

# DTCC

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## A PROGRESS REPORT ON OTC DERIVATIVES TRADE REPOSITORIES

Many Miles Travelled, More Yet To Go

DTCC White Paper



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## *Dear Colleague:*

The response of political leaders in the world's developed economies to the 2008 financial crisis included a special focus on the global market in over-the-counter (OTC) derivatives and its role in heightening systemic risk. The Group of 20 (G20) prescribed a range of risk-mitigating reforms, one of which - the reporting of OTC derivatives transactions – led to the establishment of multiple trade repositories (TR) in key regulatory jurisdictions. As of mid-2017, 22 trade repositories are operating in Financial Stability Board (FSB) member jurisdictions.

In a paper<sup>1</sup> published in April 2013, the Depository Trust & Clearing Corporation (DTCC) argued that achieving the G20's transparency goals and serving the public good required a trade reporting framework consisting of harmonised reporting requirements across jurisdictions and a single data repository per asset class. Unfortunately, however, a lack of global coordination and a local approach toward initial implementation of trade reporting has resulted in a lack of global standards and multiple repositories in many of the jurisdictions. Without global standards, regulator access and risk analysis are seriously compromised, as there is no consistent or singular view of the data. Reporting rules, data fields, terms and formats vary from one jurisdiction to another, fragmenting the reporting environment for firms that are regulated in multiple jurisdictions. Such fragmentation also increases the costs for all involved in reporting and using the data.

While the present state of compliance with multi-asset-class and multi-jurisdictional OTC derivatives trade reporting rules represents tremendous post-crisis progress, significant challenges remain in order to transform the current patchwork of reporting rules into a standardised framework that facilitates the sharing and analysis of data.

Collaborative work across the derivatives industry is aiming to address the market's current data reporting challenges and set the stage for a future state that will not only address the current reporting challenges, but could potentially support the development of new services as well as leverage new technologies to further enhance the value of trade data. Standard setting bodies, trade associations, regulators, market participants and market infrastructures have worked together to develop technical guidelines for data consistency and governance standards that are vital to expedite access to and sharing of data.

A global reporting framework, built on collaboration, can enable trade repositories to fulfil their essential function – to provide regulators with information that allows them to proactively detect risks in the financial system generated by OTC derivatives trading activity and then implement relevant mitigating actions.

Finally, looking toward the future technologies like digital ledger should be explored as it presents a potential to advance trade reporting in transformative ways.

**Chris Childs**  
CEO and President  
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<sup>1</sup> New infrastructures for a sounder financial system, Michael C. Bodson, CEO, DTCC, Financial Stability Review, Banque de France, April 2013

## INTRODUCTION

In his 2017 testimony to the U.S. House Committee on Agriculture<sup>2</sup>, Giancarlo stated, “Of the many mandates to emerge from the financial crisis, visibility into counterparty credit risk of major financial institutions was perhaps the most pressing. The failure to accomplish it is certainly the most disappointing.”

Yet, in cultivating its data management and transaction expertise, **the industry has made significant progress over the past eight years toward constructing the framework upon which to build a truly global risk monitoring system for the OTC derivatives market.** Meanwhile, regulators and standard-setting bodies have developed the components of a global reporting and risk monitoring framework, and jurisdictions have started to overcome a number of differences in reporting practices.

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*“Nine years after the financial crisis, [trade repositories] still cannot provide regulators with a complete and accurate picture of bank counterparty risk in global markets. In part, that is because international regulators have not yet harmonised global reporting protocols and data fields across international jurisdictions.”*

– Christopher Giancarlo, Chair, U.S. Commodity Futures Trading Commission (CFTC)

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Reporting formats, identifiers and rules are converging across regulatory jurisdictions; regulators are increasingly recognizing the need for cross border data aggregation; and in the future new technologies like digital ledger offer tantalising future possibilities in such an environment, the industry can increase the data-sharing and analytical power of trade reporting.

In the more than 10 years of operating its Deriv/SERV business line, DTCC has interacted closely with numerous participants, industry associations, standards-setting bodies and regulators in the derivatives market space. **This paper draws on DTCC’s experience and expertise to summarize progress made to date and proposes how the industry can continue to move toward an integrated reporting framework for the global OTC derivatives market.**

## POST-CRISIS RESPONSE: TRADE REPOSITORIES IN THEIR INFANCY

The global financial crisis of 2008 prompted the G20’s political leaders, at their September 2009 meeting in Pittsburgh, to mandate the reduction of systemic risk through clearing, collateralisation, capital requirements and reporting of OTC derivatives transactions. The precedent for trade-reporting repositories was already in place. In 2003, DTCC established the Trade Information Warehouse (TIW), the market’s first lifecycle processing infrastructure for credit default swaps (CDS) which by necessity, provided a central repository of all relevant trades. By 2008, an estimated 98% of all CDS contracts worldwide were being serviced by TIW using data and processing standards defined in conjunction with industry participants. TIW laid the foundation for DTCC’s creation of the Global Trade Repository (GTR) service in 2012, which, through locally registered or recognized trade repositories, now collects and reports data in all five asset classes across multiple jurisdictions.

National legislators and regulators however, rather than following this global approach to standardization, responded to the G20 commitments by prioritising domestic compliance. New rules were developed in accordance with local market priorities and realities, building upon existing legal structures that vary across individual jurisdictions. Additionally, multiple trade repositories were established, each having to be individually approved in each jurisdiction where they provided services.

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<sup>2</sup> Statement of J. Christopher Giancarlo, Chairman U.S. Commodity Futures Trading Commission, before the House Committee on Agriculture (11 October 2017)

The result: a fragmented global reporting environment in which a firm regulated in multiple jurisdictions might have to report the same OTC derivatives transaction to multiple trade repositories, each one applying different identifiers, reporting rules, data fields, terms and formats.

## THE PRESENT STATE OF TRADE REPOSITORIES GLOBALLY

The implementation of OTC Derivatives trade reporting around the world over the past eight years has been a success story in many ways: Domestic compliance with the G20 reporting mandate has been established, a wide range of reporting requirements have been met, and new processes and procedures have been implemented to ensure that transactions across the multi-asset-class OTC derivatives universe can be reported in an accurate and timely fashion. Today, DTCC's GTR alone processes over 1 billion messages per month on 40 million open trades a week cover 100,000 entities.

But jurisdictions have followed very different routes to implementation, notably with the U.S. initially adopting a “catch-all” approach to the data it requested from market participants, while Europe has been more prescriptive. As a result, the current patchwork of reporting rules has introduced greater cost and complexity for market participants.

**In its most recent assessment of the implementation of post-crisis reforms in the OTC derivatives markets<sup>3</sup>, the FSB said, “Significant challenges remain, and it is important to complete work quickly to improve the quality of, and ability to aggregate, TR data, including by removing legal barriers to the full reporting and sharing of such data.”**

At the end of June 2017, there were 22<sup>4</sup> TRs operating in FSB member jurisdictions (plus 12 “TR-like” entities, typically operated by central banks). But authorities in different jurisdictions cannot easily access the data in these TRs.

Furthermore, while every FSB member jurisdiction except one will have a TR in place as of Q1 2018, coverage has been inconsistent in terms of instrument types and market participants as implementation timelines have been staggered by jurisdiction. This inconsistency also stretches to the granting of TR licenses in some jurisdictions, while others, like Hong Kong, have established regulator-operated reporting facilities. Additionally, other jurisdictions run a middle course: Firms in Japan can report directly to the Financial Services Agency (JFSA) or through a licensed repository such as DTCC Data Repository (Japan) KK (DDRJ).

More important, perhaps, is the diversity in the data fields, terms and core elements required in different jurisdictions – which raises compliance costs and hampers the objective of data aggregation to monitor systemic risk.

The sharing between regulators of data held by TRs has been less than originally intended due to inconsistencies in the data collected along with legal and structural access constraints. Even where memoranda of understanding (MoUs) exist to share data between regulators, their effectiveness has been limited by differences in the data collected. The 2014 MoU between the Monetary Authority of Singapore (MAS) and the Australian Securities and Investments Commission (ASIC) remains the prime example of a bilateral access agreement between G20 jurisdictions. Yet its utility is tempered by jurisdictional differences, such as the timelines for rolling out reporting obligations to various market participant categories.

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<sup>3</sup> OTC Derivatives Market Reforms: Twelfth Progress Report on Implementation – The Financial Stability Board (June 2017)

<sup>4</sup> Appendix G of OTC Derivatives Market Reforms: Twelfth Progress Report on Implementation – The Financial Stability Board (June 2017)

### Present State: Progress to Date

As the FSB notes<sup>5</sup>, “Significant challenges remain to be overcome before all FSB member authorities are in a position to fully and effectively access, aggregate and analyse TR data, including the need to remove legal barriers to authorities’ domestic and cross-border access to TR data as well as to harmonise TR data elements.” Furthermore, regulators’ use of data collected via TRs varies substantially across jurisdictions, due to differences in regulatory requirements, variations in data scope and staggered implementation timelines, with some entities and instruments not yet captured.

Despite these shortcomings in the current state of OTC derivatives reporting, progress in the following areas is laying the foundation for a global reporting framework.

#### COLLABORATION

TRs, such as the those comprising DTCC’s GTR service, have acted as a valuable bridge between regulators, regulated firms and industry bodies to share experience, information and perspectives. In addition, DTCC has used its advocacy role to provide consistent input to regulators’ consultations across all jurisdictions, while also collaborating with the industry to develop more streamlined and cost-effective reporting mechanisms and workflows.

#### GLOBAL STANDARDS

Key industry bodies are establishing data and processing standards for OTC derivatives, along with guidance for implementing these standards in ways that harmonise reporting practices across jurisdictions.

The International Swaps and Derivatives Association (ISDA) continues to develop its Common Domain Model (CDM) of data and process standards for OTC derivatives, while the FSB is collaborating with the Committee on Payments and Market Infrastructures and board of the International Organisation of Securities Commissions (CPMI-IOSCO) to formulate governance and technical guidance to underpin common data standards for derivatives reporting.

Standards-setting bodies, trade associations, regulators, market participants and market infrastructures continue to work together to refine technical guidelines around data consistency.

This work has resulted in the establishment of proposed guidelines for the consistent use and governance of the critical data elements (CDEs) needed to identify, process and report an OTC derivative transaction globally. CDEs include the Legal Entity Identifier (LEI), Unique Product Identifier (UPI) and Unique Trade Identifier (UTI). Collecting a concise data set based on consistently defined terms paves the way for effective data aggregation.

The FSB’s 2014 Aggregation Feasibility Study<sup>6</sup> underlined the need for a global aggregation mechanism, calling for the introduction of LEIs and mandating that CPMI-IOSCO develop guidance on harmonising data elements through such tools as uniform global UTIs and UPIs. LEIs are currently embedded in 14 G20 jurisdictions, but adoption of UPIs and UTIs has been slower. Although CPMI-IOSCO issued final technical guidance for UPIs and UTIs, no jurisdiction has yet incorporated these guidelines into their regulatory frameworks, due in part to jurisdictions’ varying approaches to product taxonomy and challenges around timely exchange of UTIs between counterparties.

<sup>5</sup> OTC Derivatives Market Reforms: Effectiveness and broader effects of the reforms – The Financial Stability Board (June 2017)

<sup>6</sup> Feasibility study on approaches to aggregate OTC derivatives data (September 2014)

The growing willingness of smaller jurisdictions to leverage practices in larger markets also promotes standardisation. For example, in its submission to the FSB's latest progress report, South Korea outlined plans to "adopt international recommendations on the use of identifiers, to prepare for verification of reporting items and data qualifications, and for interaction with foreign trade repositories."

### DATA SHARING

On the legal and regulatory front, parties have worked toward removing barriers to data sharing and third-party access. In addition, suitable ways are being sought to share data efficiently and cost effectively without unnecessarily burdening TRs. Much of the impetus comes from efforts coordinated by the FSB. In its latest assessment<sup>7</sup>, the FSB noted progress in a number of key jurisdictions but also called for intensified efforts to meet its June 2018 deadline for the dismantling of all obstacles to data access.

The U.S. Congress repealed statutory indemnification requirements in December 2015 that had previously limited data exchange with TRs from third-party jurisdictions. The CFTC subsequently proposed to establish procedures governing access to data collected by U.S. swap data repositories. Meanwhile, the European Commission in May 2017 proposed an amendment to the European Market Infrastructure Regulation (EMIR) to provide direct access to data held in European TRs for third-party facilities in jurisdictions with which equivalence has been agreed.

## SHAPING THE FUTURE STATE: ADDING FURTHER VALUE TO DATA REPORTING

Recent and planned actions by industry players, including regulators, will narrow the differences across jurisdictions in reporting policies and practices for OTC derivatives transactions. This increase in standardisation, in turn, will open new possibilities for users of TR data to extract increasingly greater value from this information, including through use of technologies like digital ledger.

### Shaping the Future State: Increased Coordination

Recent achievements by the FSB and CPMI-IOSCO on governance and technical standards are triggering policy decisions in key jurisdictions that are expected to result in broad adoption of a common framework for derivatives trade reporting. Ideally, such a framework will encompass standardised reporting requirements, improved controls for data quality, aligned formats, standard definitions, consistent values for data fields and globally recognized standards for product and transaction identification.

In Europe, the imminent Securities Financing Transactions Regulation (SFTR) leverages processes and protocols put in place under EMIR, while the European Commission in May 2017 adopted a proposal to simplify and streamline EMIR trade reporting requirements to reduce unnecessary compliance costs. Separately, a report published by the European Securities and Markets Authority (ESMA) in July 2017<sup>9</sup> referenced CPMI-IOSCO's work on data harmonisation and standardisation in noting that European reporting requirements will likely need further refinement.

In the U.S., the CFTC under Chairman Giancarlo plans to incorporate CPMI-IOSCO guidance in its new 'road map'. To ensure future interoperability and aggregation, the road map's milestones have been calibrated to track chronologically the completion of the FSB's and CPMI-IOSCO's remaining tasks on harmonisation around UTIs, UPIs and other CDEs, all of which are scheduled for completion in the first half of 2018. While the CFTC has reserved the right to include additional fields, pending the outcome of CPMI-IOSCO's consultations, it has indicated willingness to align with evolving global consensus where it has proven superior to U.S. practice, such as T+1 reporting<sup>8</sup>.

<sup>7</sup> OTC Derivatives Market Reforms: Twelfth Progress Report on Implementation – Financial Stability Board (June 2017)

<sup>8</sup> Subject to finalisation of the CFTC draft swap data reporting road map issued for consultation in July 2017

<sup>9</sup> Final report on draft technical standards on data to be made publicly available by trade repositories under Article 81 of EMIR – ESMA (July 2017)

## Shaping the Future State: Moving Beyond Trade Reporting

**As the industry moves through the critical process of establishing a fully standardised global reporting framework, the industry – which has invested heavily in collecting data for OTC derivatives trade reporting – should examine opportunities to expand the use of data that is captured through this process.** For example, the CDS market demonstrates a proven model for establishing a single trade record store that serves as a warehouse to collect and maintain data for all global credit derivatives transactions and hold a “golden source” record. The industry, as well as regulators, could benefit from adapting the approach taken in the credit derivatives space.

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**Whether employing a warehouse model or not, the industry, through collaboration among market participants, must implement consistent standards for all parties globally or, alternatively, create the ability to normalise data in accordance with the prescribed standards. From there, the industry could leverage the data collected to deliver new value-added services, further reduce costs and mitigate both operational and systemic risks.**

An example of adapting data for new services is DTCC's work toward developing a solution to help banks comply with Fundamental Review of the Trading Book (FRTB) regulation that will come into effect in 2022. This solution is expected to utilize the existing data collection and processing infrastructure that support global post-trade activity to deliver an FRTB “real” price observation data service that will help the industry demonstrate the ability to model risk factors.

Developments such as this suggest there is potential to create new value-added services and help firms consolidate multiple touch points for their post-trade activities.

## Shaping the Future State: The Role of Technology

The proliferation of technology innovation – including artificial intelligence and distributed ledger technology (DLT) – offers the industry an array of tools and solutions to not only improve the reporting process but also to increase the usefulness of the collected data. This could lead to a future where regulators gain access to data processing infrastructures on a more real-time basis.

**Rapid advances in DLT have proven its ability to provide a single, immutable and commonly accessible record of transactions among multiple parties, thereby increasing transparency and reducing costs for market participants.** As a result, the industry is already discussing whether DLT can enable a shift to searchable databases and full regulatory access. However, in order to harness DLT and other technologies to advance derivatives reporting, standards must be in place for reporting requirements, data quality, formats, codes and fields.

Initiatives such as the Hyperledger Project (of which DTCC is a founding member) and ISDA's CDM, which aims to ensure use of standard terms for common events in the OTC derivatives transaction chain, demonstrate the industry's efforts to leverage the benefits that DLT and other new technologies can deliver.

Working with specialist technology firms, DTCC is currently re-platforming TIW from a mainframe to a DLT system with the aim of enhancing efficiencies and generating new value-added services. Standardised process flows and data models make credit derivatives an ideal test case and provide an opportunity to test the technology with appropriate and meaningful scale. TIW currently automates the record keeping and lifecycle events for more than \$11 trillion of cleared and bilateral credit derivatives and payment management for bilateral credit derivatives. Bolstered by common data standards and governance, a DLT-based TIW can enable the industry to process and report to regulators from the same data record.

Even without DLT technology, centralized data warehouses conforming with consistent standards could help make data reporting less complex and costly.

### Shaping the Future: Recognizing the Risks of DLT

Innovation can also disrupt the stability and efficiency of financial market infrastructures. As highlighted in a recent DTCC white paper<sup>10</sup>, critical risk factors must be weighed alongside the need to foster innovation and experimentation. In particular, the migration or replacement of key processes inherent in the use of DLT-based platforms could result in future fragmentation, inefficiency and cost if due consideration is not given to standards.

In the OTC derivatives space, DLT will most likely be delivered via multiple ledgers supported by differing underlying technologies, rather than through a shared, universal utility. In such a landscape, the compatibility of multiple ledgers will be of paramount importance and require a disciplined approach to coordination and a commitment to the use of common standards. The industry is already concerned that the proliferation of DLT-based initiatives utilising multiple protocols, programming languages, data fields and dictionaries could replicate previous balkanisation. For DLT-based OTC derivatives platforms to be deployed successfully, it is imperative to avoid past mistakes, utilising technology, governance and data standards to ensure compatibility between ledgers and prevent any local customisations made during development and implementation from compromising end objectives.

While it offers a promising solution for meeting the challenge of global data harmonisation in the OTC derivatives space, the case for a DLT-based approach may take some years to evolve. For example, ledgers without rules could be used to satisfy reporting regulations only if current frameworks are amended to accept their data. Market participants and regulators should follow an inclusive, collaborative approach as they adapt TRs to advance market understanding of OTC derivatives.

## CONCLUSION

Since the G20 political leaders at their September 2009 summit in Pittsburgh issued the mandate for comprehensive monitoring of systemic risks emanating from the OTC derivatives market, the industry has travelled an impressive distance along the path to creating a global reporting framework for OTC derivatives transactions. Yet the final destination still lies some way ahead.

Market participants and regulators need to band together to complete the journey, united in a commitment to data standards, aggregation and access. A global reporting framework, built through collaboration and potentially enhanced through new technologies, like DLT, can enable trade repositories to better achieve their fundamental purpose: **to provide regulators with the data they need to identify and analyse risks in the financial system engendered by OTC derivatives trading activity.**

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<sup>10</sup> Fintech and Financial Stability – DTCC (October 2017)

## ABOUT DTCC

With 45 years of experience, DTCC is the premier post-trade market infrastructure for the global financial services industry. From operating facilities, data centers and offices in 16 countries, DTCC, through its subsidiaries, automates, centralizes and standardizes the processing of financial transactions, mitigating risk, increasing transparency and driving efficiency for thousands of broker/dealers, custodian banks and asset managers. Industry owned and governed, the firm simplifies the complexities of clearing, settlement, asset servicing, data management and information services across asset classes, bringing increased security and soundness to financial markets. In 2016, DTCC's subsidiaries processed securities transactions valued at more than U.S. \$1.5 quadrillion. Its depository provides custody and asset servicing for securities issues from over 130 countries and territories valued at U.S. \$49.2 trillion. DTCC's Global Trade Repository maintains approximately 40 million open OTC positions per week and processes over one billion messages per month.

## GLOBAL TRADE REPOSITORY (GTR) SCOPE



For questions or comments about this white paper, please contact us at [solutions@dtcc.com](mailto:solutions@dtcc.com) or visit [dtcc.com](http://dtcc.com) for more info.

