

# Systemic Risk Monitoring and Prudential Supervision

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The 2008 financial crisis revealed significant problems with the functioning of over-the-counter (OTC) derivatives markets. In the years and months leading up to the crisis market participants were able to build up large counterparty risk exposures to AIG Financial Products and other highly interconnected institutions. When these institutions ran into trouble in the fall of 2008, lack of transparency contributed to a breakdown in the functioning of some segments of the OTC swaps market. While most firms presumably had a clear understanding of their own direct exposures to particular troubled institutions, they could not clearly identify the exposures of other potential trading partners to those institutions. Faced with an environment in which they did not know who was at risk and who wasn't, many market participant simply chose to withdraw from trading for a time, harming market liquidity and thereby making it more difficult for all firms to manage their risks. Following the global financial crisis, the Group of Twenty (G20) leaders agreed to undertake a range of financial market reforms including specific commitments aimed at improving the transparency of OTC derivatives markets to financial regulators by requiring that transaction data be reported into trade repositories. This note describes how the Federal Reserve Board currently makes use of OTC derivatives transaction data to support our financial stability and prudential supervision functions and outlines some of the challenges we face in fully exploiting these data.

In September 2009, the G20 leaders committed to a long list of reforms aimed at strengthening the foundations of the world's financial system. Among these were commitments that by year-end 2012 all sufficiently standardized OTC derivatives contracts should be traded on exchanges or electronic trading platforms and cleared through central counterparties and that all OTC derivatives contracts should be reported to trade repositories. In its October 2010 report, *Implementing OTC Derivatives Reforms*, the Financial Stability Board enumerated the benefits of having swaps data reported to trade repositories.

*By providing information to authorities, market participants and the public, trade repositories will be a vital source of increased transparency in the market, and support authorities in carrying out their responsibilities, including (i) assessing systemic risk and financial stability; (ii) conducting market surveillance and enforcement; (iii) supervising market participants; and (iv) conducting resolution activities.*

In the United States, the G20 trade reporting commitment is being implemented through Title VII of the Dodd-Frank Act, which requires that data on swaps transactions involving US entities be reported to registered Swap Data Repositories (SDRs) regulated by the Securities and Exchange Commission (SEC) or the Commodity Futures Trading Commission (CFTC). The European Market Infrastructure Regulation (EMIR) includes similar requirements for swaps involving European entities. In November 2014 the Financial Stability Board reported that, overall, 13 of 19 FSB member jurisdictions (treating all European Union members as a single jurisdiction) had trade repositories in place that were permitted to receive transaction data for at least some derivatives asset classes.

The Federal Reserve Board is currently using data on credit default swap transactions from the Depository Trust and Clearing Corporation's (DTCC's) Global Trade Repository to monitor the CDS market with an eye towards identifying developments that may constitute sources of systemic risk. We approach this problem in two ways: by monitoring the risk exposures of individual institutions that may be systemically important, and by monitoring the network structure of the CDS market as a whole.

At the micro level, we use trade repository data to monitor individual institutions' exposures to counterparties and market risk factors. We examine institutions' exposures to their trading counterparties by measuring the notional value of trading positions with other market participants with respect to single-name reference entities and CDS indexes, broader industry sectors, and the CDS market as a whole. We monitor the exposure of individual institutions to important market risk factors by examining the net notional value of their positions with all counterparties at the same levels of aggregation (reference entity, industry and total market). In addition, we aggregate information on the maturity dates of institutions' CDS positions for relevant sub-markets (corporates, sovereigns, etc) to understand how those institutions would be affected by shifts in the term structure of CDS spreads. Similarly, we track institutions' net positions in the CDS tranche market to understand how they would be affected by changes in market implied correlation of default rates across reference entities.

We apply network analysis tools to identify sources of risk concentration and frailty in the CDS market. We use measures of degree centrality to identify individual buyers or sellers

within the network of bilateral CDS positions that are particularly highly interconnected to other market participants. Network-wide centrality statistics tell us how buy-side and sell-side network concentration has changed over time. Other network statistics, such as clustering coefficients and measures of connectedness, provide information on the extent to which trading is intermediated through third parties and on the robustness of the network structure to the removal of key nodes. While the economic interpretation of these types of reduced-form network statistics is not well developed, tracking them over time helps us to understand how the structure of the CDS market is evolving.

Although data on substantially all credit and interest rate swaps are currently housed in a trade data repository run by the Depository Trust and Clearing Corporation, there is no guarantee that this situation will persist as new, competing, trade repositories come online. Furthermore, individual regulators including the Federal Reserve are currently restricted from accessing some data housed in trade repositories. The Federal Reserve Board is currently able to access DTCC CDS data for trades involving the firms that we supervise, leaving significant segments of the CDS market opaque to us. This problem is likely to get worse over time, as more transactions move onto exchanges and electronic trading platforms and are cleared through central counterparties that are not directly supervised by the Federal Reserve. The Federal Reserve does not currently have access to non-public interest rate swaps data held in trade repositories. The Federal Reserve is by no means the only regulatory authority that has faced challenges related to trade repository data access. In its *6<sup>th</sup> Progress Report on OTC Derivatives Market Reforms* (November 2013) the FSB identified a wide range of legal provisions in member jurisdictions that pose impediments to regulators' access to trade repository data.

International standards-setting bodies have worked to address barriers to swaps data aggregation and sharing so that relevant authorities can access the scope of data needed to gain a holistic view of derivatives markets. In August 2013, the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) issued a report on the types of data that authorities require access to in order to satisfy their legal mandates; the report also discussed confidentiality concerns and other access constraints. Also in August 2013, the Financial Stability Board established the Aggregation Feasibility Study Group (AFSG) to examine options for combining data across trade repositories to facilitate systemic risk monitoring, market surveillance and other applications. The AFSG identified important benefits from a mechanism under which trade repositories would provide a centralized aggregator with certain types of access to data which could then be aggregated, masked and shared with relevant authorities as appropriate. However, the AFSG report also cited legal barriers in a number of jurisdictions to sharing data with a central aggregator. For example, section 728 of the Dodd-Frank Act requires the

conclusion of an indemnification agreement before a US swap data repository (SDR) can share data. This provision may prevent an SDR from transferring data to a global aggregator.

Following the AFSG report, the CPMI and IOSCO established a Harmonization Working Group to address technical barriers to the aggregation of data across OTC derivative trade repositories. This group is currently working to support the development of a system of universal transaction identifiers (UTIs) and universal product identifiers (UPIs) as well as common data fields to facilitate aggregation of data across trade repositories.

The Federal Reserve's experience using OTC derivatives trade repository data suggests that detailed data on bilateral swaps positions can be an important source of information on the risk exposures of systemically important institutions and the health of vital financial markets. Legal and technical barriers to the access and aggregation of data reported into trade repositories has posed significant challenges for the Federal Reserve and other financial regulators, however. The Financial Stability Board and international standards setting bodies continue to work to address these challenges.