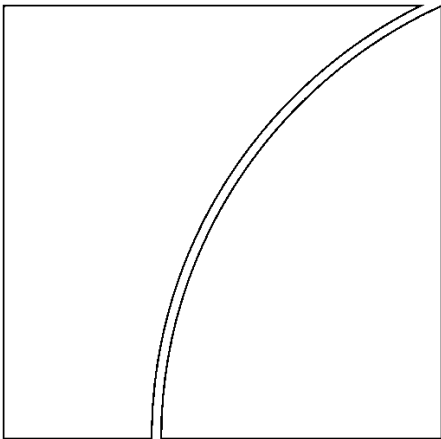


Committee on Payment and  
Settlement Systems

Technical Committee of the  
International Organization of  
Securities Commissions



**Report on OTC derivatives  
data reporting and  
aggregation requirements**

**Final Report**

January 2012



BANK FOR INTERNATIONAL SETTLEMENTS



**OICU-IOSCO**

This publication is available on the BIS website ([www.bis.org](http://www.bis.org)) and the IOSCO website ([www.iosco.org](http://www.iosco.org)).

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ISBN 92-9131-882-5 (print)

ISBN 92-9197-882-5 (online)

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# 1. Foreword and executive summary

## 1.1 Foreword

In September 2009, the G20 Leaders made a number of commitments regarding the operation of over-the-counter (OTC) derivatives markets, including the statement that all OTC derivatives contracts should be reported to trade repositories (TRs) in order to improve transparency, mitigate systemic risk and protect against market abuse in the OTC derivatives markets.<sup>1</sup> At the initiative of the Financial Stability Board (FSB), a working group led by representatives of the Committee on Payment and Settlement Systems (CPSS), the International Organization of Securities Commissions (IOSCO) and the European Commission (collectively, the “OTC Derivatives Working Group”) was formed to make recommendations on the implementation of the G20 objectives.

The FSB adopted the report of the OTC Derivatives Working Group (FSB Report) and submitted it to the G20 finance ministers and central bank governors in October 2010. The FSB Report sets forth 21 recommendations addressing the implementation of the G20 commitments.<sup>2</sup> In particular, Recommendation 19 of the FSB Report recommended that the CPSS and IOSCO, in consultation with authorities and the OTC Derivatives Regulators’ Forum (ODRF),<sup>3</sup> develop both for market participants reporting to TRs and for TRs reporting to the public: (i) minimum data reporting requirements and standardised formats; and (ii) the methodology and mechanism for the aggregation of data on a global basis.<sup>4</sup>

Consistent with the FSB Report, in October 2010 IOSCO formed the Task Force on OTC Derivatives Regulation (“Task Force”) to, among other matters, work jointly with the CPSS to develop reporting and aggregation standards consistent with Recommendation 19 of the FSB Report.<sup>5</sup> This report (the *Report on data reporting and aggregation requirements* or the “Data Report”) addresses that mandate.

The Task Force published a consultative version of the Data Report (“Consultative Data Report”) for a comment period that ran from 23 August 2011 to 23 September 2011. During the consultation process, 32 comments were received, which are available on the websites of both IOSCO<sup>6</sup> and the CPSS.<sup>7</sup> The Data Report incorporates relevant comments received during that process.<sup>8</sup>

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<sup>1</sup> See *Leaders’ Statement*, Pittsburgh Summit of the G20 Leaders, 24–25 September 2009, page 9, available at [http://www.g20.org/Documents/pittsburgh\\_summit\\_leaders\\_statement\\_250909.pdf](http://www.g20.org/Documents/pittsburgh_summit_leaders_statement_250909.pdf).

<sup>2</sup> See FSB, *Implementing OTC derivatives market reform*, 25 October 2010, available at [http://www.financialstabilityboard.org/publications/r\\_101025.pdf](http://www.financialstabilityboard.org/publications/r_101025.pdf).

<sup>3</sup> The ODRF has been formed to provide authorities with a means to cooperate, exchange views and share information related to OTC derivatives central counterparties (CCPs) and TRs. For additional information, see <http://www.otcdf.org/>.

<sup>4</sup> See FSB Report, op cit, page 7.

<sup>5</sup> The CPSS and IOSCO issued their *Report on OTC derivatives data reporting and aggregation requirements – consultative report* (“Consultative Data Report”) in August 2011.

<sup>6</sup> Available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD363.pdf>.

<sup>7</sup> Available at <http://www.bis.org/publ/cpss96/comments.htm>.

<sup>8</sup> It should also be noted that several comments were outside the scope of the report and/or are being addressed by other workstreams.

## 1.2 Executive summary

TRs are entities that maintain a centralised electronic record (database) of OTC derivatives transaction data. By centralising the collection, storage and dissemination of data, TRs can play an important role in providing information that supports risk reduction, operational efficiency and cost savings for both individual entities and the market as a whole. Reporting of OTC derivatives data to a TR enables authorities to ascertain accurate information concerning an OTC derivatives contract shortly after it is entered into, as well as information concerning any changes to the contract throughout its existence. In addition, given their centralised role, TRs are able to provide information on OTC derivatives markets that could serve to: (i) promote financial stability; (ii) assist in the detection and prevention of market abuse; and (iii) enhance the transparency of information to relevant authorities and the public.

This report, consistent with FSB Recommendation 19, specifies minimum requirements for reporting data to a TR and for the reporting by a TR to regulators, as well as types of acceptable data formats. The report also discusses issues relating to authorities' and reporting entities' access to data, and disseminating selected OTC derivatives data to the public while taking into account any confidentiality constraints. Further, this report addresses data aggregation mechanisms and tools needed to enable authorities to aggregate data in a manner that fulfils their regulatory mandates, including methods, rationale and possible tools to implement data aggregation such as legal entity identifiers. Finally, this report makes recommendations in each of these areas, as summarised below:

- **Minimum data reporting requirements:** The Task Force recommends that, at a minimum, transaction-level data be reported to TRs and that such data include at least transaction economics, counterparty information, underlier information, operational data and event data. The Task Force found that certain information, such as that contained in master agreements and credit support annexes, will be helpful for assessing systemic risk and financial stability but that at present such information is not supported by TRs. The report includes various recommendations as to how to bridge these data gaps. The FSB's October progress report advocated setting up a small ad hoc experts group to define from the "demand side" what data are needed to bridge data gaps for: (i) assessing systemic risk and financial stability; (ii) supervising market participants; and (iii) conducting resolution activities.<sup>9</sup>
- **Access to data:** The report notes that defining general principles or guidance on whether a type of authority (eg market regulators, central banks, prudential supervisors and resolution authorities) should have access to the relevant part or the whole range of data reported to TRs, in accordance with the authority's mandate, would be a significant step towards facilitating authorities' effective and practical access to data but is beyond the assigned scope of the report. The Task Force recommended in the Consultative Data Report that this responsibility be assigned by the FSB to an appropriate body or group for timely resolution. The FSB's October progress report advocated that the CPSS and IOSCO, coordinating with relevant authorities, take forward work on authorities' access to TR data, taking into account data security and building on work that has been done by the ODRF. The report also recommends that TRs implement measures to provide effective and practical access to authorities both for routine data to help them fulfil their responsibilities, as well as for non-routine access in order to permit the authorities to address specific issues that might arise from time to time. In addition, the report

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<sup>9</sup> FSB, *OTC derivatives market reforms – progress report on implementation*, October 2011, available at [http://www.financialstabilityboard.org/publications/r\\_111011b.pdf](http://www.financialstabilityboard.org/publications/r_111011b.pdf).



recommends that reporting entities and counterparties should have appropriate access to their own data, subject to confidentiality and other legal requirements. Finally, the report notes that public dissemination of data promotes understanding of the functioning of OTC derivatives markets by all stakeholders and facilitates the exercise of market discipline and investor protection. Public dissemination of TR data could be done in aggregated form or, alternatively, the TR may be required in some jurisdictions to disseminate information to the public in a more granular form with the same regard for applicable confidentiality requirements. Data publicly disseminated by TRs should include information to facilitate an assessment of market activity and concentration of the market.

- **Methodology and mechanism for aggregation of data:** As mechanisms for aggregation of data, the report recommends creation of a system of legal entity identifiers (LEIs), continued international consultation regarding implementation of LEIs, and international work to develop an international product classification system for OTC derivatives.
- **International LEI development and principles:** The report notes that a system of LEIs would be an essential tool for aggregation of OTC derivatives data, and recommends the expeditious development and implementation of a standard LEI capable of achieving the data aggregation purposes discussed in the report. The report notes the current industry efforts towards creation of such an LEI system. To promote timely development of an LEI system suitable for international use, the Task Force recommends that the industry process include development of an LEI standard and issuance of LEIs under the auspices of an organisation with international membership and appropriate governance that develops and publishes international standards for the financial sector. The Task Force recommends that TRs support the establishment of the LEI system through active participation in development efforts and use of the system once it becomes available. The Task Force further recommends that LEIs follow a set of basic principles that address key functions or attributes of an LEI system needed to allow the LEI to support the data aggregation purposes discussed in the report: uniqueness, neutrality, reliability, open source and extensibility. To promote harmonisation of legal requirements for LEI use across different jurisdictions as phased implementation occurs, national authorities issuing or considering legislation or regulations involving LEIs should take these basic principles into account. The Task Force also addresses fundamental aspects of the governance of the LEI system.
- **Continued international consultation regarding LEI implementation:** The report notes that establishment of a universal LEI would require an international approach to implementation, and that further international consultation would be beneficial in this regard. As noted in the report, such further work is in progress. In September 2011, an LEI workshop took place in Basel, Switzerland, under the auspices of the FSB, with more than 50 private sector experts and over 60 representatives from the regulatory community participating. The G20 Leaders, at their November 2011 meeting in Cannes, France, declared support for the creation of a global LEI and called upon the FSB “to take the lead in helping coordinate work among the regulatory community to prepare recommendations for the appropriate governance framework, representing the public interest, for such a global LEI” by the next G20 Summit.<sup>10</sup> In response to this mandate, at its December 2011 meeting the FSB

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<sup>10</sup> See Cannes Summit Final Declaration, 4 November 2011, paragraph 31, available at <http://www.g20.org/Documents2011/11/Cannes%20Declaration%204%20November%202011.pdf>.

Steering Committee created a time-limited, ad hoc expert group of authorities to carry forward work on key outstanding issues relevant to implementation of a global LEI, in order to fulfil the G20 mandate.

- **Development of a standard international product classification system:** The Task Force recommends that CPSS-IOSCO or the FSB make a public statement calling for timely industry-led development, in consultation with authorities, of a standard product classification system that can be used as a common basis for classifying and describing OTC derivative products. Therefore, the Task Force recommends that the FSB direct, in the form and under the leadership the FSB deems most appropriate, further consultation and coordination by financial and data experts drawn from both authorities and industry, on a timely basis, concerning this work.

## 2. Introduction

The first part of this section addresses the role that TRs are expected to play in the ongoing reform of the OTC derivatives markets and efforts to collect adequate data on OTC derivatives markets. The second part of this section gives an overview of the current implementation of TRs. The third part defines the scope of this Data Report.

### 2.1 The role of TRs in the implementation of OTC derivatives market reform

As highlighted by the CPSS and IOSCO, measures to enhance market transparency are particularly important for OTC derivatives markets, given their decentralised structure and the still-developing state of trading infrastructure.<sup>11</sup> In addition, the lack of adequate information on OTC derivatives exposures is widely seen as having exacerbated a number of corporate distress situations in the recent crisis, including the demise of Lehman Brothers and the near default of AIG and Bear Stearns.

At the Pittsburgh Summit in September 2009, G20 Leaders agreed that OTC derivatives contracts should be reported to TRs, in response to the lack of adequate information available during the crisis. This recommendation was aimed at ensuring the collection, maintenance and reporting of comprehensive data for all OTC derivatives “to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse”.<sup>12</sup>

TRs are entities that maintain a centralised electronic record or database of OTC derivatives data.<sup>13</sup> By centralising the collection, storage and dissemination of data, TRs can play an important function in providing information that supports risk reduction, operational efficiency and cost savings for both individual entities and the market as a whole. Reporting OTC derivatives data to a TR enables authorities to have accurate information concerning an OTC derivatives contract shortly after it is entered into, as well as information concerning any changes to the contract throughout its existence. In addition, given their centralised role, TRs are in a position to provide information on OTC derivatives markets that could serve to:

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<sup>11</sup> See CPSS-IOSCO, *Principles for financial market infrastructures – consultative report*, March 2011, Annex E, available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD350.pdf> and <http://www.bis.org/publ/cpss94.pdf>.

<sup>12</sup> See *Leaders’ Statement*, op cit, page 9.

<sup>13</sup> In some jurisdictions, reporting to TRs may also be used and/or become mandatory with respect to data related to transactions executed on regulated markets.

(i) enhance the transparency of information to relevant authorities and the public; (ii) promote financial stability; and (iii) assist in the detection and prevention of market abuse.

## 2.2 Initiatives to create TRs

The first TRs were established in the mid-2000s. Following the G20 Leaders' commitment, the development of TRs for different asset classes has accelerated. In this context, initiatives have been launched by the International Swaps and Derivatives Association (ISDA)<sup>14</sup> to facilitate the recording of OTC derivatives at the global level for four major classes of OTC derivatives: interest rate derivatives, equity derivatives, credit derivatives and oil derivative instruments. The ISDA's TR selection process includes a request-for-proposal procedure and follows a framework<sup>15</sup> derived from commitments made to the primary regulators of the major dealers who compose the OTC Derivatives Supervisors Group (ODSG).<sup>16</sup>

The Trade Information Warehouse and the Equity Derivatives Reporting Repository, operated by two subsidiaries of the Depository Trust & Clearing Corporation (DTCC), have been selected using this process and currently collect data on credit derivatives and equity derivatives, respectively, with reporting done by the G14 dealers.<sup>17</sup> The ISDA's Rates Steering Committee also selected DTCC in March 2011 to develop a repository serving the OTC interest rate derivatives markets, although in 2009 it initially selected the Interest Rate Repository, operated by TriOptima and currently operational, for this task.<sup>18</sup>

Following a public request made by the IOSCO Commodity Task Force and the ODSG, industry participants, under the auspices of the ISDA Industry Governance Committee, and in consultation with public authorities, have begun to develop proposals for TRs in the commodity derivatives markets. The ISDA announced on 14 June 2011 that the ISDA Commodities Steering Committee has chosen DTCC Deriv/SERV and EFETnet to partner the Committee at the next stage of development of the commodity derivatives trade repository. The ISDA expects the TR to be operational by the first quarter of 2012.

Other initiatives are under way. The creation of a TR for foreign exchange derivatives is also being considered by regulators and the industry. In that respect, the Global Foreign Exchange Division of the Association for Financial Markets in Europe (AFME), the Securities Industry and Financial Markets Association (SIFMA) and the Asia Securities Industry &

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<sup>14</sup> ISDA members include "most of the world's major institutions that deal in privately negotiated derivatives, as well as many of the businesses, governmental entities and other end users that rely on over-the-counter derivatives to manage efficiently the financial market risks inherent in their core economic activities". See <http://www.isda.org>.

<sup>15</sup> The ISDA's decision-making process relies on a three-layered structure comprising: the ISDA Industry Governance Committee (layer 1); the six Steering Committees (layer 2), including four related to individual asset classes (Rates, Equity, Credit, Commodities) and two at the cross-product level (Operations and Collateral); and the implementation layer (layer 3). The selection of a given TR by the ISDA is made at the Steering Committee level. Steering Committee members are major dealers and representatives from the buy-side community. The decision-making process for any decision taken by a Steering Committee favours the consensus approach; however, a voting process can be applied when appropriate. For additional information, see [http://www.isda.org/c\\_and\\_a/pdf/Industry-Governance.pdf](http://www.isda.org/c_and_a/pdf/Industry-Governance.pdf).

<sup>16</sup> The ODSG gathers the prudential supervisors of the major OTC derivatives dealers for coordination regarding major industry initiatives in the OTC derivatives market. For additional information, see [http://www.newyorkfed.org/markets/otc\\_derivatives\\_supervisors\\_group.html](http://www.newyorkfed.org/markets/otc_derivatives_supervisors_group.html).

<sup>17</sup> The G14 dealers are the 14 largest dealers in OTC derivatives, namely Bank of America, Barclays, BNP Paribas, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan Chase, Morgan Stanley, Royal Bank of Scotland, Société Générale, UBS and Wells Fargo.

<sup>18</sup> The main characteristics of the three major TRs currently active, as well as the statistics reported to the TRs and disseminated by the TRs to market stakeholders, are provided in Annex 1.

Financial Markets Association (ASIFMA) have announced their recommendation to partner DTCC/SWIFT to develop such a TR.<sup>19</sup> Moreover, other TRs with a national or regional reach are under way or currently active, such as REGIS-TR, a TR created by the Spanish stock exchange (Bolsas y Mercados Españoles) and Clearstream Banking Luxembourg. Another example is the TR that has been in operation since 1994 in Brazil and has been collecting data on all derivatives contracts. In fact, local regulation in Brazil requires that all OTC derivatives transactions must be registered with self-regulatory TRs.

It is important to note that the current landscape will further evolve in the different regions of the world. The result may be the establishment of additional TRs with global, regional or national reach, without precluding the possibility of having TRs operated by the public sector.

### **2.3 Scope of the Data Report**

In line with Recommendation 19 of the FSB Report and taking into account the recent developments in the legislative environment, this Data Report aims to specify the minimum data reporting requirements for reporting to TRs and for TRs reporting to regulators, as well as general guidance in terms of data formats.

This Data Report also discusses the opportunity and possibility of disseminating selected OTC derivatives data to the public while at the same time taking into account confidentiality constraints.

This Data Report further explores data aggregation mechanisms and tools needed to enable authorities to aggregate data in order to fulfil their mandates. The report considers different aspects of the aggregation of data, including: (i) methods and rationale for data aggregation; and (ii) tools for data aggregation, including legal entity identifiers, product classification and trade identifiers.

This Data Report does not attempt to set international regulatory risk management standards for TRs. Such standards have been considered by the CPSS-IOSCO report on *Principles for financial market infrastructures*, which is currently being finalised after a public consultation that ended on 29 July 2011.<sup>20</sup> That report sets forth a single, comprehensive set of 24 standards (called “principles”) that are designed to ensure that the essential infrastructure supporting global financial markets is more robust and thus better able to withstand financial shocks than at present. The principles are designed to apply to all systemically important payment systems, central securities depositories, securities settlement systems, CCPs and TRs (collectively, “financial market infrastructures” or “FMIs”). These FMIs record, clear and settle transactions in financial markets. This CPSS-IOSCO report includes, in particular, Principle 24 on disclosure of market data, which sets forth a number of requirements relevant for a TR to provide timely and accurate data to authorities and the public (processes and procedures to provide data, information systems, and forms of disclosure).

The Data Report has taken into consideration other initiatives, including the recommendations set out in the forthcoming report of the FSB Data Gaps and Systemic Linkages Group, as well as the work of the ODSG and of the ODRF.

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<sup>19</sup> See AFME-SIFMA-ASIFMA, “Global FX Division announces trade repository partner for foreign exchange industry”, 7 November 2011, available at <http://www.afme.eu/WorkArea/DownloadAsset.aspx?id=5596>.

<sup>20</sup> See CPSS-IOSCO, *Principles for financial market infrastructures – consultative report*, March 2011, available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD350.pdf> and <http://www.bis.org/publ/cpss94.pdf>.

### 3. Data reporting requirements for OTC derivatives

A major lesson learned from the financial crisis of 2007–09 is that limited information about OTC derivatives was available to regulators and policymakers. Recognising that the lack of comprehensive data on OTC derivatives severely constrained the ability of regulators to fashion appropriate policy responses during that period of market stress, as regulators did not have a clear view of the positions of market participants, the G20 in 2009 mandated that all OTC derivatives contracts be reported to TRs.<sup>21</sup> Following this commitment, the FSB Report recommended that the CPSS and IOSCO, in consultation with authorities and the ODRF, develop both for market participants reporting to TRs and for TRs reporting to the public and to regulators: (i) minimum data reporting requirements and standardised formats; and (ii) the methodology and mechanism for the aggregation of data on a global basis.<sup>22</sup>

This section begins by setting out the objectives for the reporting of data on OTC derivatives to TRs, and then discusses the types of data required to meet those objectives. The section also deals with standardised reporting formats as well as different approaches to the collection and reporting of such data.

#### 3.1 Reporting to TRs

##### 3.1.1 Objectives

While recognising that financial authorities have varied data needs that may evolve over time according to their respective mandates, the FSB Report noted that such mandates or objectives include: (i) assessing systemic risk and financial stability; (ii) conducting market surveillance and enforcement; (iii) supervising market participants; and (iv) conducting resolution activities.<sup>23</sup>

Accordingly, the reporting of OTC derivatives data to TRs needs to be sufficient in its scope and must take into consideration the objectives set by authorities. Such reporting of data would lead to better supervision of the OTC derivatives markets and would facilitate well informed policymaking. For example, such data might contribute to the process of determining the suitability of OTC derivatives eligible for central clearing. At the same time, it is important to note that, in the early stages of their development, TRs may not be in a position to collect all the data required for fulfilling the various mandates/objectives of authorities.

As OTC derivatives are one among a multitude of financial products traded by market participants, it may be pertinent to clarify that, for effective fulfilment of their mandates or objectives, authorities would need to have access to multiple sources of market information, including data stored in TRs.

It should also be noted that currently, in some jurisdictions, there are other channels for reporting OTC derivatives data to authorities. For instance, in the European Union, a transaction reporting system has been established under the Markets in Financial Instruments Directive, with the main purpose of facilitating detection of market abuse.<sup>24</sup> The system works based on a direct report from investment firms to competent authorities, and

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<sup>21</sup> See FSB Report, op cit, page 8.

<sup>22</sup> Ibid, page 7.

<sup>23</sup> Ibid, page 6.

<sup>24</sup> See Committee of European Securities Regulators, *CESR Level 3 Guidelines on MiFID transaction reporting*, ref: CESR/07-301, May 2007, available at [http://www.cmvm.pt/CMVM/Cooperacao%20Internacional/Docs\\_ESMA\\_Cesr/Documents/07\\_301.pdf](http://www.cmvm.pt/CMVM/Cooperacao%20Internacional/Docs_ESMA_Cesr/Documents/07_301.pdf).

reporting channels can be used by investment firms to comply with the transaction reporting obligation. This system has been recently extended on a voluntary basis to certain OTC derivatives transactions. Notably, there may be circumstances where authorities use alternative mechanisms, in addition or complementary to TRs, to gather information necessary to achieve their objectives. It is important to emphasise that the availability of these alternative channels to authorities does not in any way diminish the obligation of counterparties to report data to TRs, so that they continue to be appropriately available to other regulators.

### 3.1.1.1 Assessing systemic risk and financial stability

“Systemic risk” was defined by the G10 in 2001 as “the risk that an event will trigger a loss of economic value or confidence in, and attendant increases in uncertainty about, a substantial portion of the financial system that is serious enough to quite probably have significant adverse effects on the real economy”.<sup>25</sup> In other words, it is a risk that may impair financial stability.

As noted in the FSB Report:

“The recent financial crisis exposed weaknesses in OTC derivatives markets that had contributed to the build-up of systemic risk. These weaknesses included the build-up of large counterparty exposures between particular market participants which were not appropriately risk-managed; contagion risk arising from the interconnectedness of OTC derivatives market participants; and the limited transparency of overall counterparty credit risk exposures that contributed to the loss of confidence and market liquidity in time of stress.”<sup>26</sup>

Concepts for identifying and measuring systemic risk arising from major financial institutions are still under development, given the inherent analytical challenges in developing appropriate frameworks. However, the significant work that has been conducted on this issue since the financial crisis by the FSB, the International Monetary Fund and the Bank for International Settlements has identified a number of key elements that are relevant to assessing the systemic relevance of financial institutions, including their absolute size, lack of substitutability, and interconnectedness with other financial institutions.<sup>27</sup> In addition, the three bodies have found that systemic risk concentration arising from similar types of exposures across financial institutions should be considered.<sup>28</sup>

IOSCO has published a discussion paper on the role of securities regulators with regard to systemic risk which especially identifies transparency and disclosure as important tools for dealing with systemic risk.<sup>29</sup> These tools have application in various areas, including product transparency and financial sector stress tests. Specifically with regard to OTC derivatives, the report states that “the use of trade repositories and centralised clearing of derivatives contracts would have allowed regulators and market participants to identify accumulations of

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<sup>25</sup> See G10, *Report on consolidation in the financial sector*, at 126, January 2001, available at <http://www.bis.org/publ/gten05.pdf>.

<sup>26</sup> FSB Report, op cit, page 1.

<sup>27</sup> See FSB-IMF-BIS, *Report to G20 Finance Ministers and Governors – Guidance to assess the systemic importance of financial institutions, markets and instruments: initial considerations*, November 2009, available at [http://www.financialstabilityboard.org/publications/r\\_091107c.pdf](http://www.financialstabilityboard.org/publications/r_091107c.pdf).

<sup>28</sup> See FSB-IMF-BIS, *Macroprudential policy tools and frameworks – Update to G20 Finance Ministers and central bank Governors*, February 2011, available at <http://www.imf.org/external/np/g20/pdf/021411.pdf>.

<sup>29</sup> See IOSCO, *Mitigating systemic risk: a role for securities regulators*, discussion paper of the Technical Committee of IOSCO, available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD347.pdf>.

risks at financial institutions, such as AIG, and to check that these risks were being managed and insured against adequately”.

Against this background, to assess potential systemic risk, authorities would need to aggregate data on, inter alia: (i) each entity’s current gross exposure and exposure net of collateral (in order to assess both the absolute size of its exposures and its relative importance for the markets under consideration); (ii) each entity’s current gross exposure and exposure net of collateral to each of its major counterparties (in order to quantify interconnectedness); and (iii) aggregate exposures of all counterparties in terms of specific asset classes, products, currencies, reference entities and underlying sectors. Such data would help authorities assess the potential knock-on effects of financial distress at any one institution and identify concentrations of risk among groups of closely related institutions.<sup>30</sup>

Measuring counterparty exposure, in turn, would require data regarding bilateral positions, market values of open positions, netting arrangements, collateralisation and disposition and valuation of collateral. Determining bilateral positions would require data on the full set of open trades between a pair of counterparties and their economic characteristics, including all terms that are required to calculate and assign a value to a trade such as effective and termination dates, notional amounts, underlier reference data, counterparty information, coupon amounts and schedules, and other salient economic terms specific to individual types of transactions (eg restructuring clauses for credit default swap (CDS) contracts and reference interest rates for interest rate swaps). Determining the effect of netting arrangements would require data on the set or sets of positions whose gains and losses can be netted against one another in determining amounts owed to any counterparty. While market value refers to the current replacement cost of open positions, collateral refers to the value of collateral posted to cover exposure.

Existing TRs, with reporting by major dealers (see [Annex 1](#)), do not track and report market values of open positions with regular frequency. Further, determining information about collateral poses its own unique challenges: the location of collateral can change over the life of the contract; collateral is generally collected on a bilateral portfolio basis and may not be transaction-specific; collateral may be invested on a term basis in domestic or cross-border markets; and arriving at a proper valuation of collateral may be difficult. In addition, collateral information is generally available from entities providing custodial services.

Another difficulty of using TRs for determining current exposure arises from the fact that existing major TRs are organised along asset class lines while counterparty risk is managed at the bilateral portfolio level. For example, in computing current exposure, gains in a counterparty’s position in one derivative product may be netted against losses in another derivative product. Thus, if asset class-based TRs were used as information sources for determining current exposure, authorities would have to look across TRs in multiple asset classes in order to build portfolios and furthermore would have to obtain information about the netting arrangements applicable to those portfolios.

Some of these challenges, however, can be addressed. For instance, information on market values may be sourced from CCPs for those OTC derivatives that are standardised and centrally cleared. For data on bilateral positions, as a first step, a system of common identifiers may be put in place (as discussed in Section 4 of this report) within the TR structure to enable authorities to aggregate position data held in multiple TRs.

It is, however, important to bear in mind that TRs as currently implemented would be unable to provide a complete set of information for determining current exposures, and that some

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<sup>30</sup> See Section 4.2 for a discussion of methods of aggregation that may assist authorities in assessing systemic risk.

data gaps would still remain. For example, gathering information about collateral and reliable market value for non-cleared OTC derivatives is a challenge. Similarly, it is challenging to create an effective system for capturing information on bilateral netting arrangements. Many of these issues are further discussed in Section 3.1.4, “Potential data gaps”.

### 3.1.1.2 *Conducting market surveillance and enforcement*

Market integrity is critical for the proper functioning of any market. Integrity of the market is maintained through a combination of factors, such as promoting commercial standards of fair dealing, as well as surveillance, inspection, investigation and enforcement of relevant laws and rules, including those related to the disclosure of information to the market.<sup>31</sup>

Market surveillance, in particular, plays a significant role in anticipating a market’s potential vulnerabilities and protects the integrity of markets by monitoring whether trading is fair and transparent. It is a pre-emptive measure to ensure investor confidence and is aimed at detecting and deterring potential market abuse as well as avoiding disruptions to the market from anomalous trading activity, including market and price manipulation, insider trading, market rigging and front-running.<sup>32</sup>

There is a combination of data that is needed for regulators to conduct market surveillance. Time-stamped trade information (including price and volume) and counterparty and underlier information would be required to identify and detect unusual or improper trading activities, to analyse trading patterns and to monitor for abnormal price and volume movements. This type of information is already required to be collected in some jurisdictions with regard to financial instruments permitted to trade on regulated markets and may be useful with regard to OTC derivatives too.

Detection of circular (matched) or wash trades or other types of market manipulation would not only involve identification of a series of unusual or improper trades, but also information regarding the underlying products, prices, and the exact times at which transactions took place. Specifically, if regulators suspect entities to be involved in circular (matched) or wash trades for manipulation purposes, they need to identify the actual trades between the entities, which can be established with the help of legal entity identifiers (see Section 4.5) and a product classification system. Entities that trade through affiliates can be identified using counterparty reference data, which may have information regarding parent-subsiary/affiliate relationships.

Similarly, to identify insider trading cases involving trading on the basis of material, non-public information, authorities need to identify the trading entities, ascertain how they might have material non-public information about the product or underlier and compare the chronology of the trade events against the chronology of relevant corporate events (eg when the material information was made public).

At an aggregate level, trade data across different OTC derivative products and across different TRs would help ensure tracking of positions of large traders and help to monitor open positions and concentration of trading across products, and across markets or trading venues (ie derivatives and cash markets of the underliers). However, information in a TR is only one channel of gathering necessary information.

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<sup>31</sup> See IOSCO Emerging Markets Committee, *Approaches to market surveillance in emerging markets – final report*, December 2009, page 5, available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD313.pdf>.

<sup>32</sup> Ibid.



### *3.1.1.3 Supervising market participants*

Supervision of market participants can broadly be referred to as enforcement of rules and regulations and risk-based oversight of a firm's activities. Supervision can take various forms, ranging from monitoring prudential requirements to imposing constraints on risk-taking or supervising compliance with conduct of business rules to ensure that participants act in a fair and transparent manner. Supervision thus facilitates the financial well-being and health of market participants and, in turn, stability of the financial system.

For monitoring a firm's risk-taking activity, information that provides an accurate reflection of the firm's trading activities and positions is needed. This would require data quantifying and characterising the firm's risk-taking activity, including counts of trades, notional amounts, and gross and net exposures. These data should be sufficiently granular to identify activities and positions vis-à-vis individual counterparties.

Data to monitor concentration ratios and position limits may be required, as these are tools which some authorities use for imposing constraints on risk-taking. For example, for monitoring compliance with position limits, data with regard to exposure of a market participant to the underlying product in question need to be made available, and a system for aggregation of such data across TRs also needs to be put in place. To achieve this, at a minimum, the notional value of each contract along with the product classification would be required.

Supervision of market participants requires information about trading with interconnected or related entities, information about market participants' trading practices, and compliance with the rules and regulations as prescribed by the authorities.

Information about trading with interconnected/related entities, in turn, would necessitate the establishment of a structure for identification of participants to ensure that participants do not mask their identity by using multiple identifications across TRs or to ensure that market participants are clearly associated with transactions and positions in OTC derivatives. Similarly, a structure for identification of different OTC derivative products is also required to achieve the objective of aggregation of trade data across TRs. Such a system for identification of participants (legal entity identifiers) and products (product identifiers) is detailed in Section 4 of the Data Report.

### *3.1.1.4 Conducting resolution activities*

Resolution is required in the event of a counterparty failure. Such failures, by and large, can have an adverse impact on clearing or settlement activity and may have a destabilising impact on the financial system. Authorities, depending on their respective legal framework, may need to obtain access to and monitor appropriate data to facilitate resolution activities.

Carrying out resolution involves ascertaining the obligations of the defaulting entity towards different counterparties and thereafter settling the claims of those counterparties with disposable collateral using a transparent and non-discriminatory set of rules. To that end, authorities need to identify all the trades of the defaulting entity, identify all the counterparties to the above-mentioned trades with the help of counterparty information, and have information on bilateral netting agreements, transaction economics, etc, to determine counterparty exposure. Further, information on collateralisation and on collateral itself is required.

Besides the quantitative data requirements, facilitation of resolution activities would require information about collateral support agreements among stakeholders to amicably settle multiple claims on collateral at the time of resolution. Even with such information, certain issues are bound to be encountered while carrying out resolution activities. As collateral would generally be on a portfolio basis and not transaction-specific, liquidation of the same for carrying out resolution activity related to a transaction increases the risk component of other positions in the portfolio and may even have an adverse impact on their market prices.

### 3.1.2 Data reporting requirements

From the foregoing, it is apparent that comprehensive data about OTC derivatives, with varying levels of granularity, is necessary to achieve the different objectives or mandates of various authorities. For instance, while market-wide- or “aggregate”-level or participant-level data may be useful for assessing systemic risk and monitoring financial stability, participant-level or transaction-level data may be helpful for the purpose of supervision of market participants and for conducting market surveillance.<sup>33</sup> At the same time, it is important to note that, ultimately, data reporting requirements must align with the needs of the authorities.

Transaction-level data depict unitary economic relations between two counterparties and can be summed up in a number of ways to produce either participant-level or market-wide-level data. Different levels of granularity required by authorities can be achieved by reporting transaction-level data; such data should include transaction economics (primary economic terms), counterparty information, underlier information, operational data and event data.

#### *Data reporting approaches*

There can be two approaches to specifying the content of data that needs to be reported to meet the different objectives/mandates of authorities. These are: (i) the functional approach; and (ii) the data field approach.

##### *3.1.2.1 Functional approach*

In the functional approach, broad functional categories are specified based on which data are reported. It is a flexible approach that does not require mandating specific data fields for the myriad OTC derivatives contracts and products, each with its own unique contractual characteristics.

For OTC derivatives, a non-exhaustive list of functional data categories could include:

1. Operational data – data used by a TR for internal management purposes that may include transaction number, participant account number, etc, and other information related to whether the transaction is electronically platform-traded, electronically matched and confirmed, and centrally cleared.
2. Product information – information that allows for the classification or identification of the instrument.
3. Transaction economics – the material terms of a transaction, including effective dates, termination dates, notional amounts, coupon amounts and payment schedules.
4. Valuation data – information concerning the value of a transaction which could come from various sources (eg one counterparty’s mark) and could be used for various purposes (eg calculating replacement cost).
5. Counterparty information – information required to uniquely identify an entity as the counterparty to a transaction, information regarding attributes of counterparty entities such as registered office address, entity type, parent organisation and country of domicile (this could be accessed using a universal legal entity identifier).
6. Underlier information – a unique code for identifying underliers and various attributes of the underliers such as registering authority, security type and country of issuer.

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<sup>33</sup> See the definition of “Participant Level” and “Aggregate Level” in ODRF, *Trade repository market data: concepts and vocabulary*, August 2010, available at <http://www.otcdf.org/documents/traderepositorydataconceptsandvocabulary.pdf>.

7. Event data – information that records the occurrence of an event and includes a timestamp (which indicates precisely when a particular event occurred).

Expressing transaction data in functional form, however, poses a challenge in terms of data aggregation, as, even for the most standardised OTC derivatives, counterparties may have differing notions about matching content that needs to be reported under the different functional categories. This issue becomes even more challenging for bespoke or exotic OTC derivatives transactions.

#### *3.1.2.2 Data field approach*

In the data field approach, standardised data fields for different OTC derivatives are specified explicitly. However, a wide variety of OTC derivative products exist that are materially different from each other. For instance, the data fields required for the reporting of an interest rate swap contract would differ from the data fields required for a currency derivative or a commodity derivative. Further, even within each of the different OTC derivative products, there exists a variety of contracts with different contractual characteristics. Specifying standardised data fields for each such unique contract/product poses a tremendous challenge. At best, one can probably specify minimum, standardised data fields for only broad categories of OTC derivative products. It may, however, be noted that even these standardised data fields may change over time due to the evolving nature of OTC derivative products.

An illustrative list of potential data fields for interest rate swaps, credit swaps, and foreign exchange, commodity and equity derivatives, all of which together account for more than 70% of the total notional value outstanding of all OTC derivatives as of the end of July/December 2009,<sup>34</sup> is provided in [Annex 2](#). These data sets are for illustration purposes only (in order to demonstrate the granularity and complexity involved) and are not prescriptive in nature.

#### *3.1.2.3 Combined approach*

The concern relating to data aggregation associated with the functional approach may be addressed by the reporting of specified, minimum data elements in standardised data field form, while the difficulty relating to capturing varying characteristics of different OTC derivatives contracts / derivative products associated with the data field approach can be addressed by the flexibility that the functional form provides.

Considering the above, data reporting needs might be met through a combination of these two approaches, wherein broad functional categories are defined and minimum, standardised data fields are specified within each such category.

For instance, the functional category of transaction economics could include the following minimum standardised data fields: effective dates, termination dates, notional amounts, coupon amounts, payment schedules and referenced underliers. Similarly, the functional category of counterparty reference data could include minimum data fields such as entity type, registered office address, parent organisation and country of domicile.

An illustrative list of potential broad functional categories, with each of those categories populated with minimum data fields, is provided in [Annex 2](#).

### **3.1.3 Data collection approaches**

OTC derivatives contracts are often active over long periods of time during which one or more of the terms of the contract might be altered before expiration. In order for a TR to

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<sup>34</sup> See FSB Report, op cit, page 24 (“Estimated percentages of OTC derivatives on CCPs”).

maintain up-to-date information, the material economic details of the transaction must be collected not only at inception but also at any time that a material term of the contract changes during its existence.

Data reporting over the existence of an OTC derivatives contract can follow either of two approaches: (i) the life cycle approach; or (ii) the snapshot approach.<sup>35</sup>

#### **3.1.3.1 Life cycle approach**

In the life cycle approach, the details of the transaction are reported at inception and for subsequent events (eg amendment,<sup>36</sup> assignment, active termination) that affect the terms of the contract as they occur until the expiry or scheduled termination of the contract. While this approach is suitable for the reporting of data on those events that occur at discrete times, it is less suited for reporting current data on continuously evolving variables such as market values.

#### **3.1.3.2 Snapshot approach**

In the snapshot approach, details of the transaction are reported at its inception, followed by periodic full updates of the current state of the contract, which include all changes that have happened to the contract since the previous update, as well as current market values. This approach does not require specifying or prescribing the various events that require the updating of data. Under this approach, the entire open positions of an entity, whether or not they have undergone any change, are reported to a TR. However, this approach requires synchronisation by the TR of the data reported in each update with the data previously reported for the transaction.

### **3.1.4 Potential data gaps**

#### **3.1.4.1 Sources of potential data gaps**

TRs provide a valuable source of data for authorities and market stakeholders. Mandatory reporting to TRs will thus contribute to improving transparency and ultimately market functioning. However, the role of TRs is limited by a certain number of constraints, which restrict the role of these infrastructures as data providers. First, TRs currently provide information on only OTC derivatives, consistent with the commitments of the G20, which require the mandatory reporting of OTC derivatives. Given that almost all counterparties have additional non-derivatives contracts (eg “normal” loan activities) with each other, TR data provide only a partial picture of interconnectedness and concentration risks. Second, TRs are currently envisioned as being transaction repositories. This approach excludes, from the scope of the data recorded, information such as that contained in master agreements and credit support annexes as well as data related to exchanges of payments or collateral or valuation data coming from external sources. The collection of this information, which would facilitate detection and consideration of possible links between trading counterparties, is not currently supported by TRs.

In particular, this additional information, which at present is beyond that reported to TRs, may be relevant for data aggregation efforts based on legal entity identification or systems of product classification. As explained in Section 4.2, the aggregation of data is fundamental for providing authorities with accurate information that would help authorities in carrying out their mandate to meet the financial stability objectives stated by the G20. Such information is not

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<sup>35</sup> See Commodity Futures Trading Commission, *Swap data recordkeeping and reporting requirements*, ref: 75 FR 76573, 8 December 2010, available at <http://www.cftc.gov/ucm/groups/public/@lrfederalregister/documents/file/2010-30476a.pdf>.

<sup>36</sup> “Amendment” refers to a revision of the original economic terms of a contract.

currently contemplated to be captured by TRs. However, possible options to address data gaps, existing or potentially developed in the future, could be envisaged to fill in these gaps.

The following subsection identifies three major potential data gaps regarding the availability of and access to valuation data, bilateral portfolio-level data and collateral information.

#### *3.1.4.2 Main data gaps*

##### *Valuation data*

The ability of TRs to store valuation data on individual transactions presents a potential gap in the data that authorities may require to fulfil the mandates discussed above. Some relevant initial pricing data which are part of the primary economic terms of trade (such as upfront premia) can be used to determine the price of a trade at the time of execution. But it may not be sufficient to determine the value of the trade following execution. Three issues are highlighted below with respect to valuation data that may impact their ability to be recorded in TRs.

First, the challenge of transmitting an accurate valuation to a TR is not straightforward. While for many cash security or exchange-traded products a valuation may be a simple calculation, for OTC derivatives the same may not always be true. For example, firms may hold pricing or valuation information, or even adjustments, which are not reflected in the in-house application which would be expected to transmit data to TRs. Therefore, this data feed would need to be supplemented with data from other sources, potentially even manually, which could present operational risk to accurate data being transmitted.

Second, valuations for many products will differ across institutions, especially for complex derivatives which may not trade on a regular basis. In such cases, two counterparties may submit differing valuations for valid reasons. While this can be useful information for regulatory authorities, it may impede the submission of useful and accurate valuation data to TRs.

Finally, the frequency with which data should be reported may vary. While for market surveillance an initial valuation may be helpful to demonstrate if the execution price was consistent with the prevailing market price for a transaction, for other authorities' mandates more frequent updates regarding valuations may be needed, perhaps on a monthly or even daily basis. The flow of data from participants to TRs necessary to support the inclusion of relevant valuation data and the timely and frequent submission of such data may present significant operational challenges, risks and costs to TRs and participants.

##### *Bilateral portfolio-level data*

Ideally, access by regulators to TRs should allow an assessment of the exposure of a given counterparty at the bilateral portfolio level. Several types of bilateral information could be useful for assessing the exposures between counterparties.

Gross and net notional amounts can provide a generally indicative view of the activity between two counterparties. However, notional amounts are not useful for measuring bilateral exposures for risk management purposes. Measuring the notional amounts of transactions between a pair of counterparties could require aggregating these figures across all TRs containing information on the transactions of interest. To that end, a common identifier is necessary in order to identify the legal entities involved, as well as a common product identifier. However, gross data cannot in themselves offer an accurate view of position risk.

Net notional amounts, which are the sums of a pair of counterparties' net long and short notional positions on one or more underlyings, could help characterise the OTC derivatives activities among two counterparties, and contribute to an assessment of concentrations of interest and possible contagion channels. In order to assess net notional amounts, rules for netting similar but not identical long and short positions against one another would be useful, in addition to common identifiers.

Because risk exposure varies according to a derivatives contract's market value, current exposures are the most feasible measurements that facilitate a precise assessment of counterparty risk, by taking into account both information on netting and position valuations. These exposures could be measured gross of margin; however, the assessment of counterparty risk would ultimately take into account margin practices. Current exposures net of margin would thus require data on the margin valuations.

In their current design, TRs are not well equipped to provide the information described above. First, access solely to transaction data cannot provide an authority with all of the information required to reconstitute portfolio-level exposures of a given counterparty under its supervisory authority. Second, several obstacles may prevent TRs from independently determining, at the bilateral portfolio level, measurements more elaborate and rich in information than notional amounts. Indeed, more than one TR can be active for the same asset class; this may reduce the capacity of TRs or authorities to calculate net notional amounts, since no single TR would have access to all relevant data.

In addition, regarding current exposures, these assessments would require taking into account the netting agreement between the parties and the exchange of collateral based on the netting and collateral agreements between the parties, as well as position and margin valuations – information that is currently beyond the scope of TRs (as explained below).

#### *Collateralisation of OTC derivatives*

Since OTC derivatives portfolios are often collateralised, information about the application of collateral to OTC derivatives portfolios is essential for measuring bilateral counterparty exposures. Information of interest includes not only data regarding the extent and manner of collateralisation of portfolios, but also data about the type of posted collateral.<sup>37</sup>

Authorities responsible for systemic risk monitoring and oversight have an interest in centralised data sources for both collateralisation and collateral information. Collateralisation and collateral-related information would be helpful in assessing actual counterparty exposure. Relevant information could include information on the uncollateralised net exposures between the parties (the net exposure less the collateral posted by the parties), the type of collateral shared (eg cash or grade of security), the legal regime applicable to the bilateral portfolio, information on the custody and legal framework regarding the collateral,<sup>38</sup> valuation of the posted collateral, and information about events that could increase a party's collateral obligations (eg credit rating downgrades).

In the case of non-centrally cleared OTC derivatives, collateralisation requirements are dealt with bilaterally and can thus vary from one agreement to another. By comparison, centrally cleared OTC derivatives are subject to transparent, CCP-imposed margining requirements.

In this context, collecting data on collateralisation and collateral would allow an estimate of the amount of collateral used by counterparties and by the financial system on an aggregate basis. This would contribute to an ability to better assess exposures, counterparty risk and ultimately systemic risk.

However, the collection of collateral data by TRs is problematic. First, as with exposure data, collateralisation is typically defined at the portfolio level, not at the transaction level. As stated in the previous section, the net bilateral portfolio view would require information not currently contemplated to be captured by a TR. Second, data on the collateral, which is typically held

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<sup>37</sup> Assets or cash are used to secure OTC derivatives portfolios (bilaterally or with a CCP when the transactions are centrally cleared) in the form of "initial margin" for new trades and more frequently calculated "variation margin" that takes into account changes in portfolio valuations due to mark to market movements.

<sup>38</sup> For example, custodial information or information on whether the collateral is pledged or transferred.

in systems managed by depositories or other custodians, do not usually allow for the mapping of information at the OTC derivatives transaction level.

#### *3.1.4.3 Possible options to address data gaps*

As noted above, a complete picture of bilateral exposures and collateral can be obtained only at the portfolio level, which is generally not the purview of current TRs. Purely transaction-level data currently reported into TRs are thus of limited utility in this regard.

Complementary approaches to the use of transaction-level TRs are therefore desired to provide a more complete view of the market. Contemplating complementary sources of information in these areas would require further work that is beyond the scope of this Data Report. The following provides a high-level summary of some potential options that could be further analysed and elaborated, in order to obtain data that are not currently available in TRs. This list of options should not be considered as exhaustive, and inclusion or omission of an option in this section should not be interpreted as an implicit endorsement or rejection of any particular approach. In addition, the feasibility of each of the options would need to be analysed. Further study of data gaps is expected to be undertaken by an ad hoc experts group organised by the FSB. The FSB's October progress report indicated that this ad hoc experts group will define from the "demand side" what data are needed to bridge data gaps for assessing systemic risk and financial stability, supervising market participants and conducting resolution activities.

#### *Expanding TRs data coverage*

While data on the initial valuation of individual OTC derivatives transactions are reported to TRs at the transaction level, valuation of collateral is typically measured and available at only the portfolio level. This is also true with respect to information on bilateral exposures, cross-product netting information, collateralisation and other attributes of collateral.

At the present time, the primary functions of a TR are not necessarily compatible with the collection of data such as collateralisation data. However, as TRs evolve, it would be helpful to consider the extent to which some future changes in the design of TRs may allow them to collect data that would help reduce data gaps. This would include the ability of TRs to record data other than transaction data.

#### *Fostering the creation of complementary databases*

Another potential option to be further analysed is the creation of new types of market infrastructures to collect information that could complement transaction-level information collected by TRs. These infrastructures would help to provide a more comprehensive view of risk and exposures among market participants. In this respect, ancillary databases on trade values or portfolio-level valuations and collateral could be created to be used in conjunction with transaction-level data collected by TRs.

One potential example of how authorities could obtain this information was addressed in a white paper recently issued by the US Commodity Futures Trading Commission and Securities and Exchange Commission, which, inter alia, considered incorporating the terms of master agreements and credit support agreements into portfolio exposure measures by requiring that those portfolio data be reported to a portfolio data warehouse.<sup>39</sup>

Similarly, the creation of a Counterparty Exposure Repository, an option suggested by some industry commenters, could also be considered. Such a repository would collect net mark to market exposure for each counterparty, at the portfolio level, as well as the firm's calculation

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<sup>39</sup> See Securities and Exchange Commission, *Joint study on the feasibility of mandating algorithmic descriptions for derivatives*, 7 April 2011, page 13, available at <http://www.sec.gov/news/studies/2011/719b-study.pdf>.

of net exposure after the application of collateral. This approach could provide authorities with an aggregated risk view that could complement transaction-level TRs. Such additional reporting could theoretically allow authorities to fill in a number of data gaps and would offer authorities a better view of the risks transferred within the market.

### *Designing adequate additional disclosure requirements*

Broadening the collection of data through additional reporting requirements could be a potential way to address data gaps. In particular, the collection of the terms of master agreements and credit support annexes, which govern the collateralisation of bilateral portfolios, could be one possible option for assessing aggregate collateral levels. This reporting could be supplemented by the regular registration by counterparties of changes in the characteristics of the portfolios of instruments covered by these master agreements and credit support annexes.

However, implementing the collection of master agreements and credit support annexes would need to take into account certain technical constraints – for example, in information formats. These agreements are highly negotiated legal documents that reflect the bilateral nature of the relationship between counterparties. Data from these documents may be challenging to standardise. These documents are therefore currently evaluated through manual processes in most cases.

### *Supplementing TR transaction data with existing sources*

Other infrastructures could be sources of additional information that are not currently captured by TRs. As an example, CCPs could provide authorities with detailed information on collateral (eg initial and variation margins, default funds, possible other collateral) being posted for cleared products. With the mandatory clearing of standardised OTC derivatives consistent with the G20 recommendations, the role of CCPs as collateral data providers could be contemplated by authorities in the future.

Alternatively, a potential source of data on bilateral exposure may be direct reporting from financial institutions to supervisors, as suggested by the Working Group on Data Gaps and Systemic Linkages, which has proposed this approach for data on bilateral counterparty credit exposures of systemically important financial institutions with “derivatives exposures”. It should be noted that such reporting would aim at complementing but not replacing the reporting to TRs.

To some extent, reporting frameworks in some jurisdictions that provide information on non-derivatives contracts could also complement TR information on OTC derivatives in the assessment of interconnectedness and concentration risks.

## **3.2 Regulators’ access to OTC derivatives data**

### **3.2.1 Objectives**

The OTC derivatives markets are global in nature. Market participants may be trading, clearing and reporting transactions with counterparties, CCPs and TRs located outside the market participants’ local jurisdiction.<sup>40</sup> As a result of this market structure, data on OTC derivatives transactions may be stored in one or more TRs and may be relevant to authorities from different jurisdictions. To maximise their ability to carry out their respective mandates, market regulators, central banks, prudential supervisors, overseers and resolution authorities may need a global view of OTC derivatives markets through effective and

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<sup>40</sup> Reporting to a TR may generally require that the reporting entity be allowed by its relevant authority to report to a specific TR, especially if the TR is located outside the jurisdiction of the reporting entity.



practical access to relevant data, as well as an ability to aggregate those data efficiently. While the scope of access will depend on the specific mandates of the particular authority, access should not depend on or be constrained by the location of the TR.

The range of data needs is likely to vary from one type of authority to another depending on its responsibilities and statutory or other legal authority. Therefore, the definition of general principles or guidance to facilitate effective and practical access to the range of data relevant to the specific mandates of each type of authority (eg market regulators, central banks, prudential supervisors and resolution authorities) would seem beneficial. This would assist in the development of authorities' access to data and TR permissioning arrangements supporting this access, while giving due regard to confidentiality provisions and to applicable data privacy requirements. This could also be instrumental in facilitating TR employment of arrangements ensuring appropriate access and use of information by each authority requesting access to data. However, the Task Force recognises that defining general principles or guidance on the type of data that each category of authority may have access to is not within its mandate.<sup>41</sup>

The type and frequency of requests will also vary across different categories of authorities. Whereas some authorities will require the ability to retrieve confidential, transaction-level information, others might obtain access only to aggregate-level or non-confidential information. Although most data requests are likely to be on a regular basis, certain circumstances may require access to specific data and may occur with little advance notice. In all cases, a TR will need to have processes and procedures to provide data to relevant authorities in a timely and effective manner. Section 3.2.3 focuses on the operational methods of disclosure that TRs should implement in order to provide effective and practical access to authorities, tailored to the needs and type of requests of the different authorities.

### **3.2.2 Authorities' needs and responsibilities**

#### *Routine versus ad hoc data requests by authorities*

In practice, a TR should be able to accommodate both routine and ad hoc requests for data. Certain regulators will need to obtain data on a regular basis in order to perform ongoing monitoring of OTC derivatives market developments, at the macro level as well as at the individual firm level, in accordance with their respective regulatory mandates. Routine access may involve a dedicated environment, such as a secure internet connection. In other circumstances, authorities may need to obtain access to specific data by request (eg to explore potential issues regarding a given entity that is supervised by the requesting authority).

#### *Responsibilities of authorities*

A TR may need to process a wide range of requests by multiple authorities with various functions. Authorities should be mindful of the potential costs that data requests could have on the TR and take steps to minimise the TR's burdens. For instance, a single authority may have several functions across different departments, which would need access to different types of data at different points in time. Authorities should try to coordinate internally and develop procedures to avoid duplicative or conflicting requests and minimise the burden on the TR. To support such efforts, the TR may provide access matrices enabling regulators to give different departments access to a specific data set. An authority's procedures should

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<sup>41</sup> Notably, this task has been identified under Recommendation 16 and not Recommendation 19 of the FSB Report. The Task Force acknowledges, however, that a broad range of authorities and public sector entities are interested in obtaining access to data reported to TRs, including international financial institutions.

reasonably ensure that the data are protected and handled in a manner consistent with applicable confidentiality policies.

### **3.2.3 Methods of disclosure**

There are a number of methods by which a TR can provide authorities with effective and practical access to data relevant to the authorities' respective mandates. A TR should employ one or more approaches to meet the needs of relevant authorities, keeping in mind that the TR should apply appropriate information security measures to protect the data provided.<sup>42</sup> A TR may provide direct and regular access to data by, for example, building a dedicated web portal through which an authority could pull specific data, as prescribed by the authority's mandate and subject to appropriate controls (eg authorised users, information security measures to preserve the confidentiality of data). Such a web portal could facilitate authorities' access to transaction- or aggregate-level data on a routine basis or allow them to conduct ad hoc queries with minimal intervention from the TR.

Another method would be for the TR to actively distribute by some method (eg electronic mail, compact disc, separate server, host-to-host<sup>43</sup>) a common set of data to relevant authorities, by type or function, on a regular basis. Such methods could also be used to satisfy data requested on a case by case basis. This approach could ensure that data are directed towards a defined set of authorised recipients. To achieve broad disclosure, a TR could also post data to a dedicated website, as appropriate, for authorities to download at their choosing.

To facilitate the supply of information to relevant authorities, a TR might consider designing templates for common types of requests. Raw data, which can be imported into a user database application, would also be beneficial to facilitate analysis by the requesting authority.

## **3.3 Access to TR data by counterparties to OTC derivatives transactions (including reporting and non-reporting entities)**

### **3.3.1 Objectives**

Access by reporting entities and counterparties to their own data within TRs will help ensure the integrity of the information collected by the TRs. Additionally, by being able to compare their own positions with more aggregate public data, participants could detect and even alert regulators to abnormal behaviours or market evolutions. This may ultimately aid market regulators in fulfilling their duties.

### **3.3.2 Content**

TRs should provide reporting entities and counterparties with specific access to data, consistent with confidentiality requirements and with the principle that a market participant should have access only to that information which it has a legitimate interest in seeing. Accordingly, a reporting entity should have access only to data concerning the entity's own transactions as well as publicly available data.

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<sup>42</sup> In developing its approaches, a TR should have processes and procedures in place to provide effective and practical access for each requesting authority, in accordance with the scope of data access consistent with its mandate, and implement appropriate safeguards to protect the integrity of the data stored in its systems.

<sup>43</sup> A host-to-host connection is a connection generally encrypted between two nodes (like computers or servers) of a network. Such connection is typically used for accessing or processing information under a straight through processing (STP) model.

### 3.3.2.1 Access to participant-level data

Access to participant-level data maintained by TRs for a given reporting entity or counterparty should thus be restricted to its own data, in raw format, as follows:

- Each reporting entity should have appropriate access to the data it has reported to a TR, in order to check the accuracy of the reported data.
- Because reporting entities do not necessarily coincide with counterparties, counterparties should also have appropriate access to data concerning all transactions to which they are a counterparty and should be able to amend information concerning contracts they have concluded if needed (eg in case of reporting mistakes). TRs should have appropriate verification and authorisation procedures in place to deal with access and request for changes by counterparties who are not reporting entities. Alternatively, the counterparty itself may choose to ask the reporting entity to handle the modification on its behalf.
- Reporting entities should also have access to transaction-level data reported by their counterparties on transactions to which both sides are a party.

### 3.3.2.2 Access to public data

Data disseminated to the public, as described in Section 3.4, will allow reporting entities and counterparties (to the extent that individual counterparty positions cannot be identified) to compare the activity of the reporting firm with activity at the sectoral and the global level.

## 3.4 Dissemination of OTC derivatives data to the public

This section discusses the disclosure of a TR's data to the public and specifies, in this respect, minimum expectations regarding public dissemination of OTC derivatives data by a TR.

### 3.4.1 Objectives

The FSB Report encourages authorities to explore how increased public transparency could be implemented, including potentially through requiring public disclosure by market participants or TRs.<sup>44</sup> In comparison with the markets for cash products, OTC derivatives markets are decentralised and are characterised by greater heterogeneity of products and operational processes. This may give rise to information asymmetries and reduce the availability of comparable and comprehensive market information.

Owing to their role as centralised registries for OTC derivatives, TRs are well placed to address these shortcomings by enhancing information on the markets they serve. In particular, TRs should disclose adequate information to promote the understanding of the functioning of OTC derivatives markets by all stakeholders, including market participants, infrastructure providers, public authorities, end users, research bodies and the general public, thereby facilitating the exercise of market discipline and investor protection.

To that end, a TR should disclose to the public, where appropriate, information on market activity, based on the scope of the data it maintains. While this information would typically not enable a precise measurement of exposures of individual market participants, it should allow for a broad assessment of the financial stability of the overall OTC derivatives market and the market's potential impact from the perspective of different jurisdictions, currencies and

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<sup>44</sup> See FSB Report, op cit, page 43: “[A]uthorities also are encouraged to explore how increased public transparency could be implemented, including potentially through requiring public disclosure by market participants or TRs.” See also Recommendations 14 and 15 of the FSB Report.

counterparties. Where appropriate, detailed explanations and descriptions of the data should be provided by the TR to minimise the risk of the data disseminated being misunderstood by the public and the market.

The nature of data disclosed should meet applicable confidentiality requirements and take due regard of concerns about revealing individual firm positions or providing the public with sufficient information to indirectly infer those positions. Accordingly, public dissemination of a TR's data could be done in an aggregated form, so long as confidentiality requirements are met. Some jurisdictions may decide, as an alternative, to require a TR to publicly disseminate information about OTC derivatives trades in a more granular form. One option may be public dissemination of data on an individual but anonymised transaction-level basis, whether at a real-time or delayed frequency, with the same regard for applicable confidentiality requirements.

### **3.4.2 Content**

The information publicly disseminated by TRs could include state data<sup>45</sup> as well as event data, if available and appropriate. Measures of event data could include data on trade volumes and pricing information. State data could include data on outstanding gross notional exposures or positions. In terms of transparency-related product aggregation, TR data could be provided on an asset class-wide basis (ie all products in an asset class at the TR), on a single product basis, or on categories in between. Event or state data could be published by product, maturity, or other qualitative or quantitative criteria, depending on the degree of data granularity deemed appropriate. In terms of participant-related information, TR data could be aggregated on a market-wide or participant category basis. Participant categories should be defined sufficiently broadly to ensure market participant confidentiality while enhancing transparency on the risk implications for different jurisdictions and economic sectors in particular. For example, TR data could be aggregated by market participant sector (eg swap dealer, hedge fund, commercial end user), country of incorporation, principal place of business, or other criterion that balances the need for market participant confidentiality and the public interest served by enhanced transparency.

In addition to promoting awareness of these structural patterns, the information should also be published on a sufficiently frequent basis so as to allow the detection of relative changes in exposures in a timely manner, thereby serving as an early warning mechanism for rising vulnerabilities.

Information disclosed to the public, when released in an aggregated way,<sup>46</sup> should cover two main aspects:

- aggregate information on the market activity that should enable an appropriate assessment of the geographical and currency distribution of activities and exposures, and the extent to which the related operational and financial risks are taken over by financial market infrastructures or are managed bilaterally by the counterparties; and
- aggregate state information (ie “snapshot”) that should give a view of the concentration of the market.

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<sup>45</sup> “State Data describe the status of the Transaction at a given point in time[.]” See ODRF, op cit, available at <http://www.otcdrf.org/documents/traderepositorydataconceptsandvocabulary.pdf>.

<sup>46</sup> If publicly disseminated in a more granular way, including on an individual but anonymised transaction-level basis, information should be released in a format that allows data to be easily aggregated by the users.

Additional data could also be disseminated to the public, while meeting confidentiality requirements, to the extent that they may prove useful in enhancing the public's understanding of OTC derivatives markets. This may include the role of trading and post-trading market infrastructures in the OTC derivatives markets in each jurisdiction (such as the use of confirmation platforms and central clearing) and aggregated information regarding initial prices of transactions reported to the TR.

#### 3.4.2.1 *Information on market activity*

TRs should, where appropriate, provide periodic information on open positions and trading volumes to the public, complemented at a minimum by the following breakdowns:

- General market characteristics
  - Breakdowns by currency of denomination
  - Geographical breakdowns by *location of reference entity or asset*, where applicable (eg for CDS and OTC equity derivatives)
  - Breakdowns by maturity
- Reference data for involved entities
  - Breakdowns by geographical location of counterparty (country of incorporation)
  - Breakdowns by type of participant (dealer/non-dealer; financial/non-financial counterparties), indicating the total number and total volume of each

#### 3.4.2.2 *Position-level information at the TR level*

Where appropriate and without compromising the confidentiality of participants' identification (eg when a significantly low number of submitting firms are contributing to a TR for a given product), data could be made available to the public by each TR regarding the asset classes it records, with an appropriate level of data aggregation.

Taking into account these constraints, TRs could, for instance, provide the public with estimates of market concentration measured by the aggregated position of the largest counterparties for the most actively traded products. These aggregated positions, while not revealing individual firm positions, could be split at the global level, by jurisdiction of the counterparties, and by currency.

## 4. Data aggregation

### 4.1 Data aggregation concepts

The FSB Report recommended that the CPSS and IOSCO, in consultation with authorities and the ODRF, develop the methodology and mechanism for the aggregation of data on a global basis.<sup>47</sup> For the purposes of this section's discussion, this report defines "data aggregation" as the organisation of data for a particular purpose, ie the compilation of data based on one or more criteria.

Methods of aggregation should be distinguished from levels of data granularity. A *method of data aggregation* refers to the method used to organise data based on common criteria.

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<sup>47</sup> Recommendation 19 of the FSB Report, *Implementing OTC derivatives market reforms*, page 7, available at [http://www.financialstabilityboard.org/publications/r\\_101025.pdf](http://www.financialstabilityboard.org/publications/r_101025.pdf).

There are generally two types of methods of aggregation. First, *functional methods of aggregation* are aggregation methods intended to produce an output that assists authorities in carrying out a mandate. Second, *operational methods of aggregation* are aggregation methods which involve the mechanical aggregation of data. Operational methods of aggregation would be facilitated by the use of standard data fields and formats, as discussed in Section 3.1.2. Functional methods of aggregation imply the use of one or more operational methods of aggregation. Both types of methods of data aggregation are commonly driven by the output sought by the authority.

A *level of data granularity* refers to the level of detail of an output.<sup>48</sup> Levels of data granularity include the transaction level, the party level, the group level, the bilateral portfolio level and the market-wide level. The transaction level refers to data attributed to a transaction or set of transactions. The party level refers to data attributed to a uniquely identifiable participant. The group level refers to data attributed to a set of participants, for example a group that has been assembled based on some common group-level factor among group members, eg common corporate affiliation. The bilateral portfolio level refers to data attributed to a pair of parties or a pair of groups.<sup>49</sup> The market-wide or “aggregate” level refers to data attributed to all parties in the relevant products.

## 4.2 Reasons for data aggregation

The fundamental objective of data aggregation, for the purposes of this report, is to provide authorities with outputs<sup>50</sup> based on TR data that would help achieve their objectives. These objectives include assessing systemic risk, conducting market surveillance and enforcement, supervising market participants, conducting resolution activities, and increasing the transparency of OTC derivatives markets. Some specific *functional methods of aggregation* that would be useful to authorities addressing these specific objectives are outlined below.

### 4.2.1 Assessing systemic risk and financial stability

As discussed in Section 3.1.1.1, the FSB Report states that “weaknesses in OTC derivatives markets contributed to the build-up of systemic risk”.<sup>51</sup> Authorities would need to aggregate data reported to TRs to identify potential weaknesses. At least three methods of data aggregation involving TR data may assist regulators in addressing these weaknesses and in assessing systemic risk and financial stability.

First, a form of legal entity aggregation would allow authorities to view and analyse the potential systemic risk arising from OTC derivatives transactions or positions,<sup>52</sup> in one or

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<sup>48</sup> See ODRF, op cit, at <http://www.otcdf.org/documents/traderepositorydataconceptsandvocabulary.pdf>.

<sup>49</sup> See Section 3.1.

<sup>50</sup> An output, for the purpose of this subsection, may be defined as a specific report that assists authorities in carrying out a mandate. An output is a function of attribution (who) and content (what). For example, a TR data-derived output could describe company XYZ’s (attribution) interest rate derivatives exposures by maturity and underlier or product (content).

<sup>51</sup> FSB Report, op cit, page 1.

<sup>52</sup> For the purpose of systemic risk assessment, access to accurate position information is generally more important than transaction information, because any one transaction or a series of transactions that are quickly offset is unlikely to have systemic importance. Transactions may be defined as discrete economic relations between two counterparties that can be defined by a single contract. Positions are constructed from a set of one or more transactions attributed to the unique combination of a party and product. In order to have an accurate view of the positions of a party, authorities would need to have access to all transaction data attributable to the party that correspond to transactions open at the time the position is derived. Exposure refers to the replacement value of a transaction or, depending on context, the replacement value of a position or set of positions attributed to a party or group of parties.

more products, attributable to a group<sup>53</sup> of legal entities sharing common affiliation. The data attributed to such groups can assist authorities in assessing concentration and contagion risk associated with a group and its counterparties. For example, an authority could aggregate the activity of a counterparty to an uncleared OTC derivative product with the activity of the counterparty's guarantors, its credit support providers, or its affiliates or other "specified entities" under the applicable master agreement(s).<sup>54</sup> This form of legal entity aggregation would result in a report or output on OTC derivatives activity attributed to a group of related entities. This kind of legal entity aggregation could be carried out within and across relevant TRs in order to determine group-level concentrations on a global basis. Authorities could then subject "large exposures" at the group level to heightened scrutiny.<sup>55</sup> In turn, this information could lead to further inquiry into the concentration of the risk posed by a group's large exposures between its members and the contagion that could spread to the group's counterparties in the event of default.

Additional information beyond that reported to TRs would be necessary for authorities conducting this form of legal entity aggregation. For such aggregation, authorities would need to be able to link the legal entity or counterparty to certain transactions to other entities that would be liable for performance in the event of the counterparty's default, as noted above. This information is not currently contemplated to be captured by a TR.<sup>56</sup>

Second, in assessing a party's or a group's potential systemic risk impact and notional positions, authorities could conduct product aggregation. This method of aggregation would involve the aggregation of OTC derivatives activity in one product with other OTC derivative products sharing common risk factors.<sup>57</sup> These common risk factors may be present in historically price-correlated OTC derivative products. Properly specified product aggregation parameters relating to risk would provide authorities with information helpful in assessing the notional positions of a market participant or group of market participants. For example, if a correlated product aggregation report for a single entity indicates that the entity has a large

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<sup>53</sup> For the purpose of this report, a "group" is a set of participants that share a relationship with one another that is significant to authorities. See also Basel Committee on Banking Supervision, IOSCO and the International Association of Insurance Supervisors, *Supervision of financial conglomerates*, February 1999, page 7 ("Group-wide basis is a term employed to indicate that the entire group, including the parent and all its regulated and unregulated entities, are being considered.").

<sup>54</sup> Section 5 of the most commonly used OTC derivative master agreement template, the ISDA Master Agreement in both its 1992 and 2002 versions, provides that obligations to perform in the event of a default may extend beyond the party to a transaction, to the "credit support provider" or to "specified entities". A party to a master agreement may include its "affiliates" as "specified entities". Section 14 of the ISDA Master Agreement defines "affiliate" as "in relation to any person, any entity controlled, directly or indirectly, by the person, any entity that controls, directly or indirectly, the person or any entity directly or indirectly under common control with the person". The ISDA Master Agreement imputes "control" where an "entity or person means ownership of a majority of the voting power of the entity or person". In the case of cleared OTC derivative products, ultimate risk would be borne by clearing member intermediaries and then clearing houses in the event of the clearing member's default.

<sup>55</sup> See IOSCO, *Objectives and principles of securities regulation*, Principle 37 under Secondary Markets: "Regulation should aim to ensure the proper management of large exposures, default risk and market disruption." ("The expression 'large exposure' refers to an open position that is sufficiently large to pose a risk to the market or to a clearing firm. Market authorities should closely monitor large exposures and share information with one another so as to permit appropriate assessment of risk.") In the context of this report, the "large exposure" here would be indicated by a large notional position.

<sup>56</sup> Section 3.1.4.3 elaborates on the possible data collection approaches required to perform such legal entity aggregation.

<sup>57</sup> Determining appropriate risk factors will be a considerable challenge for authorities. At the minimum, authorities should have access to relevant OTC derivatives data (eg data concerning reference price, maturity and optionality) and historic pricing data. These factors are discussed in Section 3.1.2.

one-way notional interest in a set of correlated products, this could prompt the authority to request or review data on correlated non-OTC derivatives activity, eg activity in the underlying cash market, in order to determine the appropriateness of the entity's risk management.<sup>58</sup> Authorities may wish to develop systems to derive portfolio risk metrics such as expected potential exposure, based on aggregated TR data and other data.

Additional information beyond that reported to TRs may be relevant to authorities conducting correlated product aggregation. For instance, a challenge facing authorities conducting correlated product aggregation is how to aggregate OTC derivative products with non-linear risk profiles (eg option-type derivatives) with those that have linear risk profiles. Non-linear risk profile positions could be converted into delta-equivalent notional values in order to be properly aggregated with positions with linear risk profiles. This would require the use of a delta coefficient appropriate to the non-linear risk profile OTC derivatives position.

Finally, authorities may want to derive or have access to a bilateral portfolio view of the OTC derivatives relationship between two parties. The bilateral portfolio could be presented on a gross basis derived from data available at TRs. A gross bilateral portfolio view would present the OTC activity between two counterparties across all asset classes and would therefore be representative of aggregate data attributed to both parties across all TRs. Authorities may also wish to scrutinise a bilateral portfolio on a net basis. To derive a net bilateral portfolio view, the authority would need to account for the netting agreements between the parties and the exchange of collateral based on the netting and collateral agreements between the parties. The additional information needed to derive a net portfolio view of a bilateral OTC derivatives relationship is discussed in Section 3.1.

#### **4.2.2 Conducting market surveillance and enforcement**

The FSB Report observed that OTC derivatives trading is not subject to the same level of market surveillance as existing exchange or electronic platform trading venues.<sup>59</sup> As a result, market abuse in OTC derivatives is less likely to be detected.<sup>60</sup> The availability of TR data enables authorities to reduce this opacity and to conduct more effective market surveillance of OTC derivatives markets. At least two methods of data aggregation could be important to authorities seeking to conduct market surveillance of OTC derivatives markets. These same methods could be helpful in supporting authorities' efforts related to enforcement.

First, legal entity aggregation that takes into account the affiliations of an OTC derivatives party could allow authorities to identify and investigate instances of potential coordinated market abuse.<sup>61</sup> Entities related by affiliation can have a common economic incentive to conduct market abuse or exert increased market power relative to a single entity that could increase the impact and therefore efficacy of a manipulative scheme. Accordingly, authorities might seek to aggregate data attributed to a group of related entities in order to detect possible instances of coordinated market abuse undertaken by the group. In addition, authorities may consider subjecting parties or groups with large exposures to heightened

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<sup>58</sup> In assessing a party's or a group's risk management practices, authorities may need access to data from related markets that may or may not be automatically available to the authority, depending on the authority's domestic or international jurisdictional reach and extant reporting regime.

<sup>59</sup> FSB Report, op cit, page 10.

<sup>60</sup> Ibid. It should also be noted that different asset classes of OTC derivatives may have differing degrees of susceptibility to market abuse.

<sup>61</sup> Affiliations relevant in this connection might include parent-subsidiary relationships or legal entity aggregation based on a shared performance obligation. A shared performance obligation would be documented in the applicable master agreement(s), credit support agreement(s) and any other related bilateral agreement(s) between counterparties.



surveillance. In order to aggregate data based on counterparty affiliation, authorities or TRs would need access to reference data identifying the affiliations of OTC derivatives counterparties.<sup>62</sup>

Second, authorities may conduct product aggregation based on economic similarity among products in order to assist in the detection and investigation of potential market abuse. This method of aggregation involves the aggregation of OTC derivatives activity in one product with activity in other OTC or exchange-traded derivatives or other types of financial transactions that are economically equivalent or closely related. Such aggregation might be useful, for example, where the similar products share an interrelated price discovery function, where a change in the value of one underlying reference price commonly provides significant information about the future values of another price series in the set, or where the two price series are historically integrated. Market abuse schemes may extend across multiple financial markets, including OTC derivatives markets. For example, many OTC derivatives utilise an exchange-traded reference price that, in turn, may have prices that are closely related to cash market prices. Authorities could consider activity in related products to identify potential instances of cross-market market abuse.

#### **4.2.3 Supervision of market participants**

The supervision of market participants includes, among other responsibilities, overseeing a firm's risk-taking activities<sup>63</sup> and monitoring supervised entities' compliance with prudential requirements. Through access to TR data, supervisors could aggregate the derivatives activities of supervised entities, along with their other financial activities, in order to assess the entities' compliance with prudential risk standards. These efforts could be facilitated through aggregation based on legal entity affiliation or product risk characteristics. These methods of aggregation could be adjusted to allow, inter alia, the supervisory authority to derive or validate estimates of expected potential exposures and other measures of prudential risk.

### **4.3 Methods and outputs of data aggregation**

As discussed in Section 4.2, two general functional methods of data aggregation may assist authorities in fulfilling their regulatory objectives: legal entity and product aggregation. Both methods should be understood in the context of a desired output that could assist an authority in fulfilling its regulatory objectives. Legal entity aggregation attributes content to a set of legal entities (eg a group of affiliated legal entities) while product aggregation refers to a set of related products and data relating to activity in those products. The content of the output would be elaborated based on the type of data it covers (eg transactional or positional), the classification of the data (eg relevant maturities, optionality) and other relevant criteria.

The specific functional methods of data aggregation and desired output would be determined by the authority based on the facts surrounding its inquiry and its underlying objective.<sup>64</sup> To

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<sup>62</sup> Data that describe the affiliations of a legal entity are a type of "reference data". Generally, reference data are descriptor data relating to a name or, in other words, data that are used to categorise data in a database. A legal entity name or identifier (eg XYZ Corp.) is analogous to a common name while reference data are analogous to biographical information about the legal entity name or identifier (eg information about place of incorporation, corporate ownership or control structure). Reference data are discussed more fully in [Annex 3](#) in connection with legal entity identifiers.

<sup>63</sup> The discussion in Section 4.2 provides some examples of functional methods of aggregation that could assist authorities in overseeing risk-taking activities of supervised firms.

<sup>64</sup> The methods outlined above are by no means an exhaustive list of methods or desired outputs. Ultimately, authorities would have to update their methods of aggregation in response to context.

provide an example of an output responsive to an authority's mandate to assess systemic risk, assume that an authority suspects that a basket of CDS products could be mispriced (ie have a reasonable likelihood of a major price change). Based on risk-based parameters, the authority aggregates these products and looks to TR data to see whether any entities have large notional positions in a set of underlyings that could be adversely affected in the event of a major price change. The authority finds that XYZ Financial Products ("XYZ FP") has a particularly large exposure to the CDS basket. The authority could then consult a secondary database<sup>65</sup> that provides the identity of XYZ FP's "specified entities" in all of its master agreements. The authority could then generate an output designed to assist in the assessment of the contagion risk arising from XYZ FP's potential default or credit downgrade.<sup>66</sup> This output would be attributed to the group ultimately responsible in the event XYZ FP defaults or is unable to meet a margin call following a credit downgrade (a function of a form of legal entity aggregation) and the content of the output would be data describing the XYZ FP and XYZ group's positions and exposures in the CDS basket (a function of a form of product aggregation).

#### 4.4 Opportunities and challenges in data aggregation

There is currently an international effort under way to promote a consistent international framework for the regulation of OTC derivatives transactions, based on cooperation between national authorities. These efforts are generally directed towards achieving the objectives described above in Sections 3.1.1 and 4.2. New and proposed legislation and proposed rules in a number of jurisdictions now mandate reporting of OTC derivatives transaction data to TRs, and call for authorities to be able to conduct legal entity and product aggregation across and within TRs and asset classes.<sup>67</sup> These efforts recognise that the effective global aggregation of OTC derivatives data, across multiple TRs in different jurisdictions, requires international cooperation.

Efforts to enhance authorities' ability to aggregate OTC derivatives data face a number of notable challenges. A principal challenge lies in the need to achieve global consensus on methods of data aggregation and the tools that would facilitate these methods of data aggregation. A common international approach, despite the difficulties inherent in achieving international agreement, would significantly increase the likelihood of meeting the G20 objectives. A common approach would also reduce the possibility of undesirable regulatory arbitrage. A related challenge comes from the need, noted above, for data aggregation across different TRs, both within the same asset class and across different asset classes.<sup>68</sup>

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<sup>65</sup> TR data would not be sufficient for determining who would be responsible for performance in the event of a party's default as discussed in Sections 3.1.4 and 4.2. In Section 3.1.4.3, this report considers the consultation of the master agreement and credit support agreements in place between parties as an information source that can further assist authorities in carrying out their mandates. This type of information could be stored in a secondary database that could then inform an authority's legal entity aggregation undertaking.

<sup>66</sup> The credit downgrade of a counterparty may be treated as an "early termination" event in some master agreements that could result in the obligation to close out outstanding transactions or, alternatively, could increase the counterparty's collateral requirements.

<sup>67</sup> See eg 75 FR 76574, 8 December 2010 (Commodity Futures Trading Commission proposed rulemaking that would establish unique counterparty, product and transaction identifier requirements in connection with the reporting of OTC derivatives to swap data repositories).

<sup>68</sup> As noted in a recent CPSS-IOSCO report: "The TR should provide basic data and other information in a manner that can be easily analyzed and compared to information provided by others serving the market. A TR should consult with relevant authorities, including its regulatory, supervisory, or oversight authority, in developing and maintaining a reporting framework that facilitates analysis and comparison of data from other TRs." CPSS-IOSCO, *Principles for financial market infrastructures*, 10 March 2011, page 101. Such a framework is particularly necessary for collecting and aggregating data at a portfolio level, which could prompt

Another challenge is temporal in nature: various pieces of legislation relating to data reporting and aggregation are proceeding along different timelines in different jurisdictions. A final challenge to note is technical: the challenge of aggregating data across multiple TRs in the same asset class.

International cooperation on developing tools that will facilitate data aggregation is ongoing. The recent CPSS-IOSCO report on *Principles for financial market infrastructures* recommends that “an FMI should use, or at a minimum, accommodate internationally accepted communication standards, such as standardised messaging formats and reference data standards for identifying financial instruments and counterparties”.<sup>69</sup>

The report also observes that:

“In particular, an FMI should be able to support and use consistent communication protocols, messaging standards, and reference data standards relating to counterparty identification and numbering processes. For example, relevant standards promulgated by the International Organization for Standardization should be carefully considered and adopted by an FMI.”<sup>70</sup>

Three tools to facilitate functional and operational methods of data aggregation are discussed below in Sections 4.5, 4.6 and 4.7.

## **4.5 Legal entity identifiers as a tool for data aggregation**

### **4.5.1 Purpose of legal entity identifiers**

Currently, a single firm can be identified by names or codes having variations which an automated system may interpret as references to different firms. For example, if the firm J.P. Morgan is variously identified in data as “Morgan”, “JP Morgan”, “J.P.Morgan”, “JPM” or “J.P. Morgan”, an automated system may not interpret all such data as being attributed to the same legal entity and aggregation of data concerning the firm may thus be difficult or impossible. The potential for misattribution would only increase as the number of potential group members increases in a desired output. The use of a standard, universal, alphanumeric reference code would therefore facilitate and improve the ability of authorities to properly attribute OTC derivatives activity to a party or group.

One tool currently emerging to address this problem is the legal entity identifier or LEI, a standard reference code that would provide a universal method of identifying entities, including both financial and non-financial firms, that are counterparties to OTC derivatives transactions or other financial transactions, or that issue securities or other assets that are the subject of financial transactions. The alphanumeric reference code constituting the LEI itself would be used in data, such as OTC derivatives data, to provide precise, standardised identification of a particular legal entity. The code itself would be a single data field that does not contain embedded intelligence or contains as little embedded intelligence as practicable, since embedding information within an identifier can lead to obsolescence of the identifier and thus is contrary to best practices for data management. However, a system of LEIs would also include reference data associated with the LEI. Minimum reference data or identification data associated with an LEI would include the information needed to identify, on a verifiable basis, the legal entity holding an LEI, such as its place of incorporation, the address of its corporate headquarters, and its ultimate parent company. Additional reference

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TRs to contemplate future establishment of data-sharing agreements, in accordance with national legislation and with due regard to confidentiality and operational risk requirements.

<sup>69</sup> Ibid, page 94.

<sup>70</sup> Ibid, page 95.

data available to authorities could also include information on the hierarchical relationships and other affiliations of the entity, or on business units within an entity (such as a branch).<sup>71</sup> Such reference data could be used by authorities to conduct various forms of legal entity aggregation.

The need for an LEI has been recognised by a range of parties across the world. For example, Michel Barnier, European Commissioner for Internal Market and Services, in addressing the Europe Financial Forum in February 2011, stated: “We must also work together on a common system to identify the market participants. It is an area where the USA have already given their input, but which requires global standards.”<sup>72</sup> The US Office of Financial Research stated in its November 2010 *Policy statement on legal entity identification for financial contracts* that its financial data reporting requirements will include “a standardized way of identifying counter-parties”, that it “would prefer to adopt a universal standard developed and implemented by the financial industry and other relevant stakeholders through a consensus process”, and that it believes that “participation of international standard setting bodies would be beneficial in developing a standard that can be used widely”.<sup>73</sup>

Identification of legal entities that are counterparties to OTC derivatives transactions is not the only type of identification that might be useful for data aggregation. Authorities eventually may also want to aggregate data at other levels, such as by parent company or by guarantor or credit support relationship, for different regulatory purposes, as discussed above in Section 4.2. It is yet to be determined whether all such information might be included in reference data associated with a system of LEIs. Nevertheless, creation of a universal LEI to identify OTC derivatives transaction counterparties would provide an achievable and valuable first step towards a wider global identification system covering additional financial transactions, and towards other data aggregation methods.<sup>74</sup>

In addition to serving as an important data aggregation tool, LEIs would provide material enhancement for policy analysis by financial authorities. Such analysis employs legal entity reference data, which would be associated with an LEI, as the basic infrastructure for identifying, describing, classifying, labelling, organising and using other information, and for identifying interconnections between financial firms.

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<sup>71</sup> The different types of reference data are discussed more fully in Annex 2. The possible need for confidentiality of additional reference data such as hierarchical or affiliation information, which might be available only to authorities, should be a subject of further international consultation concerning implementation of LEIs as directed by the FSB.

<sup>72</sup> Michel Barnier, address to Europe Financial Forum, 10 February 2011. “Nous devons aussi travailler en commun à un système commun d’identification des acteurs de marché. C’est un domaine où les Etats-Unis ont déjà engagé leur réflexion, mais qui appelle des standards au niveau mondial.”

<sup>73</sup> 75 FR 74146, 30 November 2010, available at <http://www.federalregister.gov/articles/2010/11/30/2010-30018/office-of-financial-research-statement-on-legal-entity-identification-for-financial-contracts>. In its August 2011 progress report, the Office of Financial Research stated that it “remains strongly committed to the objectives expressed in its policy statement, and [is] encouraged by the progress that the public and private sectors have made toward establishing a global LEI [since issuing its November 2010 policy statement]”. See “Statement on progress to date and next steps forward in the global initiative to establish a legal entity identifier”, available at <http://www.treasury.gov/press-center/press-releases/Pages/tq1275.aspx>.

<sup>74</sup> LEIs could eventually be used for identification of legal entities beyond the context of OTC derivatives transaction counterparties. Such a global LEI system could be used to identify entities of all types that are or may become involved in any aspect of the financial issuance and transaction process, that may be subject to required due diligence by financial sector entities, or that may provide services to financial sector entities.

#### **4.5.2 Challenges regarding legal entity identifiers**

A principal challenge regarding identification of legal entities is that currently no global legal entity identification system is in use across the financial sector and regulatory community. In the absence of such a universal system, private firms and authorities have created a variety of limited or proprietary identifiers. This creates inefficiencies for firms, and presents obstacles to financial regulators and policymakers. Precise identification of counterparties to OTC derivatives transactions is necessary to understand systemic risk, which often involves entities operating across a range of industries and across different nations. Without a unique identifier for such counterparties, data aggregation that reveals their exposures can be difficult or impossible. For instance, securities and futures regulators must often manually identify parents and affiliates of counterparties that are part of a group. Any manual identification process dependent on non-standard naming conventions can lead to errors. Multiple and generally different identifiers for participants can make it difficult to create a consolidated audit trail with respect to products traded on multiple markets.

Like individual financial firms, some individual authorities have also developed their own identifiers to track entities that they supervise. However, such schemas are incomplete and local rather than comprehensive and universal. Whether in the private or the public sector, today's data users must perform complex and time-consuming data-matching across multiple identifiers. The only common link between data sets is often the entity name and, in the absence of a universal naming convention or LEI, matching on a name can be time-consuming and lead to erroneous results.

The vendor community has attempted to provide solutions for these private and public challenges. However, none is yet sufficiently robust, comprehensive and open to serve as an industry-wide standard. Most of the solutions offered by vendors are proprietary and restricted in use and redistribution. Some require payment of such high fees that their broad use can be inhibited by their substantial cost. Most of the identifiers offered are not sufficiently unique or persistent. Current identifiers that are unique and unrestricted with respect to use and redistribution are limited in scope – for example, limited to institutions engaged in payment activities.

Development of an LEI may also involve technical and operational challenges. A technical challenge would lie in the need for derivatives counterparties, trading platforms, CCPs, TRs, third-party service providers, authorities and other relevant stakeholders to modify their existing automated systems and software, or create new ones, in order to use the LEI. If the LEI were required to be used in connection with OTC derivatives transactions already reported to TRs at the time the LEI identification system was implemented, it would have to be mapped to the existing, local identifiers already present in data concerning such transactions. TRs would need to perform such mapping with respect to transaction data stored with them, while counterparties would need to do similar mapping with respect to their own transactions recorded in their own automated systems. Such mapping could have a significant cost, although such upfront costs would be offset in the long run against the operational efficiencies of having a universally recognised nomenclature system that can be used indefinitely. An operational challenge would lie in the need for relatively rapid implementation of the LEI system in order to meet the different timelines imposed by the inevitably different effective dates for legislation in various jurisdictions that could affect LEIs. Other operational issues that would need to be addressed would include pricing structure and governance of the administration of the LEI system. Some data experts have recommended that technical and operational challenges with respect to LEIs be addressed

through a phased approach to implementation.<sup>75</sup> Such a phased approach to LEI implementation was also discussed by both regulatory and industry representatives at the FSB LEI Workshop in September 2011.

To date, a fundamental obstacle to efforts to implement an LEI has been that all such efforts have necessarily relied on voluntary adoption. The lack of regulatory compulsion to create and use an LEI may have been a factor impeding efforts to create one. Many voices have suggested that some form of legal compulsion could aid moves to establish an LEI.

#### **4.5.3 Alternatives to creation of a universal legal entity identifier**

Practically, there are two methods of aggregating OTC derivatives data that could serve as alternatives to the establishment of a universal LEI: (i) a system of non-universal, but rather regional or national LEIs; or (ii) the current mix of partial, proprietary identifiers. In a system of regional or national LEIs, LEIs could be created and implemented as directed by a national authority, or across a region via collaboration between national authorities and entities such as the European Commission. Such a system could include local identifiers in current use, if so directed by a relevant authority. The other alternative would be continuation of the status quo whereby multiple, partial, proprietary identifiers exist as variously created by individual vendors or firms for particular purposes. Unlike the regional or national LEI alternative, which would involve implementation costs for mapping the regional or national LEI to existing, local identifiers already present in data concerning existing OTC derivatives transactions, the status quo alternative would not involve such costs at the counterparty level.

Both of these alternative approaches would also face substantial challenges. The regional or national LEI solution is likely to involve multiple registration agents issuing and managing LEIs. While a federated approach to issuance of a universal LEI could also involve more than one registration agent, in the case of a universal LEI these agents would be supervised or coordinated by a single central authority for the LEI standard involved, which would not be the case for a regional/national LEI solution involving different LEIs. Thus, a regional or national LEI solution could require coordination internationally or regionally in order to prevent the creation of inconsistencies if different protocols and reference data sets were used in different jurisdictions.

Some jurisdictions already use multiple identifiers in connection with specific markets, types of market participants or primary regulators. Where this is so, identifier harmonisation or “cross-mapping” could be required to connect these localised identifiers to the national or regional LEI. Data aggregation at the counterparty level using today’s mix of partial, proprietary identifiers would also require that proprietary identifiers be mapped to each other by some entity such as an authority or TR. Thus, neither of the alternative approaches avoids one of the challenges involved in creation of a universal LEI, namely the need for mapping of existing identifiers. Ultimately, the cost of such cross-mapping on a continuing basis is likely to be higher than the one-off expense of adoption of a common LEI framework.

The data aggregation experience of the private sector in past years suggests that a universal LEI may enable more effective OTC derivatives data aggregation by authorities than would be possible without an LEI. It also suggests that a universal LEI would have the added benefit of improving the operational efficiency of firms that are OTC derivatives counterparties. For financial firms, the current absence of an industry-wide LEI standard makes tracking counterparties and calculating exposures across multiple data systems complicated and expensive, and can lead to costly errors. Maintaining internal identifier

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<sup>75</sup> For example, see the transcript of the CFTC Public Roundtable to Discuss Swap Data Recordkeeping and Reporting Requirements, 28 January 2011), available at [http://www.cftc.gov/ucm/groups/public/@swaps/documents/dfsubmission/dfsubmission17\\_012811-transcri.pdf](http://www.cftc.gov/ucm/groups/public/@swaps/documents/dfsubmission/dfsubmission17_012811-transcri.pdf).

databases and reconciling entity identification with counterparties is expensive for large firms and may be disproportionately so for small firms. In the worst case scenario, identification problems can lead to transactions that are broken or fail to settle. Entity identification touches so many aspects of critical business functions that many firms have created their own internal identifiers, sometimes doing so on a department by department or function by function basis. Such stopgap measures can provide a measure of local relief, but ultimately they further aggravate and complicate the discontinuity, inconsistency and incompatibility of legal entity identification systems both for identifying OTC derivatives counterparties and across the international financial sector as a whole. This makes useful data aggregation and analysis substantially more difficult or even impracticable. In addition, complete automation of back office activities and straight through processing remain elusive, in part because of the lack of a universal identifier for legal entities.

#### **4.5.4 Value of an international approach to creation of a legal entity identifier**

The international effort now under way in many jurisdictions to create a new, internationally consistent framework for regulation of OTC derivatives transactions could provide a significant impetus for international coordination in the development of data aggregation tools such as an LEI. The attention of both authorities and industry is now focused on the need for improved monitoring of the exposures of individual financial firms and of the exposures created by interrelationships between firms. In addition, new and proposed legislation in a number of jurisdictions would mandate reporting of OTC derivatives transaction data to TRs, based on the recognised need for authorities to be able to aggregate that data across firms, markets and asset classes in order to increase market transparency and provide improved systemic risk monitoring and market supervision. This legislation may provide the legal compulsion for creation and use of LEIs that has been lacking. However, some jurisdictions may prefer to achieve LEI adoption through private sector initiatives rather than legislation. Irrespective of the approach taken, the ultimate goal should continue to be the achievement of a global LEI.

Establishment of a genuinely universal LEI that can be used for aggregation of OTC derivatives data in and across TRs on a global basis, by authorities in all relevant countries, would require international cooperation and coordination. Convergence of various existing international workstreams focusing on LEIs, in ongoing international consultations by international financial and data experts drawn from authorities and the industry, could be beneficial in this regard.<sup>76</sup> In addition, as various jurisdictions prepare and implement legislation regarding reporting of OTC derivatives transaction data to TRs, in order to further the objectives set by the G20, it could facilitate the emergence of a common approach to the use of LEIs in derivatives data reporting if a common set of basic principles for a universal LEI can be taken into account in such legislation.

## **4.6 A product classification system as a tool for data aggregation**

### **4.6.1 Objectives of a product classification system**

A product classification system would allow regulators to perform data aggregation to monitor exposures to, or positions in, various groupings of products. The rationale for various forms of product aggregation was outlined above in Section 4.2.

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<sup>76</sup> For example, such consultations could usefully address issues relating to the fact that, for an LEI to fulfil its intended function as a useful data aggregation tool for authorities, reference data that identify a legal entity receiving an LEI and provide information concerning the entity's relationships to other entities would be essential. Such consultations could also usefully consider solutions to the challenges that may be encountered during phased implementation of LEIs in an international convergence process.

A number of practical issues related to the implementation of data reporting by TRs, including how to standardise data formats and aggregate data and report aggregate statistics across platforms, have been examined by authorities in various forums and reports.<sup>77</sup> These consultations have recognised that standardised data representation and semantics are a prerequisite for effective data aggregation on multiple levels. They have also noted that asset class differences should be taken into account when developing standardised data formats. Additionally, such consultations have recognised that it would be useful to develop an open industry standard for data modelling of OTC derivative products, processes and transactions, and for data representation of OTC derivative products and transactions, in sufficient scope, detail and rigour to allow the employment of data elements as valuation model inputs, in order to calculate independent benchmark valuations of transactions and positions.<sup>78</sup>

#### **4.6.2 Absence of a common system of product classification**

OTC derivative product data standards need to be organically integrated with the description of cash instruments, so that authorities can associate OTC derivatives with related cash instruments to be able to see the interactions between positions held in cash and OTC derivatives markets.<sup>79</sup> Although there have been numerous efforts by industry to standardise the economic and legal terms and conditions that define different OTC derivatives contracts, at present there are no universally accepted industry standards for describing OTC derivatives contracts and other financial instruments. Market participants have developed proprietary data models by creating their own conventions for such data, in most cases by relying on in-house development or a vendor's off-the-shelf package using proprietary nomenclature and data formats.<sup>80</sup> At best, standards covering particular types of financial products are available. One example of such a standard is the Classification of Financial Instruments (CFI) code, established by International Organization for Standardization (ISO) standard 10962, which "defines and describes codes for classifying different types of financial instruments".<sup>81</sup> CFI codes can be used for financial instruments negotiated internationally as well as for domestic instruments. The term "financial instruments" refers not only to classic securities, but also covers the innovative financial products that have emerged in different markets.<sup>82</sup> Underlying or cash products are also sometimes described using various other identification or classification systems. For example, securities can be identified using the International Securities Identification Numbering (ISIN) system (ISO standard 6166), the classification system provided by the Intercontinental Exchange, the numbers provided by the Committee on Uniform Security Identification Procedures (CUSIP) or the securities identifiers provided by the Stock Exchange Daily Official List (SEDOL).

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<sup>77</sup> OTC Derivatives Regulator's Forum Subgroup Descriptions, available at <http://www.otcdrf.org/>.

<sup>78</sup> ODRF, Outline of Trade Repository Functionality Being Sought by Members of the OTC Derivatives Regulators' Forum.

<sup>79</sup> Aggregation of economically similar products, described in Section 4.2.2, provides an illustrative example. To generate an optimal output on a party's or a group's activity in a set of economically similar products, it would be useful to have a common and mutually intelligible syntax between OTC derivative and non-OTC derivative products in order to facilitate cross-market data aggregation.

<sup>80</sup> Francis Gross, *Microdata as necessary infrastructure*, ECB, 24 August 2010.

<sup>81</sup> [http://www.iso.org/iso\\_catalogue/catalogue\\_tc/catalogue\\_detail.htm?csnumber=44799&commid=49650](http://www.iso.org/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=44799&commid=49650). CFI guidelines can be found at <http://www.anna-web.com/index.php/home/cfiaiso10962>.

<sup>82</sup> [http://www.iso.org/iso/iso\\_catalogue/catalogue\\_tc/catalogue\\_detail.htm?csnumber=44799](http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=44799).



### **4.6.3 Challenges for development of a product classification system**

Creation of a product classification system for regulatory purposes would require prior development of a uniform, robust system of OTC derivatives classification analogous to a dictionary of terms used to describe various OTC derivatives. Put differently, the result would be product representation organised in a way that minimises redundancies, ie a normalised product representation. In this context, normalisation refers to the process of organising data in a database. It often includes creating tables and establishing relationships between them, according to rules designed to protect the data and also make the database more flexible.<sup>83</sup> The ultimate result of such classification would be a flexible system for categorising the majority of OTC derivatives transactions. The need to develop an appropriate product taxonomy and to determine what groupings of products are most appropriate for analysis by authorities is among the important challenges for development of a useful product classification system for OTC derivatives.<sup>84</sup> Another challenge lies in the need to harmonise the various existing product description schemes in current use, such as those for securities noted above. It should be noted that currently not all OTC derivative products can be submitted to electronic trade confirmation systems and be suitable to be represented by standard templates. Consequently, representing non-standardised OTC derivative products in an electronic form is another challenge that needs to be addressed to achieve a comprehensive framework for OTC derivative product representation.

### **4.6.4 Possible alternatives**

The alternative to creation of a universal product classification system for OTC derivative products is reliance on the existing system of product classification as well as development of product classifications for segments of the market that currently do not have a classification system, with the long-term goal of developing a mapping mechanism to aggregate the data from various sources. This alternative would not require the considerable effort needed to bring the world financial sector together in a consensus to move forward with creation of a product classification system, an effort essential to the necessary, first-phase development of a standard taxonomy for products. It also would not require mapping the new product classifications or identifiers that would be created in later phases to the data in existing systems, or the cost that this might entail.<sup>85</sup> Ultimately, however, OTC derivatives market transparency, effective systemic risk monitoring and enhanced market supervision called for by the G20 would be significantly enhanced by effective aggregation of the data in TRs across market participants within and across asset classes, and across TRs themselves.

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<sup>83</sup> See Microsoft, *Description of the database normalization basics*, <http://support.microsoft.com/kb/283878>.

<sup>84</sup> On 17 April 2011, the US Commodity Futures Trading Commission and Securities and Exchange Commission released a study regarding the feasibility of requiring use of standardised algorithmic descriptions for financial derivatives. The study explored whether the collection, reporting and management of risk exposures can be aided by computer-readable descriptions – a common dictionary with standardised, electronic “spelling” for each aspect of a derivative. The study concluded that standardised computer-readable descriptions for at least a broad cross section of derivatives is feasible. <http://www.cftc.gov/PressRoom/PressReleases/pr6017-11.html>.

<sup>85</sup> For example, the ISDA white paper *Product representation for standardized derivatives*, published on 14 April 2011, states: “For standardized OTC derivatives, i.e., broadly speaking, those derivatives that will be centrally cleared or electronically executed, a marketplace infrastructure similar in certain respects to the one in place for securities markets and futures and listed options markets could be developed if all processing forming part of the lifecycle workflow (buy/sell trades; post-execution clearing and settlement activities; reports to marketplace regulators) can use product identifiers that link to the full set of product economics abstracted as reference data.” Available at [http://www2.isda.org/attachment/MzAzNw%3D%3D/Product\\_Representation\\_for\\_Standardized\\_Derivatives\\_20110414vfinal.pdf](http://www2.isda.org/attachment/MzAzNw%3D%3D/Product_Representation_for_Standardized_Derivatives_20110414vfinal.pdf).

#### **4.6.5 Phased approach to development of a system of product classification**

As noted by the previous forums and reports noted above, practical considerations may dictate that the process of developing such a product classification scheme should proceed in phases. The first phase, as suggested in the earlier reports, would focus on development of a universal system of data elements, which is a necessary prerequisite for development of a classification system. To avoid persistence of the fragmentation that has resulted from use of different systems in the past, an international process focused on developing such a taxonomy would be needed. In this phase, all relevant stakeholders would work together to design a standard taxonomy that provides a flexible and extensible way to describe and classify OTC derivative products, and is also precise enough to allow regulators to run scenarios and examine exposures across a variety of different attributes. Product descriptions in such a system should be as precise as possible, in order to enable regulators to run scenarios and examine exposures across a variety of different attributes. Once a taxonomy has been developed, industry and authorities would work together in a second phase on product identifiers for uniform or standardised products.

Development of standardised representation for underliers referenced in given OTC derivatives is a separate area of data standardisation work. It should also be noted that the concept of a legal entity identifier is distinct from a classification system for equity and credit OTC derivatives underliers. While the purpose of an LEI is to uniquely identify a counterparty to an OTC derivatives or other financial transaction, the purpose of an underlier classification is to identify a particular debt issue or equity class of a particular entity on which a credit or equity OTC derivative is based.<sup>86</sup> As noted above, consistent representation of cash instruments is a necessary condition for the development of an efficient OTC derivative product classification system, due to the interrelatedness of OTC derivatives with cash instruments.

#### **4.7 Trade identifiers**

A third tool that could aid data aggregation by authorities would be a unique trade identifier, created at the time an OTC derivatives transaction or trade is executed, and used to identify that particular transaction throughout its existence. OTC derivatives will typically have a number of events associated with them over their lifetime, often referred to as life cycle events. These can include economic revisions, counterparty changes, early partial or full terminations, normal terminations, option exercises, credit events, servicing events and cash flow settlements. Because an OTC derivative might have a life that extends over many years, it could be important for authorities to be able to identify the origins of the transaction as well as events related to that transaction over its lifetime. Without the ability to track transactions through the use of a trade identifier, it would be difficult for authorities to separate new transactions from existing ones and to identify changes that have occurred to a specific OTC derivatives contract. A trade identifier could also be important for collating various data reports concerning a particular trade into a single, accurate data record that tracks the trade over its duration.

Perhaps most importantly, a unique trade identifier would assist authorities in avoiding the double-counting of a trade reported to two different TRs. The issuance of a unique trade identifier would allow authorities to count only once a trade documented at two or more trade repositories, thereby ensuring data quality and accurate data aggregation.

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<sup>86</sup> For example, the Markit RED code currently used by industry for CDS underliers is assigned to all reference entities and reference obligations because reference entities may have more than one reference obligation.

The issuance of unique trade identifiers presents a number of technical challenges that must be resolved prior to implementation. In the world of OTC derivatives, where not all trades are centrally executed and counterparties have the ability to enter into bilateral trades, assignment of a trade identifier at the execution level would require a practical way to enable a variety of market participants, from execution platforms to individual counterparties, to create and assign the identifier. In addition, because not all OTC derivatives are cleared, CCPs cannot assign all the needed trade identifiers. One solution to this challenge could be to require TRs to assign a trade identifier to each OTC derivatives transaction submitted to them, and to map to this trade identifier the various execution, clearing, confirmation or other relevant identifiers used for that trade by counterparties or FMIs. Technical challenges arising from the possibility that the same trade could be reported to multiple TRs would also require resolution.

## **5. Recommendations**

### **5.1 Minimum data reporting requirements**

#### **5.1.1 *Minimum reporting to TRs***

The Task Force recommends that, at a minimum, transaction-level data be reported to TRs and that such data should include, at least, transaction economics (primary economic terms), counterparty information, underlier information, operational data and event data. Examples of potential standardised data formats for reporting different types of OTC derivatives to TRs are presented in [Annex 2](#).

#### **5.1.2 *Additional reporting to TRs***

For furthering the objectives/mandates of the authorities, additional data that may be useful for assessing systemic risk and financial stability could be data on collateral, netting arrangements, market values of transactions, and reference data on affected parties in the event of a counterparty's default. Effective market surveillance and enforcement would be furthered by authorities having access to data on affiliate relationships of the various transacting entities (which could be reflected in the design of LEIs). For conducting resolution activities, information on collateral and information on priority of claims on collateral would be beneficial. The FSB's October progress report advocated the setting-up of a small ad hoc experts group to define from the "demand side" what data are needed to bridge data gaps for: (i) assessing systemic risk and financial stability; (ii) supervising market participants; and (iii) conducting resolution activities.<sup>87</sup> The CPSS and IOSCO also note that the G20 Final Declaration following the 2011 Cannes Summit called on the CPSS and IOSCO to work with the FSB to carry forward work on identifying data that could be provided by and to TRs.

#### **5.1.3 *Authorities' access to data***

Public authorities with an interest in OTC derivatives data should benefit from effective and practical access to TR information as necessary to carry out the authorities' respective regulatory mandates.

The Task Force notes that defining general principles or guidance on whether a type of authority (eg market regulators, central banks, prudential supervisors and resolution

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<sup>87</sup> FSB, *OTC derivatives market reforms – progress report on implementation*, October 2011, available at [http://www.financialstabilityboard.org/publications/r\\_111011b.pdf](http://www.financialstabilityboard.org/publications/r_111011b.pdf).

authorities) should have access to the relevant part or the whole range of data reported to TRs, in accordance with the authority's mandate, would be a significant step towards facilitating authorities' effective and practical access to data but is beyond the assigned scope of the report. The Task Force recommended in its Consultative Data Report that this responsibility be assigned by the FSB to an appropriate body or group for timely resolution.

The Task Force also recommends that TRs implement the two types of methods identified for providing operational access for authorities to the data stored by TRs. First, routine access should provide authorities with information that will allow them to perform adequate monitoring of the OTC derivatives markets. This access, granted by a dedicated environment (eg web portal), should include macro data, in the form of aggregated data, and individual data, in accordance with authorities' mandates. Second, authorities should also have the option to submit specific ad hoc requests to TRs. This non-routine access should allow authorities to assess specific issues within their mandates beyond their routine information needs.

The Task Force recommends that data formats used to make data available to authorities should be consistent with routine and non-routine access to data. The recourse to predefined templates could help provide authorities with standardised information related to routine reports. However, authorities should have the option to obtain raw data rather than information in the form of templates, raw data being especially relevant in the case of non-routine requests.

The FSB's October progress report advocates that the CPSS and IOSCO, coordinating with relevant authorities, take forward work on authorities' access to TR data, taking into account data security and building on work that has been done by the ODRF.

#### **5.1.4 Reporting entities and counterparties' access to data**

Reporting entities and counterparties should have appropriate access to their own data stored with TRs, as this information will help reporting entities and counterparties (to the extent that they differ) check the accuracy of data collected and stored by TRs. Such access should be governed by appropriate confidentiality requirements and should meet applicable laws and regulations.

As such, the Task Force recommends that this access should be limited to enabling reporting entities and counterparties to check their own data or data they have reported, in raw format. The reporting entity should also have transaction-level access to deals reported by its counterparty on transactions to which both sides are a party.

#### **5.1.5 Public dissemination of data**

As pointed out by the FSB Report, public dissemination of a TR's data would improve transparency of OTC derivatives markets, and thus promote understanding of the functioning of OTC derivatives markets and facilitate the exercise of market discipline and investor protection. Public dissemination of a TR's data could be done in an aggregated form. Some jurisdictions may decide, as an alternative, to require a TR to disseminate to the public information about OTC derivatives trades in a more granular form.

The Task Force recommends that information disclosed to the public, when released in an aggregated way, should cover two main aspects:

- aggregate information on the market activity that should enable an appropriate assessment of the geographical and currency distribution of activities and notional positions, including by types of counterparty; and
- aggregate state information (ie "snapshot") that provides views of concentration of the market.

The Task Force recommends that, if publicly disseminated in a more granular way (such as on a trade by trade basis), information should be released in a format that allows easy aggregation of data by the users.

The Task Force also recommends that, whichever the method of public dissemination chosen by a jurisdiction for TRs (ie an aggregate or more granular form), due regard must be taken to preserve the confidentiality of reporting firms and counterparties, and public dissemination of data should not allow the identification of counterparties to the contracts represented by such data.

## **5.2 Methodology and mechanism for aggregation of data**

### **5.2.1 Support of international legal entity identifier development and principles**

As set out in Section 4.5, a standard system of LEIs is an essential tool for aggregation of OTC derivatives data. An LEI would contribute to the ability of authorities to fulfil the systemic risk mitigation, transparency and market abuse protection goals established by the G20 commitments related to OTC derivatives, and would improve efficiency and transparency in many other areas. As a universally available system for uniquely identifying legal entities in multiple financial data applications, LEIs would constitute a global public good. The Task Force recommends the expeditious development and implementation of a standard LEI that is capable of achieving the data aggregation purposes discussed in this report, suitable for aggregation of OTC derivatives data in and across TRs on a global basis, and capable of eventual extension to identification of legal entities involved in various other aspects of the financial system across the world financial sector. The Task Force believes that industry efforts currently under way towards creation of such an LEI are important and useful. To help ensure that these efforts lead to timely development of an LEI suitable for international use and involve both private and public sector input, the Task Force recommends that the industry process include development of an LEI standard and issuance of LEIs under the auspices of an organisation with international membership that develops and publishes international standards for the financial sector.<sup>88</sup> Furthermore, the Task Force recommends that TRs support the international establishment of the LEI system through active participation in development efforts and employment of the standard on their respective systems when the standard is ready for production use.<sup>89</sup>

In the course of the Task Force's consideration of LEIs, including its consultations with financial and data experts, it has recognised that a global LEI system should adhere to a number of basic data management principles that address key functions or attributes of the system. The Task Force has also recognised that the comprehensive development of a full set of definitive data management principles for LEIs must incorporate the views of all relevant stakeholders, including authorities and industry participants outside the Task Force. The Task Force recommends that the LEI follow a set of basic principles, set forth below, that address key functions or attributes of an LEI system.<sup>90</sup> These key functions or attributes

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<sup>88</sup> The organisation should have a governance structure acceptable to financial authorities, and be capable of ensuring that issuance of LEIs complies with existing laws on data protection and confidentiality.

<sup>89</sup> The Task Force notes that at their November 2011 meeting in Cannes, France, the G20 Leaders declared their support for the creation of a global LEI and called upon the FSB "to take the lead in helping coordinate work among the regulatory community to prepare recommendations for the appropriate governance framework, representing the public interest, for such a global LEI" by the next G20 Summit. Cannes Summit Final Declaration, 4 November 2011, paragraph 31, available at <http://www.g20.org/Documents2011/11/Cannes%20Declaration%204%20November%202011.pdf>.

<sup>90</sup> The Task Force recognises that further international consultation concerning LEIs may lead to identification of additional principles appropriate for LEIs.

are needed to allow the LEI to support the data aggregation purposes discussed in this report. For example, unique, verifiable and persistent identification of counterparties to derivatives transactions is essential to the ability of authorities to use legal entity aggregation to assess systemic risk by viewing exposures of related entities or exposures to particular products, to identify and investigate instances of potential coordinated market abuse, or to supervise market participants. In addition, extensibility of an LEI based on an open standard is important for ensuring that the LEI can eventually be used for important purposes beyond the context of OTC derivatives, as discussed in the report. In order to promote harmonisation of legal requirements for use of LEIs across different jurisdictions as phased implementation of LEIs occurs, and to help ensure that LEIs can facilitate aggregation of OTC derivatives data, national authorities issuing or considering legislation or regulations requiring use of LEIs should take these basic principles into account.<sup>91</sup>

### *Basic principles*

1. *Uniqueness.* Only one LEI should be assigned to any legal entity, and no LEI should ever be reused. Each entity within a corporate organisation or group structure that acts as a counterparty in any financial transaction should have its own LEI.<sup>92</sup>
2. *Neutrality.* To ensure the persistence of the LEI, it should have a format consisting of a single data field, and should contain either no embedded intelligence or as little embedded intelligence as practicable.<sup>93</sup> Entity characteristics should be viewed as separate elements within a reference data system that would be available to authorities to enable data aggregation needed to fulfil their regulatory mandates.
3. *Reliability.* The LEI should be supported by a trusted and auditable method of verifying the identity of the legal entity to which it is assigned, both initially and at appropriate intervals thereafter. The issuer of LEIs should maintain minimum reference or identification data sufficient to verify that a user has been correctly identified. Issuance and maintenance of the LEI, and storage and maintenance of all associated data, should involve robust quality assurance practices and system safeguards.

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<sup>91</sup> Similar principles have been followed thus far in the various current efforts under way to develop an LEI for use in connection with OTC derivatives data. See eg the principles stated in the Statement on Legal Entity Identification for Financial Contracts issued by the US Department of the Treasury's Office of Financial Research, 30 November 2010, <http://edocket.access.gpo.gov/2010/pdf/2010-30018.pdf>; the principles stated in the Notice of Proposed Rulemaking concerning Swap Data Recordkeeping and Reporting Requirements issued by the US Commodity Futures Trading Commission, 75 FR 76139, 8 December 2010, <http://www.cftc.gov/LawRegulation/FederalRegister/ProposedRules/2010-30476.html>; and the principles addressed in John A Bottega and Linda F Powell, *Creating a linchpin for financial data: toward a universal legal entity identifier*, January 2011, <http://www.federalreserve.gov/pubs/feds/2011/201107abs.html>. See also Coalition of Global Financial Services Trade Associations, *Global legal entity identifier: solicitation of interest*, [http://www.sifma.org/uploadedFiles/Issues/Technology and Operations/Legal Entity Identifier/Global-LEI-Solution-SOI-05132011.pdf](http://www.sifma.org/uploadedFiles/Issues/Technology%20and%20Operations/Legal%20Entity%20Identifier/Global-LEI-Solution-SOI-05132011.pdf). While the Task Force recognises that, as discussed in Section 4.5, a universal LEI could have uses and benefits beyond OTC derivatives data aggregation, and that accordingly a possible future need for additional principles relating to such wider uses cannot entirely be excluded, the Task Force believes it can be important and useful to recognise the basic principles stated here as necessary for a universal LEI system that can achieve the data aggregation purposes discussed in this report.

<sup>92</sup> When the legal status of an entity changes due to a corporate event (eg a merger or acquisition), the resulting new legal entity should receive its own LEI, while the LEIs of any predecessor entities remain in the record to permit historical uses.

<sup>93</sup> It is generally known that embedding information within an identifier, such as geographical location or company name, can lead to obsolescence of the identifier when such information changes, and thus is contrary to best practices for data management.

4. *Open source*. The schema for the LEI should have an open standard, in order to ensure to the greatest extent practicable that the LEI is compatible with existing automated systems of FMIs, market participants and authorities, among others.

5. *Extensibility*. The LEI should be capable of becoming the single international standard for unique identification of legal entities across the financial sector on a global basis. Therefore, it should be sufficiently extensible to cover all existing and potential future legal entities of all types that may be counterparties to OTC derivatives or other financial transactions, may be involved in any aspect of the financial issuance and transactions process, or may be subject to required due diligence by financial sector entities.<sup>94</sup>

Certain fundamental aspects of the governance of the LEI system are also essential to the ability of authorities to use the LEI for data aggregation to fulfil their responsibilities, to the possibility of eventual implementation of the LEI system across the world financial sector (the need for which is addressed in the report), and to ensuring avoidance of monopoly rents to the provider of LEIs. The Task Force also believes it is important that the LEI should be available to all interested parties on a non-discriminatory, royalty-free or low-cost basis, and that cost should not be an impediment to obtaining or using the LEI.<sup>95</sup> The Task Force further believes that the LEI should not be tied to other services that may be offered by the issuer, but should be available independently without a requirement for the LEI recipient to accept or pay for other services offered by the issuer.<sup>96</sup> Usage restrictions should not be imposed on use of LEIs by any person in its own products and services, and use of LEIs and associated reference data by authorities should be free of legal or technical restrictions.

### **5.2.2 Continued international consultation regarding implementation of legal entity identifiers**

As noted in Section 4.5, establishment of a universal LEI usable for OTC derivatives data aggregation in and across TRs on a global basis, by authorities in all relevant countries, would require an international approach to implementation which is likely to occur in a phased manner. Continued international consultation and coordination by financial and data experts drawn from both authorities and industry concerning implementation of an LEI system would aid harmonised LEI implementation across various jurisdictions, would help to ensure that the data aggregation needs of different authorities, jurisdictions and market sectors are taken into account during the implementation process, and would help to ensure that LEI implementation incorporates industry efforts to create an LEI and facilitates strengthened risk management, regulatory reporting and data processing for market participants.

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<sup>94</sup> For this reason, the code should be made large enough from the start to cover the full expected scope of eventual use of LEIs, and part of the structure of the code should be reserved for future expansion.

<sup>95</sup> Initial and annual fees to a legal entity obtaining an LEI should generally be limited to amounts necessary to cover the cost of issuance, maintenance, and initial and ongoing verification of the LEI. It would be useful for a current directory of all issued LEIs and the minimum reference data needed to verify the identity of the legal entity receiving each LEI to be made available publicly and free of charge. The separate question of the availability of hierarchical relationship data and other reference information needed by authorities for data aggregation purposes is discussed in Annex 3, and should be a subject of further international consultation as directed by the FSB.

<sup>96</sup> This is consistent with proposed factors regarding access and participation for considerations by TRs and relevant authorities as discussed in the recent CPSS-IOSCO consultative report on considerations for trade repositories. CPSS-IOSCO, *Considerations for trade repositories in OTC derivatives markets*, May 2010, pages 9–10.

In its August 2011 consultative report on the issue of data reporting and aggregation requirements, the Task Force noted various issues which might be addressed in a workshop on the LEI issue (“LEI Workshop”).

The LEI Workshop, which took place under the auspices and with the full backing of the FSB, was held in Basel, Switzerland, on 28–29 September 2011 with more than 50 private sector experts and over 60 representatives from the regulatory community. The purpose of the LEI Workshop was to educate participants about the LEI, provide the participants with a forum for their input, and guide the preparation of a potential roadmap for the next steps in the development and implementation of an LEI, including issues for further assessment and review, and the role of the public and private sectors.

Similar to the comments received on the Consultative Data Report, the Workshop revealed strong support for the LEI initiative from both private sector and official sector participants. Industry representatives emphasised the vital importance of support and leadership from the global regulatory community, and highlighted that the many potential benefits of a unique global LEI would only be realised if the official community supported the initiative.

Presenters at the LEI Workshop also supported the timely phasing of LEI implementation, in order to permit refinements and improvements over time, create a manageable “scope” in the initial phase of the implementation period, and allow time for the development of stakeholder consensus. Presenters also noted that phasing might occur according to factors such as financial product or asset class and industry classification or entity size. The CPSS and IOSCO also note that while this Final Report is limited to OTC derivatives, they believe that the LEI concept is relevant to other financial instruments as well.

At the conclusion of their November 2011 meeting in Cannes, France, the G20 Leaders announced their strong support for the LEI through the Cannes Summit Final Declaration, which stated:

“We support the creation of a global legal entity identifier (LEI) which uniquely identifies parties to financial transactions. We call on the FSB to take the lead in helping coordinate work among the regulatory community to prepare recommendations for the appropriate governance framework, representing the public interest, for such a global LEI by our next Summit.”<sup>97</sup>

Following the request from the G20, the FSB decided in December to create a time-limited, ad hoc expert group of authorities to carry forward work on key outstanding issues relevant to implementation of a global LEI, in order to fulfil the G20 mandate. The issues to be addressed by the expert group include: (i) the governance framework for the global LEI; (ii) the operational model for the LEI system; (iii) the scope of LEI reference data; (iv) reference data access and confidentiality; (v) the funding model for the LEI system; and (vi) global implementation and phasing of the LEI. It is anticipated that the expert group will deliver clear recommendations with respect to implementation of a global LEI system to the FSB Plenary for endorsement in April 2012.

### **5.2.3 Development of a standard international product classification system for OTC derivatives**

Work to develop a standard product classification system for OTC derivative products is needed as a first step towards both a system of product identifiers for standardised instruments and an internationally accepted semantic for describing non-standardised

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<sup>97</sup> Cannes Summit Final Declaration, 4 November 2011, paragraph 31, available at <http://www.g20.org/Documents2011/11/Cannes%20Declaration%204%20November%202011.pdf>.



instruments. The Task Force recommends that CPSS-IOSCO or the FSB make a public statement calling for the timely industry-led development, in consultation with authorities, of a standard product classification system that can be used as a common basis for classifying and describing OTC derivative products. Therefore, the Task Force recommends that the FSB direct, in the form and under the leadership the FSB deems most appropriate, further consultation and coordination by financial and data experts, drawn from both authorities and industry, on a timely basis, concerning this work.

## **Annex 1: Current state of OTC derivatives reporting and access to information for the major existing TRs**

This annex provides a description of the state of OTC derivatives reporting, by participating firms, to three major TRs currently operational and the information and statistics made available by these TRs to market stakeholders (ie regulators, submitting firms and the public).<sup>98</sup> These three TRs – the Trade Information Warehouse, the Global OTC Derivatives Interest Rate Trade Reporting Repository and the Equity Derivatives Reporting Repository – collect data on credit derivatives, interest rate derivatives and equity derivatives, respectively.

### **The Trade Information Warehouse**

The Trade Information Warehouse (“Warehouse”) collects information on trades in credit derivatives. This TR is operated by the Warehouse Trust Company, LLC (“Warehouse Trust”), a limited purpose trust company supervised as a member of the US Federal Reserve System and by the New York State Banking Department. Warehouse Trust is a subsidiary of DTCC.

From 2006, all major dealers began voluntarily submitting data on credit derivatives to the Warehouse via an electronic matching and confirmation platform, Deriv/SERV. According to DTCC, the Warehouse represented in early 2011 “about 98 percent of all credit derivative transactions in the global marketplace; constituting approximately 2.3 million contracts with a gross notional value of USD 29 trillion”.<sup>99</sup>

The electronic confirmation process produces “confirmable events”<sup>100</sup> that create, modify or delete transaction records in the Warehouse database and can include new trades or events that affect the terms of the contract. Warehouse transaction records include both operational information (eg trade reference identifiers, counterparty information) and transaction economics (eg economic terms of the contract).

In addition to receiving and maintaining data, the Warehouse supports downstream processing associated with standardised credit derivatives transactions, including the calculation and netting of payment obligations related to initial fees, coupon payments, and settlements that may be triggered following a “credit event”, which can include various events of default affecting transactions including bankruptcy, failure to pay, and restructuring.

#### *Eligibility of transactions*

CDS contracts can be divided into two broad categories:

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<sup>98</sup> Survey of TRs conducted by the ODRF.

<sup>99</sup> DTCC, “DTCC: Continued cooperation between global regulators and market participants key to enhancing transparency in the OTC derivatives market”, press release, 15 February 2011, available at [http://www.dtcc.com/news/press/releases/2011/press\\_release\\_donahue\\_house\\_financial.php](http://www.dtcc.com/news/press/releases/2011/press_release_donahue_house_financial.php).

<sup>100</sup> New contracts are matched and confirmed through MarkitSERV or other confirmation services. The Warehouse Trust Operating Procedures for credit derivatives separate modification of Warehouse records into confirmable post-trade events, non-confirmable post-trade events and credit events. Confirmable post-trade events include the following actions by the parties to a Warehouse transaction: amendments, assignments/novations, increases in positions, partial terminations, full terminations and any other post-trade events as may be specified by the Company in the Applicable Publications (ie all the documents and resources that govern the obligations created by the transaction).

- standardised products, which include: single-name CDS referencing corporate, sovereign or municipal debt; single-name CDS referencing loans; single-name CDS referencing CMBS and RMBS;<sup>101</sup> multi-name CDS referencing various standard credit indices (such as the CDX and iTraxx families); and multi-name CDS referencing tranches of standard credit indices; and
- less standardised products, such as CDS referencing customised product baskets, structured credit products or total return swaps based on debt securities.

The Warehouse covers standardised products, as well as non-standardised products, with a lesser degree of detail. Indeed, it requires more detailed information for the first category and considers these contracts as “Warehouse Eligible Transactions”.<sup>102</sup> The Warehouse also supports the second category of contracts in a much more limited way, but they are not “Warehouse Eligible”.

The remainder of the subsection on credit derivatives focuses on data currently required by the Warehouse for “Warehouse Eligible Transactions”. Available data regarding these transactions will depend on the information submitted by the counterparties at the time of a “confirmable modification” (or “confirmable events”). Economic terms are thus submitted when needed, including new trades and additional operational information during the life of the contract for each confirmable event. Statistics built by the TR rely on these data.

#### *Public dissemination of CDS data*

Since October 2008, on a weekly basis, DTCC has published aggregated data via the Warehouse’s website. Through this access, the Warehouse disseminates weekly state data and volume reports that cover four categories of information, each category corresponding to a dedicated section on the website:

- Section I: information regarding all open positions in the Warehouse as of a specified date.
- Section II: week-on-week activity changes for the previous open positions.
- Section III: information on all transaction activities, such as new trades, assignments, and terminations that were confirmed within the specified week.
- Section IV: weekly activities where market participants were engaging in market risk transfer activity, which are event data that are economic and not operational in nature.<sup>103</sup>

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<sup>101</sup> Commercial mortgage-backed securities (CMBS) and residential mortgage-backed securities (RMBS) are asset-backed securities that are secured by a mortgage or collection of mortgages, respectively commercial or residential.

<sup>102</sup> Records that are not “Warehouse Eligible” are not legally confirmed and therefore should be considered more indicative than reliable.

<sup>103</sup> Risk transfer activity is defined as transactions that change the risk position between two parties. These transaction types include new trades between two parties, a termination of an existing transaction, or the assignment of an existing transaction to a third party. To be consistent with this definition, Section IV of the website was specifically designed to exclude transactions which did not result in a change in the market risk position of the market participants, and are not market activity. For example, central counterparty clearing and portfolio compression both terminate existing transactions and rebook new transactions or amend existing transactions. These transactions still maintain the same risk profile and consequently are not included as “market risk transfer activity” transactions. See eg DTCC, *3 month market activity analysis initially published for the ISDA Credit Steering Committee*, February 2011, available at [http://www.dtcc.com/downloads/products/derivserv/tiw\\_6-Month\\_study\\_explanation.pdf](http://www.dtcc.com/downloads/products/derivserv/tiw_6-Month_study_explanation.pdf).

Since June 2011, the DTCC website has provided the public with access to historical data in Excel/csv format. Public access to historical data was previously limited to one week, one month and one year ago, and DTCC's website did not allow for information to be copied and pasted into spreadsheets and did not provide downloading tools.

#### *Regulator access to data*

The Warehouse has made aggregate and individual information available to authorities, updated weekly via a website dedicated to regulators, which grants access to regulator-specific reports downloadable in Excel/csv format. The provision of the data on the website aims to reflect each regulator's mandates and responsibilities.

International authorities also have the ability to request appropriate information from the Warehouse on an ad hoc basis, in accordance with their respective regulatory or governmental mandates in order to complement this information, when needed.

#### *Aggregation of data*

The Warehouse provides aggregate information in terms of notional amounts in USD equivalent, expressed in either gross or net terms according to the type of data aggregated, and in terms of the number of contracts. It distinguishes between several categories of information:

- the type of counterparties to CDS contracts, ie CDS dealers and non-dealers/customers;
- the characteristics of the underlying reference entities, on a sectoral basis and by categories of products (eg single-names and indices); and
- open positions, ie buy or/and sell open positions in CDS referencing the debt of a particular credit, open positions in all CDS for a particular market participant, and open positions that are scheduled to mature in a given year.

Public reports also provide more granular information, at the reference entity or index level. Within Sections I and II of the weekly stock and volume reports, the Warehouse provides the top 1,000 most traded reference entities by gross notional amount, complemented by their respective net notional amount, the number of contracts and the relevant regional ISDA Determination Committee.<sup>104</sup> Section III displays information for single-name CDSs and indices with more than 50 transactions registered during the specified week. Section IV includes reports for the top 1,000 most traded reference entities by gross notional amount and for indices regarding market risk transfer activity.

### **The Global OTC Derivatives Interest Rate Trade Reporting Repository**

TriOptima's Global OTC Derivatives Interest Rate Trade Reporting Repository ("TriOptima Interest Rate Repository" or "IRR")<sup>105</sup> was established following an industry selection process managed by the International Swaps and Derivatives Association (ISDA) Rates Steering Committee in October 2009 and is regulated by the Swedish Financial Supervisory Authority. The IRR collects information on positions in the interest rate derivatives market.

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<sup>104</sup> A Determination Committee (DC) is mandated to resolve issues involving Reference Entities traded under Transaction Types that are relevant to the credit derivatives market as a whole. These resolutions pertain to Credit Events, CDS Auctions, Succession Events and Substitute Reference Obligations. A DC has been created for each of the following regions: the Americas, Asia excluding Japan, Japan, Australia-New Zealand and EMEA (Europe). Each DC is made up of global dealers, regional dealers and non-dealer ISDA members (<http://www2.isda.org>).

<sup>105</sup> For more information, see <http://www.trioptima.com>.

The IRR has been active since January 2010, when the first monthly reports were delivered to regulators. Additional selected data have been made available to the public on TriOptima's website since April 2010. The IRR is also a provider of post-trade services for OTC interest rate derivatives, including portfolio reconciliation and compression (TriResolve and TriReduce, respectively).

It should be noted that, after a request for proposal issued on 14 March 2011, the ISDA has finally selected DTCC's MarkitSERV as the next generation TR for interest rate derivatives. DTCC has committed to create a new TR for this class of derivatives by no later than the end of the third quarter of 2011.

#### *Eligibility of transactions and data collection*

Initially, during its launch phase, the IRR was open to the G14 dealers only. It then moved to an access open to any market participant wishing to record a transaction. In practice, only these 14 institutions are providing data to the IRR.

A specific snapshot of operational and position-level information is uploaded by the different categories of counterparties identified by the TR, ie Regulatory Tier (G14 dealers and those reporting firms whose information is reported to regulators) and Standard Tier. The IRR thus distinguishes between two types of reports, the Standard Tier and the Regulatory Tier reports:

- The Standard Tier report is a firm-specific report which is made available to the submitting firm and cannot be accessed by any other parties.
- Regulatory Tier reports include both firm-specific and industry-aggregated reports that are available to regulators and aim at fulfilling regulatory reporting obligations. Individual firms in the Regulatory Tier nominate which regulators, in accordance with their respective regulatory mandates, may access their firm-level reports. These reports form part of the firms' regulatory reporting requirement. The Regulatory Tier also provides regulators with access to an aggregated, industry report.

The IRR supports a broad range of interest rate derivatives, both cleared and non-cleared, including caps/floors, forward rate agreements, options, swaps, swaptions, cross-currency swaps and exotic transactions. Internal trades, such as intragroup transactions, are excluded from the IRR's scope. It collects position data on interest rate derivatives from submitting firms, which provide it with their total eligible population either every week (Regulatory Tier, the G14 dealers) or once every four weeks (Standard Tier).

Currently, transaction-level information is not reported to the IRR. Furthermore, data are uploaded on TriOptima's website as a snapshot of existing positions.

#### *Aggregation of data and public dissemination of interest rate derivatives data*

The IRR disseminates aggregated data to the public via weekly public reports. Aggregated information was initially disseminated to the public on a monthly basis. Since 8 October 2010, public reports have been available on a weekly basis, with a two-week reporting lag time. Public reports rely on data from firms in the Regulatory Tier and contain a series of tables showing aggregated industry data (outstanding gross notional and trade count) submitted by contributing organisations. No individual firm-specific reports are available to the general public.

The tables in such reports display position data by counterparty type, product category, trade currency and trade maturity throughout three aggregated summaries by: (i) product type; (ii) currency; and (iii) product type and maturity.

Each summary is broken down into three categories of market participants: (i) CCPs; (ii) the G14 dealers; and (iii) non-G14 dealers.

### *Regulators and submitting firms' access to interest rate derivatives data*

Specific reports regarding the firms in the Regulatory Tier are made available to appropriate regulators, in accordance with their respective regulatory mandates. These reports show gross notional and trade count volumes for each firm. In addition, a report based on anonymous, aggregated data across all firms within the Regulatory Tier is generated and made available to regulators. The information within all the reports is broken down by instrument type, currency and counterparty type. It should be noted that regulators other than the supervisors of the reporting dealers have access only to the aggregate information that is publicly disclosed.

Submitting firms, including G14 dealers, also have access to individual data, but limited to their own firm-specific reports.

### **The Equity Derivatives Reporting Repository**

The Equity Derivatives Reporting Repository (EDRR) was established in August 2010. It currently collects information on trades submitted by the G14 dealers in the following types of equity derivatives: options, equity, dividend, variance and portfolio swaps, contracts for difference, accumulators and a final category covering other structured products. Its creation followed a competitive request-for-proposal launched by the ISDA Equity Steering Committee in 2009. The EDRR is operated by DTCC Derivatives Repository Ltd, which, like Warehouse Trust, is a subsidiary of DTCC. The EDRR is designed to hold key position data, including product types, notional value, open positions and counterparty type indicators.

Industry participants have pursued a phased development approach for the EDRR. "Phase I", which ended on 30 July 2010, aimed at making data held by the EDRR available to regulators and participating firms, but did not include public dissemination. "Phase II" development will aim at implementing a long-run vision of the EDRR and involves data supplemental to the limited, basic reporting provided in "Phase I". "Phase II" requirements are currently being defined by market participants and are expected to improve the quality of data in the TR. "Phase II" is likely to include reporting of trade-level information to the TR by participating firms, in addition to the position-level data currently being reported.

#### *"Phase I" data requirements*

Like TriOptima's IRR, the EDRR captures only position-level and not transaction-level data. On a monthly basis, the EDRR provides both the designated regulators of the participating firm and participating firms themselves with a series of summary reports on the position data. These reports cover basic information regarding equity derivatives contracts, such as identification of the product, identification of the submitting firm, and basic position information, including notional amounts, currency and maturity profile.

Regulators have access to the reports in accordance with their respective regulatory mandates. Three different reports are made available to regulators:

- a participant report showing a summary of the open positions for each individual organisation;
- an aggregate report showing a summary of the aggregate positions for the firms that have the same designated regulatory authority; and
- an industry report showing a summary of the aggregate positions for all trading parties.

Participant firms' access is restricted in order to meet confidentiality requirements and is limited to their own participant report and the industry report.

### *“Phase II” potential additional data requirements*

At the present time, the additional information that would be required and provided by the TR to regulators in “Phase II” has not been decided. A logical build-out to improve data quality in the TR would be for participating firms to supply trade-level information to the EDRR in addition to position-level data. In this respect, the analysis conducted by the industry implementation group in consultation with the ODRF and currently under way contemplates the following additional fields:

- information about underlying reference entity or entities;
- underlyings;
- pairing details (an information field could be included for firms to indicate whether a trade is electronically matched at inception, subject to other confirmation and/or reconciliation service, paired in the repository or one-sided);
- sector and geography of underlying and geography of firm/counterparty – taking stock, for instance, of the approach used by the Warehouse;
- trade date, effective date, scheduled termination or exercise dates, settlement method and currency;
- expanded product category types and categories of participating firms; and
- market value of positions held by individual market participants.<sup>106</sup>

Supplemental guidance envisaged by the ODRF also encompasses an increase in the reporting frequency, state data reporting frequency to the EDRR being moved from monthly to daily, with a possible weekly frequency interim step. Additionally, a public reporting is expected to be made available by the end of 2011.

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<sup>106</sup> Market values are provided by market participants themselves or incorporated from external third-party pricing sources. In addition, detailed transaction-level data could be used by the TR to generate benchmark valuations internally.

**Annex 2:**  
**Illustrative list of potential data fields for OTC derivatives**

**Examples of data fields for commodity derivatives**

	Description
Unique transaction identifier	
Unique product identifier	Product type based on taxonomy of product.
Contract type	Eg forwards , options, swaps, other.
Identifier of reporting counterparty	
Identifier of non-reporting counterparty	
Counterparty origin	Indicator of whether a transaction was done on behalf of a customer or house account.
Parent counterparty	The parent company of the counterparty.
Cleared	An indicator of whether a contract has been cleared.
Clearing entity	Name of the clearing organisation where a contract was cleared.
Clearing exemption	Y/N. Are one or more counterparties to the contract transaction exempted from clearing?
Confirmed	An indicator of whether a contract has been confirmed by both parties.
Master agreement type	The type of master agreement that was executed.
Master agreement date	Date of the master agreement.
Effective date or start date	The date a contract becomes effective or starts.
Maturity, termination or end date	The day a contract expires.
Settlement method	The agreed-upon way of settlement.
Delivery type	Deliverable or non-deliverable.
Grade	Grade of product being delivered.
The amount and currency or currencies of any upfront payment	
A description of the payment streams of each counterparty	
Notional amount / total notional quantity	Total currency amount or total quantity in the unit of measure of an underlying commodity.
Notional currency / price currency	Notional currency.
Option type	Eg put, call, straddle.
Call, put or cancellation date	Information needed to determine when a call, put or cancellation may occur with respect to a transaction.
Option expiration date	Expiration date of the option.



**Examples of data fields for commodity derivatives (cont)**

	<b>Description</b>
Option premium	Fixed premium paid by the buyer to the seller.
Option premium currency	The currency used to compute the premium.
Option style	American, European, Bermudan, Asian.
Strike price (cap/floor rate)	The strike price of the option.
Value for options	The value of the option at the end of every business day.
Any other terms related to option	
Lockout period	Date of first allowable exercise.
Any other primary economic term(s) matched by the counterparties in verifying the contract	
<hr/>	
Order entry timestamp	The time and date when the order was entered.
Submission of order entry timestamp	The time and date when the order was sent to the platform to be executed.
Execution timestamp	The time and date when a contract was executed on a platform.
Submission timestamp for clearing	The time and date when a contract was submitted to a clearing organisation.
Clearing timestamp	The time and date when a contract was cleared.
Reporting date	The time and date when the transaction was submitted to the TR.
<hr/>	
Data elements necessary to determine market value of transaction	The value of the transaction at the required frequency.
Initial margin requirement	The initial margin requirement that has been required by the parties.
Maintenance margin requirement	The maintenance margin requirement that has been required by the parties.
Variation margin	The amount that is paid daily in order to mark the transaction to market.
Long option value	The long option value contained in the maintenance margin requirement.
Short option value	The short option value contained in the maintenance margin requirement.

**Examples of data fields for credit swaps**

	<b>Description</b>
Unique transaction identifier	
Unique product identifier	Product type based on taxonomy of product.
Contract type	Eg index swap, stock swap, basket swap.
Identifier of reporting counterparty	
Identifier of non-reporting counterparty	
An indication of the counterparty purchasing protection and of the counterparty selling protection	Eg option buyer and option seller; buyer and seller.
Information identifying the reference entity	The entity that is the subject of the protection being purchased and sold in the swap.
Counterparty origin	Indicator of whether a transaction was done on behalf of a customer or house account.
Parent counterparty	The parent company of the counterparty.
Parent originator	The parent company of the originator.
Cleared	An indicator of whether a contract has been cleared.
Clearing entity	Name of the clearing organisation where a contract was cleared.
Clearing exemption	Y/N. Are one or more counterparties to the contract transaction exempted from clearing?
Confirmed	An indicator of whether a contract has been confirmed by both parties.
Master agreement type	The type of master agreement that was executed.
Master agreement date	Date of the master agreement.
Effective date or start date	The date a contract becomes effective or starts.
Maturity, termination or end date	The day a contract expires.
Settlement method	The agreed-upon way of settlement.
Delivery type	Deliverable or non-deliverable.
The amount and currency or currencies of any upfront payment	
A description of the payment streams of each counterparty	
Notional amount / total notional quantity	Total currency amount or total quantity in the unit of measure of an underlying commodity.
Notional currency / price currency	Notional currency.
Payment frequency	How often the payments will be made.
Any other primary economic term(s) of the swap matched by the counterparties in verifying the swap	

**Examples of data fields for credit swaps (cont)**

	<b>Description</b>
Order entry timestamp	The time and date when the order was entered.
Submission of order entry timestamp	The time and date when the order was sent to the platform to be executed.
Execution timestamp	The time and date when a contract was executed on a platform.
Submission timestamp for clearing	The time and date when a contract was submitted to a clearing organisation.
Clearing timestamp	The time and date when a contract was cleared.
Reporting date	The time and date when the transaction was submitted to the TR.
Data elements necessary to determine market value of transaction	The value of the transaction at the required frequency.
Initial margin requirement	The initial margin requirement that has been required by the parties.
Maintenance margin requirement	The maintenance margin requirement that has been required by the parties.
Variation margin	The amount that is paid daily in order to mark the transaction to market.
Long option value	The long option value contained in the maintenance margin requirement.
Short option value	The short option value contained in the maintenance margin requirement.

**Examples of data fields for currency derivatives**

	<b>Description</b>
Unique transaction identifier	
Unique product identifier	Product type based on taxonomy of product.
Contract type	Eg swap, swaption, forwards, options, basis swap, index swap, basket swap, other.
Identifier of reporting counterparty	
Identifier of non-reporting counterparty	
Counterparty origin	Indicator of whether a transaction was done on behalf of a customer or house account.
Parent counterparty	The parent company of the counterparty.
Cleared	An indicator of whether a contract has been cleared.
Clearing entity	Name of the clearing organisation where a contract was cleared.
Clearing exemption	Y/N. Are one or more counterparties to the contract transaction exempted from clearing?
Confirmed	An indicator of whether a contract has been confirmed by both parties.
Master agreement type	The type of master agreement that was executed.
Master agreement date	Date of the master agreement.
Effective date or start date	The date a contract becomes effective or starts.
Maturity, termination or end date	The day a contract expires.
Settlement method	The agreed-upon way of settlement.
Delivery type	Deliverable or non-deliverable.
Currency 1	ISO code.
Currency 2	ISO code.
Notional amount 1	For currency one.
Notional amount 2	For currency two.
Settlement agent of the reporting counterparty	ID of the settlement agent.
Settlement agent of the non-reporting counterparty	ID of the settlement agent.
Settlement currency	If applicable.
Exchange rate 1	At the moment of trade/agreement.
Exchange rate 2	At the moment of trade/agreement, if applicable.
Option type	Eg put, call, straddle.
Call, put or cancellation date	Information needed to determine when a call, put or cancellation may occur with respect to a transaction.

**Examples of data fields for currency derivatives (cont)**

	<b>Description</b>
Option expiration date	Expiration date of the option.
Option premium	Fixed premium paid by the buyer to the seller.
Option premium currency	The currency used to compute the premium.
Option style	American, European, Bermudan, Asian.
Strike price (cap/floor rate)	The strike price of the option.
Value for options	The value of the option at the end of every business day.
Any other terms related to option	
Lockout period	Date of first allowable exercise.
Any other primary economic term(s) matched by the counterparties in verifying the contract	
Order entry timestamp	The time and date when the order was entered.
Submission of order entry timestamp	The time and date when the order was sent to the platform to be executed.
Execution timestamp	The time and date when a contract was executed on a platform.
Submission timestamp for clearing	The time and date when a contract was submitted to a clearing organisation.
Clearing timestamp	The time and date when a contract was cleared.
Reporting date	The time and date when the transaction was submitted to the TR.
Data elements necessary to determine market value of transaction	The value of the transaction at the required frequency.
Initial margin requirement	The initial margin requirement that has been required by the parties.
Maintenance margin requirement	The maintenance margin requirement that has been required by the parties.
Variation margin	The amount that is paid daily in order to mark the transaction to market.
Long option value	The long option value contained in the maintenance margin requirement.
Short option value	The short option value contained in the maintenance margin requirement.

### Examples of data fields for equity derivatives

	Description
Unique transaction identifier	
Unique product identifier	Product type based on taxonomy of product.
Contract type	Eg forwards and options on index and stocks, other.
Identifier of reporting counterparty	
Identifier of non-reporting counterparty	
Counterparty origin	Indicator of whether a transaction was done on behalf of a customer or house account.
Parent counterparty	The parent company of the counterparty.
Cleared	An indicator of whether a contract has been cleared.
Clearing entity	Name of the clearing organisation where a contract was cleared.
Clearing exemption	Y/N. Are one or more counterparties to the contract transaction exempted from clearing?
Confirmed	An indicator of whether a contract has been confirmed by both parties.
Master agreement type	The type of master agreement that was executed.
Master agreement date	Date of the master agreement.
Effective date or start date	The date a contract becomes effective or starts.
Maturity, termination or end date	The day a contract expires.
Settlement method	The agreed-upon way of settlement.
Delivery type	Deliverable or non-deliverable.
The amount and currency or currencies of any upfront payment	
A description of the payment streams of each counterparty	
Notional amount / total notional quantity	Total currency amount or total quantity in the unit of measure of an underlying commodity.
Notional currency / price currency	Notional currency.
Option type	Eg put, call, straddle.
Call, put or cancellation date	Information needed to determine when a call, put or cancellation may occur with respect to a transaction.
Option expiration date	Expiration date of the option.
Option premium	Fixed premium paid by the buyer to the seller.
Option premium currency	The currency used to compute the premium.
Option style	American, European, Bermudan, Asian.

**Examples of data fields for equity derivatives (cont)**

	<b>Description</b>
Strike price (cap/floor rate)	The strike price of the option.
Value for options	The value of the option at the end of every business day.
Any other terms related to option	
Lockout period	Date of first allowable exercise.
Any other primary economic term(s) matched by the counterparties in verifying the contract	
Order entry timestamp	The time and date when the order was entered.
Submission of order entry timestamp	The time and date when the order was sent to the platform to be executed.
Execution timestamp	The time and date when a contract was executed on a platform.
Submission timestamp for clearing	The time and date when a contract was submitted to a clearing organisation.
Clearing timestamp	The time and date when a contract was cleared.
Reporting date	The time and date when the transaction was submitted to the TR.
Data elements necessary to determine market value of transaction	The value of the transaction at the required frequency.
Initial margin requirement	The initial margin requirement that has been required by the parties.
Maintenance margin requirement	The maintenance margin requirement that has been required by the parties.
Variation margin	The amount that is paid daily in order to mark the transaction to market.
Long option value	The long option value contained in the maintenance margin requirement.
Short option value	The short option value contained in the maintenance margin requirement.

**Examples of data fields for interest rate swaps**

	<b>Description</b>
Unique transaction identifier	
Unique product identifier	Product type based on taxonomy of product.
Contract type	Eg swap, swaption, forwards, options, basis swap, index swap, basket swap, other.
Identifier of reporting counterparty	
Identifier of non-reporting counterparty	
Counterparty origin	Indicator of whether a transaction was done on behalf of a customer or house account.
Parent counterparty	The parent company of the counterparty.
Cleared	An indicator of whether a contract has been cleared.
Clearing entity	Name of the clearing organisation where a contract was cleared.
Clearing exemption	Y/N. Are one or more counterparties to the contract transaction exempted from clearing?
Confirmed	An indicator of whether a contract has been confirmed by both parties.
Master agreement type	The type of master agreement that was executed.
Master agreement date	Date of the master agreement.
Effective date or start date	The date a contract becomes effective or starts.
Maturity, termination or end date	The day a contract expires.
Settlement method	The agreed-upon way of settlement.
Delivery type	Deliverable or non-deliverable.
The amount and currency or currencies of any upfront payment	
A description of the payment streams of each counterparty	Eg coupons.
Notional amount / total notional quantity	Total currency amount or total quantity in the unit of measure of an underlying commodity.
Notional currency / price currency	Notional currency.
Payer (fixed rate)	Is the reporting party a fixed rate payer? Yes / no / not applicable.
Direction	For swaps – if the principal is paying or receiving the fixed rate. For float-to-float and fixed-to-fixed swaps, it is unspecified. For non-swap instruments and swaptions, the instrument that was bought or sold.
Fixed rate	
Fixed rate day count fraction	



**Examples of data fields for interest rate swaps (cont)**

	<b>Description</b>
Fixed leg payment frequency	How often the payments on the fixed leg will be made.
Floating rate payment frequency	
Floating rate reset frequency	
Floating rate index name/rate period	
Option type	Eg put, call, straddle.
Call, put or cancellation date	Information needed to determine when a call, put or cancellation may occur with respect to a transaction.
Option expiration date	Expiration date of the option.
Option premium	Fixed premium paid by the buyer to the seller.
Option premium currency	The currency used to compute the premium.
Option style	American, European, Bermudan, Asian.
Strike price (cap/floor rate)	The strike price of the option.
Value for options	The value of the option at the end of every business day.
Any other terms related to option	
Lockout period	Date of first allowable exercise.
Any other primary economic term(s) matched by the counterparties in verifying the swap	
Order entry timestamp	The time and date when the order was entered.
Submission of order entry timestamp	The time and date when the order was sent to the platform to be executed.
Execution timestamp	The time and date a contract was executed on a platform.
Submission timestamp for clearing	The time and date when a contract was submitted to a clearing organisation.
Clearing timestamp	The time and date a contract was cleared.
Reporting date	The time and date the transaction was submitted to the TR.
Data elements necessary to determine market value of transaction	The value of the transaction at the required frequency.
Initial margin requirement	The initial margin requirement that has been required by the parties.
Maintenance margin requirement	The maintenance margin requirement that has been required by the parties.
Variation margin	The amount that is paid daily in order to mark the transaction to market.
Long option value	The long option value contained in the maintenance margin requirement.
Short option value	The short option value contained in the maintenance margin requirement.

### Examples of the functional approach with minimum data fields

<b>Operational data</b>	
Transaction number	
Master agreement type	The type of master agreement that was executed.
Master agreement date	Date of the master agreement.
Settlement agent of the reporting counterparty	ID of the settlement agent.
Settlement agent of the non-reporting counterparty	ID of the settlement agent.
Cleared	An indicator of whether a contract has been cleared.
Clearing entity	Name of the clearing organisation where a contract was cleared.
Clearing exemption	Y/N. Are one or more counterparties to the contract transaction exempted from clearing?
Confirmed	An indicator of whether a contract has been confirmed by both parties.
Electronic platform-traded	An indicator of whether a contract has traded on an electronic platform.
Electronically matched	An indicator of whether a contract has been electronically matched.
<b>Product information</b>	
Contract type	Eg swap, swaption, forwards, options, basis swap, index swap, basket swap, other.
Grade	Grade of product being delivered.
Option type	Eg put, call, straddle.
Option style	American, European, Bermudan, Asian.
<b>Counterparty information</b>	
Identifier of reporting counterparty	
Identifier of non-reporting counterparty	
Counterparty origin	Indicator of whether a transaction was done on behalf of a customer or house account.
Parent counterparty	The parent company of the counterparty.
Parent originator	The parent company of the originator.
<b>Underlier information</b>	
Registering authority	The authority with which the underlying security is registered.
Security type	The underlying security type, viz debt, stock, etc.
Country of issuer	

**Examples of the functional approach with minimum data fields (cont)**

<b>Transaction economics</b>	
Effective date or start date	The date a contract becomes effective or starts.
Maturity, termination or end date	The day a contract expires.
Settlement method	The agreed-upon way of settlement.
Delivery type	Deliverable or non-deliverable.
The amount and currency or currencies of any upfront payment	
A description of the payment streams of each counterparty	Eg coupons.
Notional amount / total notional quantity	Total currency amount or total quantity in the unit of measure of an underlying commodity.
Notional currency / price currency	Notional currency.
Payer (fixed rate)	Is the reporting party a fixed rate payer? Yes / no / not applicable.
Direction	For swaps – if the principal is paying or receiving the fixed rate. For float-to-float and fixed-to-fixed swaps, it is unspecified. For non-swap instruments and swaptions, the instrument that was bought or sold.
Fixed rate.	
Fixed rate day count fraction.	
Fixed leg payment frequency	How often the payments on the fixed leg will be made.
Floating rate payment frequency.	
Floating rate reset frequency.	
Floating rate index name/rate period.	
Currency 1	ISO code.
Currency 2	ISO code.
Notional amount 1	For currency one.
Notional amount 2	For currency two.
Settlement currency	If applicable.
Exchange rate 1	At the moment of trade/agreement.
Exchange rate 2	At the moment of trade/agreement, if applicable.
Call, put or cancellation date	Information needed to determine when a call, put or cancellation may occur with respect to a transaction.
Option expiration date	Expiration date of the option.
Option premium	Fixed premium paid by the buyer to the seller.
Option premium currency	The currency used to compute the premium.
Strike price (cap/floor rate)	The strike price of the option.
Value for options	The value of the option at the end of every business day.
Any other primary economic term(s) matched by the counterparties in verifying the swap	

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**Examples of the functional approach with minimum data fields (cont)**

Event data	
Order entry timestamp	The time and date when the order was entered.
Submission of order entry timestamp	The time and date when the order was sent to the platform to be executed.
Execution timestamp	The time and date when a contract was executed on a platform.
Submission timestamp for clearing	The time and date when a contract was submitted to a clearing organisation.
Clearing timestamp	The time and date when a contract was cleared.
Reporting date	The time and date when the transaction was submitted to the TR.

## **Annex 3: Information regarding possible implementation of a system of legal entity identifiers**

### **Industry initiatives relating to LEIs**

An industry-led, international consultation process aiming to create an LEI for OTC derivatives counterparties in the near future is currently under way. At its April 2011 meeting in Washington DC, the Task Force received information concerning this initiative from representatives of AFME and SIFMA, and from a representative of ISO, which includes delegates from the national standards institutes of 157 countries. ISO's Technical Committee 68, which oversees the international standards related to financial services, voted in February 2011 to issue a new LEI standard for use by the financial sector, and has initiated a "fast track" process for adoption of technical and operational requirements.

### **Reference data for LEIs**

Practical usefulness of LEIs as a data aggregation tool for authorities requires that LEIs be associated with two types of reference data. These include: (a) certain minimum reference data needed to verify the legal entity to which an LEI is assigned; and (b) more extensive reference data that identify affiliate relationships of the entity or provide additional information relating to the entity that is needed by authorities for data aggregation purposes (eg the entity's industrial sector).

### **Identification data**

The minimum reference data needed to identify the legal entity receiving an LEI, on a verifiable basis, should include the entity's legal name, perhaps the form of corporate organisation, the registered address of the entity's headquarters, and other relevant contact information. It should also include at least some types of information concerning the entity's relationship to affiliated legal entities. It might also include certain specialised reference data concerning the status of the entity; for example, identification of the entity as a broker-dealer where this is the case. The registration agent performing verification should follow robust and consistent operational processes in order to ensure the reliability of LEIs. In order to verify the identity of the entity, primary documentation backing up identification reference data will be required. Verification may also be aided through exchange of information with national authorities with whom the entity is required to register. It may be necessary for ongoing, iterative verification of entity identity by users of the LEI system that all or at least some of these identification data be publicly available. To ensure uniqueness, the process would need to include verification that the entity has not already received an LEI.

Verification of identification data can follow either of two conceptual approaches or models, known as (a) self-registration and (b) contribution. Under the self-registration model, each entity seeking an LEI submits its own information to the registration agent that issues LEIs. Under the contribution model, a systemically important entity (for example, a G14 dealer) that has multiple clients and multiple counterparties in financial transactions can submit both its own information and the information of its clients and counterparties to the registration agent. In either approach, the information provided must be validated or "scrubbed" by the registration agent. If the contribution model is followed, overlap between the client/country lists of the contributing entities will provide both double-checks on other information and create a need to map together different information concerning the same entity. The contribution model can offer a faster route to issuance of identifiers across a class of recipients (eg counterparties to OTC derivatives), since rates of self-submission of information can vary among entities. The self-registration model offers opportunities for an

entity to confirm the validity of information already received by the registration agent concerning that entity. Some data experts suggest that the best solution for verification of identification data may be a combination of both approaches.

### **Hierarchical relationship data and other reference information**

The more extensive reference data that identify the affiliate relationships of an entity receiving an LEI which are needed for effective use of LEIs by authorities as a data aggregation tool would include, at a minimum, information identifying an entity's parent entities, subsidiaries, and other affiliates that are counterparties to derivatives or other financial transactions.<sup>107</sup> Authorities may also require other relationship information concerning an entity receiving an LEI, such as information on relationships created by master agreements, credit support agreements or guarantee agreements. Information of all these types may be necessary to enable authorities to aggregate data across entities and markets for the purpose of monitoring systemic risk.

The continuing accuracy of such reference information will be crucial to its effective regulatory use. Therefore, providers of these types of reference information should be required to update the information often enough for it to be current and accurate at all times.

Ensuring the confidentiality of these more extensive types of reference information is also important, since under some national laws such information is protected from public disclosure. It may therefore be necessary for this more extensive reference data set to be available only to financial authorities in the relevant jurisdictions, while remaining confidential with respect to the public.

### **Phased implementation of reference data for LEIs**

Some data experts have suggested that creation of these two different sets of reference data could be accomplished in phases or stages. As an initial step, it may be more practicable to focus international efforts on creation of an LEI coupled with the limited reference data necessary to identify the legal entities to which LEIs are assigned. Such an LEI could then become a principal building block for later establishment of the broader set of hierarchical reference data.<sup>108</sup>

Fulfilling the systemic risk monitoring, transparency and market supervision purpose established by the G20 will also require eventual availability of hierarchical reference data associated with LEIs. After the establishment of an LEI for counterparties, it could be useful for an international consultative process under the auspices of an appropriate international standard-setting body to take up the issue of how the hierarchical reference data needed for effective use of LEIs to aggregate data should be collected and provided to authorities.

### **Centralised versus decentralised issuance of identifiers**

Generally, there are two conceptual approaches or models that could be followed in the issuance of LEIs: a centralised issuance model, and a federated or decentralised issuance model.

A common model for a centralised approach would be for LEIs to be issued and governed by a pair of organisations, acting in tandem: (a) a registration agent which performs the

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<sup>107</sup> In the context of LEIs that identify OTC derivatives counterparties, affiliations would include the identity of all legal entities that own the counterparty, that are under common ownership with the counterparty, or that are owned by the counterparty.

<sup>108</sup> This phased approach was suggested by a number of participants at the recent roundtable on LEIs convened by the US Commodity Futures Trading Commission on 28 January 2011, including the ECB, SWIFT, technology providers such as Avox/DTCC and Bloomberg, and derivatives dealers such as Goldman Sachs.

functions of issuing LEIs, verifying the identity of entities receiving LEIs, and maintaining the reference data needed for verification purposes; and (b) an international standards body which supervises the work of the registration agent and ensures that LEIs are issued in accordance with appropriate principles.<sup>109</sup> The registration agent would be a unique point of passage for each LEI and for the identification data (and eventually the hierarchical relationship data) associated with each LEI. The supervising international standards body would ensure that all LEI-related activities of the registration agent follow a global set of internationally accepted standards and principles for LEIs.

Data experts have suggested that the registration agent should have experience with identifiers, infrastructure in place usable for issuing identifiers, and appropriate technical competence. They have also recommended that the registration agent should be a neutral, permanent body operated as a non-profit utility, under international governance. The registration agent would need to adhere to appropriate principles of system security in order to ensure the reliability and confidentiality of all data associated with the LEI process.

Major stakeholders in the financial sector have suggested that the identification system that includes LEIs be overseen by an international voluntary consensus standards body. An international voluntary consensus standards body is an international organisation which plans, develops, establishes or coordinates voluntary consensus standards using agreed-upon procedures. Such a body has the attributes of openness, balance of interest, due process, and consensus, defined as general agreement, but not necessarily unanimity, including a process for attempting to resolve objections from interested parties.<sup>110</sup>

A centralised approach to LEI issuance would not exclude appropriate national jurisdiction with respect to LEIs. Under the centralised model, an international voluntary consensus standards body could issue addresses and oversee the entire process (in a manner analogous to the issuance of internet addresses). The registration process would be conducted and controlled by the registration agent of that body. Each national jurisdiction could (if desired) implement location regulations concerning the identification system, as long as the regulations were additional, but not contradictory, to the international rules for issuance.

Under the federated approach, a central authority such as an international voluntary consensus standards body would govern and supervise the overall issuance process, to ensure that all identifiers follow the same principles. However, assignment of particular LEIs to particular entities would be done on a federated basis, rather than through a single registration agent. The code or numbering space for the identifiers would be divided among national or regional authorities, each of which would be identified by the first few characters of the LEI, in a fashion analogous to international telephone dialling codes. Each national or regional authority would issue LEIs to legal entities under its jurisdiction, subject to supervision by the international voluntary consensus standards body. The uniqueness of these prefixes for the various authorities would ensure the uniqueness of LEIs issued by different authorities.<sup>111</sup> A variable-length coding system could be used to ensure extensibility.

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<sup>109</sup> See the transcript of the roundtable on LEIs convened by the US Commodity Futures Trading Commission on 28 January 2011, available at [http://www.cftc.gov/ucm/groups/public/@swaps/documents/dfsubmission/dfsubmission\\_012811\\_460\\_0.pdf](http://www.cftc.gov/ucm/groups/public/@swaps/documents/dfsubmission/dfsubmission_012811_460_0.pdf).

<sup>110</sup> See eg United States Office of Management and Budget Circular No. A-119 Revised, 10 February 1998.

<sup>111</sup> The federated approach could also be extended to parent companies within a national jurisdiction. If this approach were followed, the national authority would issue a range of LEI codes to a parent company, which would in turn issue individual LEIs to legal entities within the parent company. The characters in the LEI code immediately following the first characters that identify the national authority would identify the issuing parent company (without embedded intelligence). One drawback of this approach is that its high level of complexity may increase the risk of errors in the issuance process or result in issuance of non-unique LEIs.