four hours a day, seven days a week, 365 days a year, and ownership of the assets represented on these networks can be transferred in near real time.

Tokenisation can be applied to real world assets such as fiat currency, real estate, commodities or even works of art. Of particular relevance for this paper, tokenisation can be applied to securities that have been immobilised on another system of record, such as a custodian or a central securities depository. These assets can be represented as a token on a blockchain and reconciled with the original system of record to ensure that ownership is reflected accurately.

Tokenisation can also include assets that are "natively issued" on a blockchain, meaning that the primary record of value is on the blockchain. This type of tokenisation is now a reality in mainstream financial markets. For example, in November 2024 the European Investment Bank, the lending arm of the European Union, issued two digital bonds, both with a face value of €100 million, with one using blockchain technology provided by Goldman Sachs and the other using blockchain technology provided by HSBC.

Adoption of tokenisation is approaching quickly

FIA believes that the cleared derivatives industry is approaching an inflection point in the adoption of tokenisation. We are seeing rapid developments in the adoption of blockchain networks and distributed ledger technology across a range of financial markets, and regulators around the world are moving to encourage this innovation. In this section of the paper, we describe the reasons why we believe adoption of tokenisation is approaching quickly in our industry.

First, there is a rising awareness of the potential for tokenisation across many sectors of banking and finance

One example is the repo market in the US, one of the most important sources of funding for financial market participants. Several large investment banks are actively using a platform operated by Broadridge, a financial technology company, that uses distributed ledger technology for repo transactions, with transaction volumes averaging $1.5 trillion per month in 2024. In addition, JP Morgan is facilitating intraday repo transactions on Kinexys, its blockchain platform, with both cash and assets moving on a unified ledger.

Another example is in the money market fund industry in the US. Several well-known asset managers, including Blackrock, Franklin Templeton and WisdomTree, have launched tokenised money market funds. Assets under management in these funds, which are regulated by the US Securities and Exchange Commission, surpassed $6.9 billion in April 2025, according to RWA.xyz, a data platform that tracks tokenised real-world assets. The emergence of tokenised money market funds is especially relevant to the cleared derivatives markets because some clearinghouses accept conventional versions of money market funds as collateral.

Another example is the issuance and use of stablecoins, a form of tokenised money that pegs its value to a fiat currency. The value of stablecoins in circulation worldwide has risen from $135 billion in January 2024 to $240 billion in April 2025, according to DeFiLlama, a data provider. One of the primary uses for these stablecoins is to meet demands for collateral in the crypto asset markets that have developed over the last decade, but they also are beginning to gain traction in mainstream finance as a form of payment.

Second, leading clearinghouses are engaging with blockchain technology

Over the last 12 months there has been a flurry of announcements from major market infrastructure operators about their interest in deploying blockchain technology, and many observers now see a sense of enthusiasm about the potential benefits for the industry.

One example is Eurex, which operates the largest derivatives clearinghouse in Europe. Eurex has formed a partnership with HQLAx, a collateral management company based in Europe, that will allow clients to mobilise margin collateral via custodians and central securities depositories on the HQLAx digital ledger and post the collateral to Eurex Clearing to meet margin requirements. Although this use case does not involve tokenisation, it does rely on distributed ledger technology to record transactions, and it represents one of the first examples of

this technology to move from pilot to production within the cleared derivatives industry.

In addition, Eurex Clearing has participated in trials conducted by the European Central Bank to test real-world uses of digital money on distributed ledgers maintained by central banks in Europe. For example, in October 2024, Eurex Clearing cleared intraday and overnight repos using digital native instruments in a full production environment. The transactions were processed by a blockchain platform operated by Clearstream, the central securities arm of Deutsche Börse, and the cash leg was settled in central bank digital money over a distributed ledger operated by Banque de France.

Another example is the Depository Trust and Clearing Corporation, the largest securities clearinghouse in the US. DTCC has said it views collateral mobility as the "killer app" for institutional use of blockchain, and it is working with investment banks, custodians and other clearinghouses to test the process for tokenising assets and using them as collateral. In April 2025, DTCC conducted a demonstration of its digital collateral management program and showed how blockchain-based collateral could be deployed on a real-time basis between industry participants and across time zones to meet a variety of margin needs.

Two other clearinghouses recently announced initiatives in this area. CME Group, which operates the largest derivatives clearinghouse in the US, announced in March 2025 that it is working with Google Cloud to develop solutions for wholesale payments and tokenisation of assets. CME said it has completed the first phase of integration and testing of a distributed ledger platform developed by Google and intends to launch new services in 2026.

Intercontinental Exchange, the parent company of several derivatives exchanges, announced in March 2025 a memorandum of understanding with Circle, one of the largest stablecoin providers. ICE said it will explore using Circle's stablecoins to develop new products and solutions within ICE's derivatives exchanges, clearinghouses, data services and other markets.

Third, the crypto asset markets have provided a working model for the use of tokenised collateral

Although tokenisation is a relatively new technology in mainstream financial markets, it is already being used at scale for moving collateral in the crypto asset markets that have sprung up around the world and have grown exponentially in recent years. These markets operate on a 24/7/365 basis, and for roughly a decade they have been using bitcoin and other crypto assets as collateral for leveraged transactions.

It is worth noting that some institutional participants in these crypto markets are now looking to mainstream financial institutions to support their use of tokenised collateral. For example, in April 2025 Standard Chartered, a leading international banking group, announced the launch of a "collateral mirroring programme" with OKX, one of the largest crypto asset exchanges, with the goal of allowing institutional clients to use crypto currencies and tokenised money market funds as off-exchange collateral for trading. One of the first clients was the digital asset division of Brevan Howard, a leading European hedge fund.

Fourth, regulators are recognising the benefits of tokenisation

At the global level, central banks and financial market regulators are working together to explore the potential for tokenisation to impact the global financial system. While much of their work has focused on the potential risks, they also have launched numerous pilots to explore how the technology functions and what improvements it could bring for such areas as payment systems, fund management, bond issuance and securities settlement.

One example is the Bank for International Settlements, the international organisation that serves central banks and other financial authorities. The BIS has launched five projects to explore the potential for tokenised digital assets. Its most recent initiative, a joint study with the Federal Reserve Bank of New York, explored the implications for monetary policy operations in a future scenario in which tokenisation is "widely adopted" for wholesale payments and securities settlement.

Another example is Project Guardian, a collaboration of global policymakers and private sector institutions led by the Monetary Authority of Singapore. The initiative aims to establish frameworks, guidelines and standards for financial asset tokenisation and encourage the development of what MAS describes as a "sound and sustainable digital asset ecosystem."

In addition to its role in Project Guardian, the MAS issued a consultation paper in October 2024 on a regulatory framework for "digital token service providers" and announced in November 2024 a plan to support the commercialisation of asset tokenisation.

In Europe, Switzerland has emerged as a leader in adapting its legal framework to support blockchain technology, most notably with the enactment of the Blockchain Act in 2021. More recently, Luxembourg has made several amendments to its laws to support the issuance of digital securities and promote tokenisation. In Germany, BaFin, the country's financial markets regulator, has granted a "non-objection" to Eurex Clearing allowing it to move forward with its partnership with HQLAx.

In the UK, the government has established a "digital securities sandbox" to promote the development of digital innovation as well as an asset management taskforce to examine fund tokenisation. In addition, the UK Jurisdiction Task Force, a quasi-official body, has concluded that legislation was not necessary to support many securities tokenisation models.

Until recently the US lagged behind, but following the 2024 elections, there has been a dramatic shift in policy. The Trump administration is supportive of digital assets, Congress is working on legislation to provide a legal framework for digital assets; and the Securities and Exchange Commission has pivoted from enforcement and lawsuits to collaborating with the industry and working towards clarity in jurisdictional boundaries.

For the cleared derivatives industry in the US, the Commodity Futures Trading Commission is the key regulator. The agency has not yet opined on the use of tokenised collateral, but a group of industry experts working within the CFTC's Global Markets Advisory Committee issued a report in November 2024 with recommendations to expand the use of non-cash collateral through distributed ledger technology.

The GMAC report argued that no new rules are needed to allow blockchain technology to be used to improve the operational infrastructure for assets such as Treasury bonds that are already eligible to serve as margin. The report also asserted that market participants can use their existing policies, procedures, practices and processes to identify, assess and manage the risks of using blockchain technology, as they do currently for other forms of market infrastructure and technologies.

Case Study: FIA review of CFTC rules

FIA convened a working group in 2024 to review the Commodity Futures Trading Commission's regulations for potential regulatory obstacles to the use of tokenised collateral by CFTC-regulated firms. With the assistance of outside counsel, the working group identified CFTC rules that could potentially be relevant to the custody, recordkeeping, segregation and reporting of tokenised collateral by futures commission merchants and clearinghouses. Ultimately, the working group came to the same conclusion as the GMAC report: given the flexibility and comprehensiveness of the CFTC's core principles regime, no CFTC rule revisions or guidance are necessary at this time to implement the use of tokenised collateral in the cleared derivatives markets. This overarching conclusion came after months of robust discussion within the working group, highlighting the increasing level of interest in tokenised assets among FIA members.

Collateral challenges in the cleared derivatives markets

In the cleared derivatives markets, participants are required to deposit collateral to meet margin requirements set by clearinghouses, also known as central counterparties. There are two types of margin. Initial margin is the minimum amount of collateral required to open a position and serves as a downpayment to cover potential losses from a trade. Variation margin is the periodic payment to account for changes in the market value of the underlying asset.

Clearinghouses issue margin calls at least once a day, and more frequently when markets are volatile. Clearing members have very short deadlines, typically one hour, to post collateral to meet these calls. The clearing members must then collect the collateral from clients, typically at the beginning of the next day.

Two types of collateral are used to meet margin requirements: cash and securities. Variation margin calls can be met only with cash; initial margin can be a mix of securities and cash.

Today's technology and operational systems have demonstrated their ability to manage the movement of billions of dollars in cash and securities every day to meet the margin requirements set by clearinghouses. But the process for transferring assets from one party to another is not as efficient and automated as it could be, especially for non-cash assets.

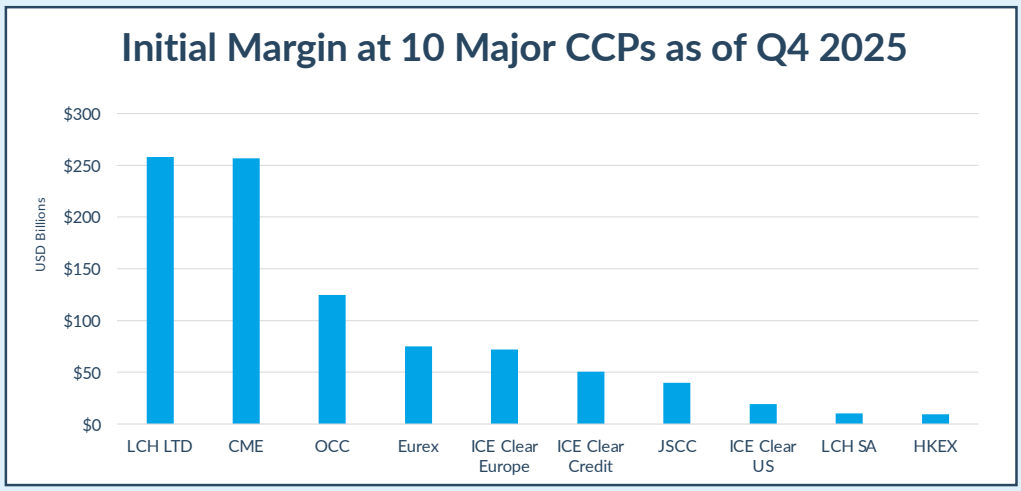
The transfer of these assets frequently requires the involvement of multiple intermediaries with multiple non-standardised systems, which can make the settlement process lengthier and more complex. The ability to make each step in the end-to-end flow quicker and to streamline the entire process could have a powerful effect on the efficiency of clearing and settlement. In addition, the infrastructure needed to transfer these assets typically is not in operation on weekends or holidays, and the many variations in national holidays adds another layer of complexity when collateral is moved from one jurisdiction to another.

Although cash is easier to post as collateral, it is expensive to hold cash balances. As a result, market participants normally maintain their liquid reserves in non-cash assets that produce income, such as government securities. In many cases, they cannot post those assets as collateral and instead must liquidate the assets to generate cash that can then be posted as collateral. This may be because the margin call is for variation margin and cash is the only type of asset eligible for that type of margin call. Or it may be that the call is for initial margin and the liquid reserves are held in a type of non-cash asset that is not accepted by the clearinghouse. Or it may be because there is simply not enough time to mobilise non-cash assets within the deadlines set by the clearinghouses.

There are also challenges with the movement of cash. During banking holidays, the payment rails for moving cash, such as the Fedwire system in the US and the T2 system in Europe, are not available. Another set of issues arise with cross-border cash transfers because the banking system in one time zone may not be open when margin calls are issued in another time zone.

Initial margin amounts at 10 major clearinghouses

This chart shows the amount of initial margin held by 10 major clearinghouses as of the end of 2024. The amount consists of cash and various types of securities posted by clearing members and their clients to meet the initial margin requirements for their outstanding positions. The amounts range from $258.1 billion at LCH Ltd to $9.3 billion at the three clearinghouses operated by Hong Kong Exchanges and Clearing. The total amount for the 10 clearinghouses combined was $915.7 billion.



Source: FIA CCP Tracker

Note: *The IM amount for LCH Ltd includes a small amount of IM associated with its cash equities clearing. In all other cases, the IM amount covers cleared derivatives only.*

The benefits of tokenisation

Tokenisation would address many of these challenges. First, it would increase the speed of asset transfers, especially for non-cash collateral. Transfers of tokenised assets on a blockchain can happen in near real time, cutting the settlement time from days to minutes.

Second, it would allow for extended trading hours, including the potential for 24/7 trading, by decoupling the settlement system from the operational hours of traditional banking system payment rails. This would solve the funding problems that arise during holidays and weekends and reduce the risk of operating cleared derivatives markets around the clock every day of the year.

Third, using a distributed ledger to make transactions and keep records of ownership means that all parties to the transaction would rely on the same source of data. This would reduce the errors that arise when each entity keeps its own record of the transaction on its own system and the inefficiencies that arise from the duplication of processes across financial institutions.

Fourth, tokenisation could allow for the automation of certain functions through the use of "smart contracts." This term refers to instructions that can be coded into the tokenised asset and carried out automatically when certain conditions are met, similar to algorithms in trading systems and macros in spreadsheets. For example, a smart contract could automate the payment of interest on a tokenised government bond that is being used as collateral.

These benefits of tokenisation make its adoption extremely compelling for the cleared derivatives markets. Its adoption, however, will require the industry to raise its understanding of tokenisation and take pragmatic steps in a controlled environment to build trust around this new technology.

Challenges ahead

As the cleared derivatives industry seeks to deploy this technology at scale, several important issues will need to be considered.

Operational and technological standards: The cleared derivatives markets currently move billions of dollars of collateral every business day, and any alternative technology solution will need to meet the same high standards for reliability, throughput, operational resilience and information security. Equally important, institutions will need the ability to integrate blockchain-based technology for moving collateral with existing technology stacks and operational systems.

Interoperability: At present, the tokenisation landscape is extremely fragmented, with a plethora of blockchain networks and proprietary systems vying for market share. For example, as of January 2025 Franklin Templeton's tokenised money market fund was available on eight networks: Aptos, Avalanche, Arbitrum, Base, Ethereum, Polygon, Solana and Stellar. Circle's USDC stablecoin is supported on 19 blockchain networks: Algorand, Aptos, Arbitrum, Avalanche, Base, Celo, Ethereum, Hedera, Linea, NEAR, Noble, OP Mainnet, Polkadot, Polygon PoS, Solana, Stellar, Sui, Unichain, and ZKsync. Several major investment banks, including Goldman Sachs and HSBC, have built their tokenisation platforms on the Canton Network blockchain, and Broadridge's repo platform also operates on that blockchain. Eurex is working with HQLAx, which is using the Corda distributed ledger technology developed by R3. CME is working with Google Cloud Universal Ledger, and DTCC is working with Hyperledger Besu.

This fragmentation makes it difficult for market participants to move tokens between different platforms, limiting liquidity and preventing the full realisation of tokenisation's benefits. The development of interoperability solutions that allow different blockchain networks to connect and exchange information will be crucial for driving broader adoption of tokenisation. Alternatively, there have been proposals, most notably from the Bank for International Settlements, for the development of universal ledgers that would form the basis of the technology stack on which developers can build their solutions.

Self-Custody: Blockchain technology could allow clearing brokers and central counterparties to establish a digital wallet on a blockchain and act as the custodians for customer assets. In this scenario, custodians and central securities depositories would have very different roles from current industry practices.

Privacy: It is important for the blockchain network providers to recognise that any new systems for managing collateral will need to serve the sophisticated institutional investors that account for a large proportion of trading volume on derivatives exchanges. Institutional investors are extremely careful to protect the confidentiality of their trading strategies and market positions. They are unlikely to join blockchain networks if their collateral movements are broadcast to everyone on the network, as is the case with some blockchains.

Legal certainty: The industry needs confidence that transfers of ownership, pledges of collateral, and custody of assets on a blockchain are legally valid, and that the design and function of the blockchain are consistent with the legal rules on settlement finality. This is where regulators can play a role by providing the guidelines and standards necessary to achieve legal and regulatory certainty. For example, the UK Jurisdiction Taskforce has issued three legal statements on digital assets and English insolvency law. In one of its statements, the UKJT confirmed

that existing English insolvency law is "entirely capable of convenient and sensible application to disputes concerning digital assets."

Liquidation Certainty: It is critical to preserve the ability of clearing brokers and central counterparties to immediately exercise rights to the collateral represented on the blockchain in case of a default, just as they do today with cash and securities posted as collateral. The fundamental purpose of collateral in cleared derivatives markets is to protect against loss. When a firm is in financial difficulty, its counterparties—most notably the central counterparties that sit at the center of the cleared derivatives markets—must have confidence that they can liquidate the collateral immediately. For that reason, it is necessary to determine that the tokenised collateral falls within the definition of the type of collateral that benefits from legal recognition of enforceability—without stays, moratoria or other insolvency powers that might hamper prompt enforcement of security over the collateral.

Prudential treatment: Under the current standards for bank capital requirements, it is not clear whether clearing firms that are part of banking organisations can obtain the same capital relief for tokenised assets that they get if they use traditional assets as collateral.

Cybersecurity: The industry will need confidence that the blockchain networks they use to move tokenised collateral are secure and cannot be hacked. It is worth noting, however, that this is not a fundamentally new risk—market participants face similar risks with any new technology.

Recommendations

FIA puts forward four recommendations for the industry to consider to advance this promising technology.

1. Education is key

Education can accelerate the adoption of tokenisation. This is a new technology that will require a new set of workflows. To quote a recent statement from DTCC, "blockchain necessitates a completely new skillset and introduces a new technology stack into a financial market participant's environment which requires complex system and data integration." FIA can play an important supporting role by connecting experts in blockchain technology with the operations, risk, funding, compliance, legal and other professionals who manage the movement of collateral in today's technology systems.

2. Legal certainty will quicken adoption

The industry will need to examine the regulatory and legal frameworks for cleared derivatives and identify any impediments to the use of tokenised collateral. Some jurisdictions have taken steps already to update their rulebooks and amend their laws. Some have clarified where existing laws accommodate the use of tokenised collateral. Others have only just begun. This is a critical step for building legal certainty around this technology. As an initial step, FIA has conducted an analysis of the collateral-related rules that apply to derivatives clearing in the US (see case study on page 10).

3. Start with conventional collateral

As a first step, it makes sense to concentrate on forms of collateral that meet existing regulatory standards for liquidity, such as certain government bonds and money market funds. Although blockchain technology can be used for virtually any type of asset, attempting to use assets that are not already eligible as collateral may require extensive regulatory analysis. In contrast, focusing on the tokenisation of real-world assets that meet the criteria set by regulators for collateral eligibility could provide a faster path to adoption. An additional point in favour of focusing on non-cash collateral is that these assets generate a return. With interest rates currently at relatively high levels, that is an important advantage over digital forms of cash.

4. Collaboration and standards are critical

The adoption of tokenisation at scale will require collaboration across the cleared derivatives ecosystem. That includes clearinghouses, clearing brokers, custodians, market participants, traditional technology providers and the next generation of blockchain network providers. One way to encourage this collaboration and the development of standards is through pilot projects that test applications of this technology in controlled environments, similar to the projects that central banks have used to test applications of blockchain technology in other areas of finance. Clearing brokers, which act as the intermediaries between clearinghouses and their clients, will be particularly important to any such projects because of their role in collecting collateral from clients and posting it to clearinghouses. In the coming months FIA will explore ways to advance this technology through various forms of collaboration, such as demonstrations, tabletop exercises and pilot projects.

Appendix 1: Types of Collateral Used with Cleared Derivatives

Type of Collateral	Issuer Country	Currency	CME	EUREX	ICE Clear Europe	LCH Ltd	OCC
Sov Bonds	Australia	AUD					
Sov Bonds	Austria	EUR					
Sov Bonds	Belgium	EUR					
Sov Bonds	Canada	CAD					
Sov Bonds	China	EUR/USD					
Sov Bonds	Czech Republic	CZK					
Sov Bonds	Denmark	DKK					
Sov Bonds	Finland	EUR					
Sov Bonds	France	EUR					
Sov Bonds	Germany	EUR					
Sov Bonds	Hungary	EUR					
Sov Bonds	Ireland	EUR					
Sov Bonds	Italy	EUR					
Sov Bonds	Japan	JPY					
Sov Bonds	Luxembourg	EUR					
Sov Bonds	Mexico	MXN					
Sov Bonds	Netherlands	EUR					
Sov Bonds	Norway	NOK					
Sov Bonds	Poland	EUR					
Sov Bonds	Portugal	EUR					
Sov Bonds	Singapore	SGD					
Sov Bonds	Spain	EUR					
Sov Bonds	Sweden	SEK					
Sov Bonds	Switzerland	CHF					
Sov Bonds	United Kingdom	GBP					
Sov Bonds	United States	USD					
Agency Bonds		CHF					
Agency Bonds		EUR					
Agency Bonds		SEK					
Agency Bonds		USD					
Agency Bonds		GBP					
State/Municipal Bonds		CAD					
State/Municipal Bonds		EUR					
Supranational Bonds		USD					
Supranational Bonds		EUR					
Corporate Bonds		EUR					
Corporate Bonds		USD					
Covered Bonds		DKK					
Mortgage Backed Securities		USD					
Equities		CHF					
Equities		EUR					
Equities		USD					
Exchange Traded Funds		USD					
Mutual Funds / UCITS		EUR					
Mutual Funds / UCITS		USD					
EUA Certificates		EUR					
Gold		USD					

Sources: CME Clearing - Acceptable Collateral - CME Group, Eurex Clearing - AdmissibleCollateralSecurities.pdf, ICE Clear Europe - List-of-permitted-covers.pdf, LCH Ltd - LCH Ltd Acceptable Securities | LSEG, OCC - Acceptable Collateral & Haircuts

Note: Acceptance of collateral is generally subject to several types of criteria, including currency denominations, liquidity, maturity, credit ratings and concentration limits.

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