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OTC DERIVATIVES

NEW RULES, NEW ACTORS, NEW RISKS


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New infrastructures for a sounder financial system

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In the current transactions-based financial system, systemic breakdowns associated with liquidity failures become more likely when market participants and regulators have imperfect information about the potential liquidity flows and risk distribution in the system. Trade repositories are designed, in part, to address this problem.

Dramatic improvements in information and communication technologies are the main factor behind the tremendous expansion of securities and derivatives markets since the 1980s, which has made financial intermediation more of a trade-based rather than a relationship-based activity. The result is that every systemically important financial institution (SIFI) has a globally distributed web of exposures to a multitude of other market participants in the system, which makes the identification of aggregate risk or systemic fragility a complex task. In addition, the availability and accessibility of data in financial markets has remained largely siloed within specific markets, infrastructures and jurisdictions. Indeed, without relevant data on all existing trades, the ability to accurately identify risk exposure in an interconnected global financial system has become all but impossible for both participants and regulatory authorities, especially with traditional risk management techniques such as “value at risk” being widely criticised after the 2008 crisis.

Over the past two decades, one could argue that the public and the regulatory authorities relied, to a certain degree, on the self-correcting abilities of financial markets. Officials, such as the Federal Reserve in the United States and the European Commission’s Internal Market, have articulated on several occasions the importance of allowing self-correcting forces in financial markets to run their course. While there have been a number of disruptive events, they have had a limited impact in time and scope primarily because few markets and institutions appeared to suffer long-term negative impacts. Furthermore, the financial crises that had major impacts on developing countries in the 1990s were largely attributed to structural weaknesses in those economies rather than fundamental issues in the way contemporary financial markets and their associated risks were managed.

The 2008 crisis changed this mindset. Today, authorities explicitly recognise that financial markets do not always work predictably and can be systemically affected by remote market failures – that is, situations where markets break down and/or do not react in an expected way. As a result, policymakers and market participants have begun

to develop or reshape markets to be better equipped to help identify, manage and absorb – or ideally prevent – systemic failure. This has led to an emphasis on the development of tools and resources that allow regulators and the public to detect potentially dangerous market activity and trends – in effect, to create a system to proactively detect conditions that could create financial instability, such as excessive risk-taking, risk concentration or market manipulation.

As this paper will demonstrate, trade repositories (TRs), which provide transparency into the over-the-counter (OTC) derivatives markets, are a critical component of these efforts and arguably the most significant risk management innovation to emerge from the financial crisis of 2008.

Section 1 of the paper turns back the clock to look at how and why TRs were created and the lessons that were learned from the bankruptcy of Lehman Brothers in 2008.

Section 2 describes the way in which the financial crisis drove regulators to establish new global data access guidelines and the development of an online regulators’ portal for the global credit default swap (CDS) market, which has resulted in greater market transparency.

Section 3 focuses on an ideal model of how TRs should work in the new regulatory landscape, particularly the need for them to collect and maintain a complete data set per global asset class.

Section 4 addresses the operation of TRs as a “public good”.

Section 5 highlights the ongoing concerns, challenges and threats that could undermine the value and utility of TRs, such as divergent national or regional regulations, commercialisation of the TR function, the absence of globally agreed upon data standards and the fear of data concentration. It also offers several mitigating solutions.

Section 6 contains a few concluding remarks on future challenges for operating TRs.

1| THE HISTORY OF TRADE REPOSITORIES

While TRs are arguably one of the most significant innovations in the global market infrastructure space in recent years because of their ability to provide transparency into the opaque OTC derivatives market, they were originally created for an entirely different purpose.

The CDS market had grown significantly through the late 1990s and early 2000s, but only an estimated 15 percent¹ of trades were being captured electronically as of 2003. The trading process at that time was predominantly manual and error-prone and, in many cases, trades were taking up to a month to confirm – resulting in an accumulation of un-reconciled and unidentified risk in financial institutions and markets across the industry. Recognising the need to eliminate this risk, several national and trans-national authorities called for the development of an electronic matching and processing service for CDS trades.

Through the collaborative efforts of market participants and The Depository Trust and Clearing Corporation (DTCC), an industry utility providing post-trade services to global financial markets, an automated matching and confirmation system, known as Deriv/SERV was created in just nine months. Within a relatively short period of time from implementation, this new matching and confirmation service was being used to capture and process more than 95 percent of all global CDS trades.

With the confirmation problem resolved, regulators and market participants recognised that the downstream processing of CDS trades represented another area of concern. For example, the recordkeeping and reconciliation of modifications and amendments to CDS contracts, which could be resold or reassigned multiple times before their termination date, remained mostly manual. To address this, a new infrastructure was created in 2006, the DTCC Trade Information Warehouse (TIW), to provide an automated central warehouse to house and service all CDS contracts throughout their lifecycle.

By 2007, TIW held information constituting the legal books and records of over 2.2 million outstanding CDS contracts, representing an estimated 98 percent of the global inventory of CDS trades.

The Lehman bankruptcy

The 2008 financial crisis highlighted the ability of TIW to play a role that was different to that originally intended when it was created – to provide an unprecedented degree of transparency into the opaque CDS market through the development of what we now call TRs.

While there remains on-going debate about what led to the global financial crisis, among the most significant factors were:

- excessive one-way positions that American International Group (AIG) took in mortgage-related CDS trades, which threatened the continued viability of a systemically important firm and went unrecognised until too late; and
- a general lack of understanding of the value of the exposures and the interconnectedness of the counterparty community across the global derivatives market, which contributed to a lack of confidence in the creditworthiness of specific financial institutions during a time of market stress.

In the first instance, it is possible that if the current system for reporting and disclosure of CDS trade data, which was established by the OTC Derivatives Regulators' Forum (ODRF)² in 2009,³ had existed during the crisis regulators would have had an early indication of AIG's position and may have been able to take action to address the situation.

The bankruptcy of Lehman represents a watershed moment that established what would become known as TRs as an essential tool to help regulators manage systemic risk and to give the public transparency into position and activity levels in the CDS market. In the aftermath of the Lehman bankruptcy in September 2008, rumors swept through the

1 http://www.dtcc.com/news/press/releases/2011/deriv_reg_portal.php.

2 <http://www.otcdf.org/index.htm>.

3 http://www.otcdf.org/documents/framework_sept2009.pdf.

global marketplace that potential liabilities for CDS trades on outstanding Lehman obligations could top USD 400 billion. These rumors reached a peak when markets closed on Friday October 10, 2008, and investors feared the worst.

In response, regulators worked closely with DTCC to analyse data from TIW to get a better understanding of actual market exposures to the Lehman bankruptcy. This data revealed that the actual net liabilities would be far less than the market anticipated – in fact, after netting, around USD 6 billion rather than USD 400 billion. This brought a moment of much needed respite to a market rapidly spiraling out of control. Markets calmed and, in the subsequent auction of obligations, the actual figure of USD 5.2 billion proved the accuracy of the data in TIW. The utility of the TR had been firmly established.

Since the end of 2009, this central infrastructure has processed more than 50 bankruptcies and other “credit” events, including the Greek sovereign debt restructuring last year, ensuring the accurate and timely distribution of hundreds of billions of dollars in CDS payouts automatically triggered by such events.

2| HOW MARKETS HAVE RESPONDED TO THE NEED FOR TRANSPARENCY

2|1 Lessons learned from the financial crisis

The crisis of 2008 provides significant lessons learned for all stakeholders, which can best be summarised in the management maxim: “If you can’t measure it, you can’t manage it.”

- **Lesson 1: data transparency is critical.**⁴ Transparency of trading data is critical for a) regulators to understand where market risk and potential financial instability is building in the system and b) trading entities to understand their total risk exposures to their counterparties. Transparency allows concentration and counterparty risks to be identified and managed. Since 2008, data has become more widely accessible to stakeholders in order to improve market transparency.

- **Lesson 2: data accuracy is vital.** Transparency is only useful if the underlying data is complete and accurate. In the absence of accuracy, regulators and/or the public may draw flawed conclusions from the data. The most effective way to ensure data accuracy is to establish a central global TR that aggregates data and maintains the appropriate safeguards to prevent duplication, omission and other data capture errors that can impact accuracy.

- **Lesson 3: incomplete data compromises accuracy and transparency.** The global nature of derivative markets requires global solutions that ensure all stakeholders have access to their complete global data set. Regional solutions, by definition, can only provide part of the picture and, therefore, can only offer stakeholders a limited degree of market transparency. From a regulatory perspective, aggregation of data from multiple sources is likely to be problematic due to technical and geo-political constraints that may exist during a crisis, as evidenced before 2008.

2|2 Regulatory response to the financial crisis

The most visible response to improving market safety since the 2008 crisis is the implementation of policies to address the three lessons mentioned above. Lawmakers and regulatory authorities around the world have focused on establishing a system of oversight that facilitates greater transparency of financial markets to protect the integrity of, and mitigate risk in, the global financial system. Let’s look at two examples.

- **A global approach to data collection.** Regulators need timely access to detailed, accurate data on global derivatives activity, with a special focus on the traditionally opaque OTC derivatives market, so they can identify significant risk exposures and respond appropriately when the need arises. In recognition of this, the G20 made a series of recommendations at its September 2009 meeting in Pittsburgh to both harmonise global regulatory regimes and to increase the transparency of the world’s financial markets.

In October 2010, the Financial Stability Board (FSB) established twenty-one recommendations⁵ aimed at promoting consistency of derivative market reforms

⁴ <http://dtcc.com/products/derivserv/data/index.php>.

⁵ http://www.financialstabilityboard.org/publications/r_101025.pdf.

across jurisdictions, including several related to the role of TRs.

For example, the FSB's Recommendation No. 16 on access to data states:

"Market regulators, central banks, prudential supervisors and resolution authorities must have effective and practical access to the data collected by TRs that they require to carry out their respective regulatory mandates. Access to TR information by official international financial institutions also should be permitted in appropriate form where consistent with their mandates."

These recommendations form part of a global package of reforms, including enhancements to electronic execution, mandatory clearing and trade reporting, which are being turned into legal and regulatory proposals in the United States, the European Union and Asia.

- **A global approach to data transparency.** The ODRF and DTCC sought to build further improvements in market transparency by developing a "regulatory portal" (Portal) to give supervisors worldwide the ability to access trade data via a secure web-based service. The Portal, which was launched in 2011, enables regulatory agencies that are members of the ODRF to access granular data from all major dealers and more than 1,800 buy-side firms and other market participants in more than seventy countries markets. This provides them with a complete view of activity relevant to their jurisdictional responsibilities at the counterparty level as well as the underlying instrument, even if neither of the trading parties is located within their jurisdiction. The ability to view reference entity data, which is typically not available in local repositories, has proven invaluable during the recent European sovereign debt crisis because CDS trades are seldom written locally on local sovereign debt.

The Portal is the first global regulatory service of its kind in the financial marketplace and is fully aligned with the current needs of regulators and authorities. The Portal provides accurate, reliable and complete relevant data to the regulators in a timely and seamless manner without imposing artificial barriers based on geographic jurisdictions and home borders, which have little or no meaning in modern derivatives markets.

The Portal, consistent with regulatory recommendations, strikes a balance between the

level of data dissemination that is in the interest of both the public and regulators, while also maintaining appropriate levels of confidentiality to avoid market manipulation. While the public can access aggregate, anonymised data for free on the Internet,⁶ regulators can obtain more granular information, including:

- counterparty exposure reports, which provide buy/sell positions for the regulated entity aggregated by counterparty;
- underlying, or reference entity, exposure reports, which provide buy/sell positions aggregated by underlying and counterparty;
- systemic reports, which provide aggregate positions where a large financial firm is the underlying entity together with positions of other large financial firms.

As a result of these regulatory responses and market action, the CDS market is now arguably more transparent than the traditional equity and bond markets.

3 | HOW TRADE REPOSITORIES WOULD IDEALLY WORK IN THE NEW REGULATORY LANDSCAPE

Under new regulations in the United States, the European Union and parts of Asia, all OTC derivative trades (and exchange traded derivatives in the European Union), whether cleared or un-cleared, must be reported to a TR.

In an ideal world, the maximum benefit of trade reporting can best be achieved from the creation of a single, centralised TR per asset class. This global repository, acting as a utility, would collect and maintain data for all global derivative trades across asset classes. This centralised utility would also become the so-called "golden source" containing 100% of the legally binding contract data for all relevant derivative trades for that specific asset class.

There are significant benefits of establishing a single centralised TR, including:

- **reporting accuracy:** a single TR can implement global reporting templates, which would eliminate

⁶ <http://www.dtcc.com>.

potential errors associated with confusion arising from the existence of multiple templates even within single jurisdictions where there are multiple repositories;

- **reporting timeliness:** market participants have certainty where and when to report their trades;
- **reporting control:** a central TR can more easily assess the completeness and accuracy of the data through direct comparison of multiple reports. Internal reconciliation becomes a simpler activity than reconciliation between multiple entities and the chances of duplication or reporting error are greatly reduced;
- **data analysis:** a single TR can easily develop and share common data management and analysis tools among its user base, giving all regulatory authorities identical access to their complete relevant data set irrespective of where the derivatives trade was agreed upon and executed;
- **common best practice:** a central repository would allow best practices to be shared among the global regulatory community.

The CDS market offers the right model for establishing a single TR to bring data certainty and transparency to the other OTC derivatives asset classes. In the CDS space, a utility operating with virtually all of the relevant transaction data has best served the public good. Based on this experience, the existence of multiple commercial TRs would create new challenges and unintended consequences that could impact market transparency.

4| TRADE REPOSITORIES AS A PUBLIC GOOD

Many definitions of a “public good” exist and they all include these basic characteristics:

- it is usually a commoditised service;
- it is provided without profit;
- it can be provided by public or private entities;
- it is a service designed to provide a service to the “public” (i.e. all stakeholders);

- its usage by one stakeholder does not preclude usage by any other;

- its usage by one stakeholder does not impact any other.

Access to and consumption of information critical to the public good, whether by private agents, public authorities, market participants or the public at large, should be championed.

Most developed nations, within the limits of national security, promote freedom of access to information. Financial markets should be no different because, as described earlier, market opacity during the Lehman bankruptcy had the potential to transform market stress into a financial crisis. The lack of a publicly available, accurate “real-time” picture of the overall size of market positions and exposures left participants prey to rumor and created market reactions that could have exacerbated the situation. The availability and accessibility of data is essential in helping regulators monitor risk in the marketplace and enabling them to take action to prevent the next crisis from occurring – thus protecting the public interest.

Global TRs are uniquely positioned to help support financial stability and the integrity of financial makers and provide this public good. First, they can model mark-to-market values and corresponding margin calls daily on *all* positions under multiple, regulator-specified stress scenarios. A single data repository can identify potentially large margin calls under market stress conditions that could be difficult for affected firms to satisfy.

Second, they can track related potential “chain reaction” payment failures across jurisdictions, which may not be visible to any single national or regional authority. For instance, in a currency shock, a US bank may owe several billion dollars in variation (mark-to-market) margin to a European bank, which in turn owes the same amount to a Japanese bank. In this scenario, the European bank may look flat but in reality is in the middle of a potential liquidity squeeze between two other countries.

Third, a centralised TR can ensure that both the public and relevant authorities have an accurate understanding at all times of the overall size of all derivative market positions (“open interest”) and

exposure to the types of market participants that are driving the position taking, and for relevant authorities only the positions of particular market participants.

Fourth, the provision of a public good should not be subject to commercial pressures and sensitivities. The provision of this data is to safeguard the markets and ultimately protect the public interest, which are the investors in these markets. To have such a service provided as a for-profit activity is inconsistent with this mission.

5| GLOBAL POLICY DEBATE: THREATS THAT UNDERMINE THE POTENTIAL VALUE AND UTILITY OF REPOSITORIES

While the value of a single global TR has been demonstrated during the Lehman bankruptcy and other market events since 2008, multiple threats exist that could undermine this model and negatively impact the value of this public good. These threats include:

- divergent national or regional regulations;
- commercialisation of the TR function;
- the absence of globally agreed upon data standards;
- data concentration.

5|1 Divergent national or regional regulation

The enactment of national and/or regional regulations in the global derivatives market will inevitably lead to regulatory gaps and open the door to regulatory arbitrage. Regulatory gaps have the potential to create confusion for participants and can lead to the creation of process-associated risks. This is most evident in the significant differences in regulatory scope and reporting timing in the US and EU markets.

- *US scope and timing*: reporting is only for OTC derivatives with the differentiation of cleared versus un-cleared trades. Reporting is required within thirty minutes of the trade execution.
- *EU scope and timing*: here the scope is all derivatives with the essential differentiation of listed versus

OTC contracts. Mandatory post-trade reporting must be completed by $T+1$.

Divergent regulation will encourage the creation of local and regional TRs to facilitate compliance with local regulation, which ignores the global nature of the derivatives markets. The indemnification provision in the Dodd-Frank Wall Street Reform and Consumer Protection Act, enacted in 2010, serves a classic example of this problem because it encourages non-US regulators to promote the creation of national repositories in order to avoid this part of the law.

5|2 Commercialisation of the trade repository function

Commercial organisations recognise the potential opportunity to create new profit centers by developing services to support industry compliance with regulatory mandates. This dynamic was seen very clearly in the immediate aftermath of the implementation of the Markets in Financial Instruments Directive in Europe, which spurred the creation of a large number of Multi-lateral Trading Facilities to capitalise on the new business opportunity presented by the regulation.

However, the immediate rush by providers to offer a service to support a new regulatory mandate often results in over-capacity. Over time, market forces reduce the number of providers to a number that the market can support. Most recently, we have seen this occur in the number of central counterparties that have been created in response to the G20 drive towards central clearing of derivatives.

In regard to TRs, application of this typical market evolutionary pattern suggests that in the short term, multiple TRs will emerge in the immediate wake of regulatory enactment in each of the global jurisdictions, creating non-centralised and non-harmonised local solutions to a global problem. This will likely be followed by a natural contraction in the number of TRs due to over-supply. As a result, this will create a second problem of consolidation and re-engineering among the remaining providers and regulators. We have already started to see this pattern begin to emerge with the proliferation of repositories in both the United States and the European Union.

5|3 Absence of globally agreed upon data standards

With the likelihood of multiple repositories serving the marketplace, data aggregation will be essential for regulators and the public to have an accurate picture of the marketplace. However, aggregation will be possible only if a global system of data identifiers is developed and agreed upon. At a bare minimum, this includes the establishment of a global legal entity identifier, and universal trade identifier.

5|4 Data fragmentation

The major hurdle to the establishment of a global utility appears to be political in nature. Policymakers and regulators aim to provide level playing fields for all market participants. However, in the case of TRs, where the provision of the service is clearly a public good, a proliferation of repositories would lead to data fragmentation between multiple national and international service providers who, for commercial reasons, would likely have little incentive to work collaboratively in support of market transparency and risk mitigation. With data fragmentation, regulators would find themselves hindered in their ability to quickly and efficiently collect, aggregate and reconstruct market positions across multiple repository providers, particularly in times of market stress when time is of the essence. Any solution that requires data aggregation in order to derive accurate risk information is a sub-optimal result for the policy makers, regulators, market participants and the general public.

5|5 Potential solutions to address issues of data fragmentation

Resolution of the data fragmentation issue requires addressing two key political issues – how to organise

the governance of a global public good and where that public good should be located.

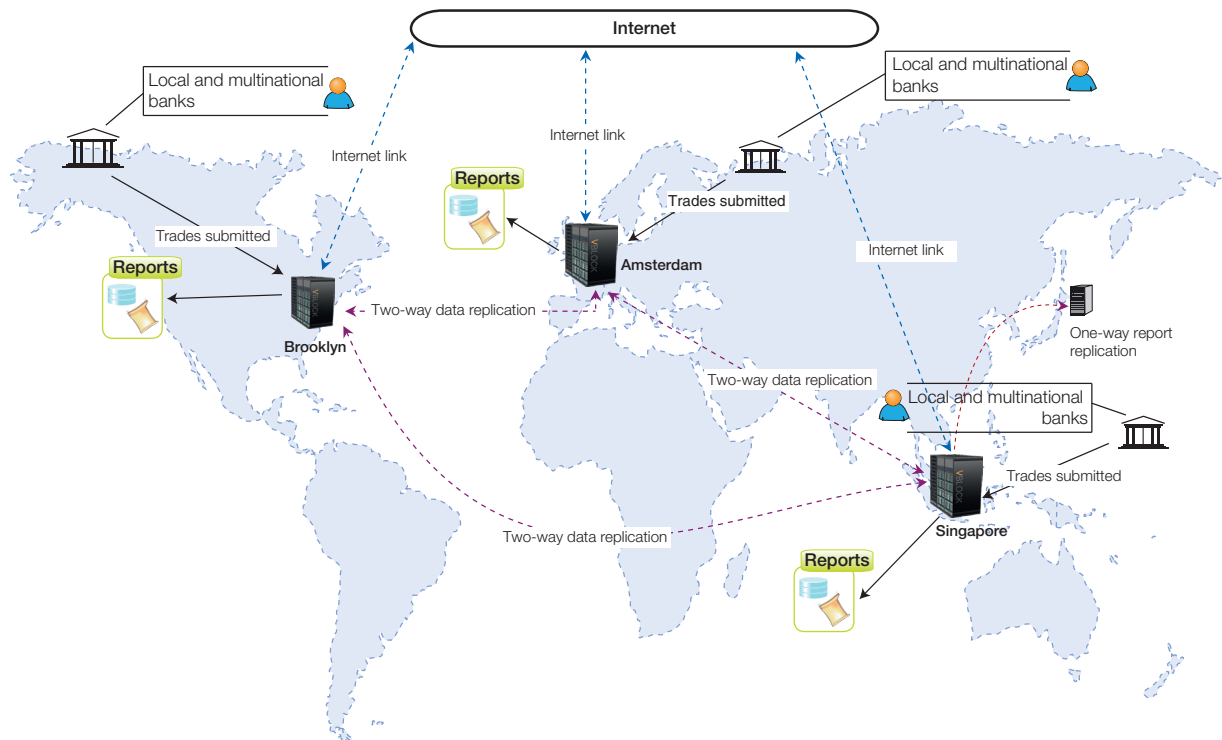
Governance. The governance model for a utilised TR should include appropriate participation of public users, including relevant public institutions, central banks, securities and derivatives regulators and other governing bodies, whether in the form of a public-private partnership or some other structure. To achieve this, international agreements around data access and entitlements to ensure unfettered and unbiased access for all authorities would need to be established. In addition, issues of oversight, funding, cross-border data access for systemic risk data and stress testing methodologies would need to be resolved.

Location. The location of a utilised repository could be addressed by establishing separate data centers and operating companies in the United States, Europe and Asia to ensure local input and output of data in each region and multiple redundancies. In addition, this would allow for distributing the ownership of the global utility.

Alternative solutions. With the development of a single global TR likely to remain a challenge for the next several years, there are three potential structures that would ensure the function and some of the value of a central utility can be preserved in collecting and maintaining a global data set of all OTC derivatives transactions. They are:

- *agency model*: a central global utility works closely with a locally-established TR to ensure the local data set is completed, including data from outside the local jurisdiction. In return, the central utility receives the local data;
- *outsourced model*: a single central utility outsources its operations to other jurisdictions to provide a local TR that is aligned with the global hub;
- *TR of TRs*: a global repository collects and aggregates data from all national or regional repositories.

Figure
“A global trio”



Note: A single TR per asset class per region, operating as 3 faces of a single utility to which the global regulatory community could mandate that common data sets for all similar derivative trades should be reported.

6 | CONCLUSION

The financial services industry is at a turning point in the development of appropriate safety measures for the financial markets. Within the derivatives market specifically, there is a need to recognise that these global markets must be supervised globally. This article has highlighted the challenge, history, function, value and the future of TRs in this new regulatory environment.

Since the 2008 crisis, TRs have evolved to provide many critical functions, including providing transparency into the opaque OTC derivatives market. The ongoing development of this infrastructure will lead to the creation of new tools for regulators and systemic risk managers to more effectively analyse market concentrations and risk distributions in the financial system. Concerns over data concentration or fragmentation and global utilities should not compromise the development of a solution that, at its heart, is a public good.