Financial Stability Board Consultation Paper

"Feasibility study on approaches to aggregate OTC derivatives trade repository data"

Comments by Steve Suppan

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Introduction

The Institute for Agriculture and Trade Policy (IATP)¹ is a non-governmental, non-profit organization with a general and particular interest in data aggregation to improve the effectiveness of regulation for financial stability. Our particular interest is to enhance the price risk management capacity of commercial hedgers in agricultural derivatives contracts by reducing, and if possible, preventing excessive speculation in those contracts.² Distortion of price formation by excessive speculation is a contributing factor to food and energy insecurity, particularly in net import dependent developing countries.³

Over the Counter commodity derivatives contracts accounted for just \$3 trillion of the reported \$693 trillion global OTC gross notional value at end of June 2013.⁴ However, commercial hedgers, commodity prices, and hence food and energy security, are affected not only by prices, but by the foreign exchange, interest rate and other derivatives data that will be aggregated for regulator surveillance by the approaches discussed in the Consultation Paper (CP). Therefore, to serve our particular interest in agricultural commodity derivatives regulation, our general interest in the data aggregation practices required for financial stability likewise must be served.

IATP congratulates and thanks the Aggregation Feasibility Study Group (AFSG) for producing a thought-provoking and comprehensive CP that surveys and explores the legal and technical challenges to global aggregation of OTC data. As the U.S. NGO Better Markets commented of a Committee on Payments and Settlements/International Organization of Securities Commissions (CPSS/IOSCO) consultation paper, aggregation is not mere data compilation, but "involves the organization of raw transaction data into categories using a common language so that derivatives markets can be meaningfully analyzed, monitored, and in the event of insolvencies, protected by orderly resolution of portfolios."⁵

It is no exaggeration to say that if the Financial Stability Board fails to agree on an effective and comprehensive aggregation mechanism, the Group of 20 Leaders' commitments to regulate OTC derivatives will remain unfulfilled. Furthermore, if OTC broker dealers are able to avoid comprehensive aggregation and surveillance of their transactions, economies will remain vulnerable to the kind of economic calamity that resulted from the 2007-2009 crisis of Systematically Important Financial Institutions (SIFIs) and their government and corporate OTC swaps participants.

IATP was part of a delegation from the Financial Stability Board Watch⁶ that discussed data aggregation, among other issues, in a very useful meeting with the FSB Secretary General and his staff in June 2013. Much of our experience in commenting on data aggregation issues is limited to commodity position aggregation in the proposed position limits regime of the U.S. Commodity Futures and Trading Commission.⁷ However, we hope that the following comments will assist the deliberations of the AFSG as they propose a data aggregation policy option for possible adoption by the FSB's members.

IATP greatly appreciates the opportunity to comment on this CP whose problem, comprehensive and standardized data aggregation, is urgently in need of a solution that is not only technically and legally, but also politically feasible. The political environment is an integral – albeit not explicit – aspect of the overall CP. According to Simon Johnson, a former chief economist at the International Monetary Fund, foreign regulators and central bankers told him during the 2013 IMF annual meeting that cross-border regulation would "never" occur or "not in my lifetime." While Johnson's informal survey is anecdotal, we believe it is indicative of the skepticism about, if not opposition to, global governance of OTC derivatives markets, and above all OTC trade data. Because global data aggregation standards and an aggregation mechanism are key components of the cross border application of domestic regulations, IATP believes that there will be regulator, central banker and broader political resistance to the AFGS policy option for a physically centralized model of aggregation (Option 1).

Option 1 potentially presents the means to the most market efficient, timely and regulator useful form of data aggregation. However, even with optimal good will and creativity among regulators and central bankers to overcome the legal and technical obstacles outlined by the AFSG to realizing Option 1, the very choice of the physical site alone of Option 1 likely could occasion a political fight whose decision-makers will not be limited to regulators and central bankers. A prolonged battle could impede and delay urgently needed regulator and central banker cooperation for globally effective OTC derivatives regulation. Indeed, that battle could impede or even prevent cooperation needed on other FSB issues.

More particularly, and indeed, parochially, because the pain inflicted on the U.S. economy by the SIFIs and major OTC swaps participants has been measured with some precision, we fear that there will be U.S. political resistance to supporting Option 1. For example, a recent study by three Federal Reserve Bank of Dallas economists "conservatively estimate" \$6-14 trillion dollars of damage to the U.S. economy alone from the 2007-2009 SIFI crisis. At the upper end of their estimate, that's \$120,000 for every man, woman and child in the U.S. The global economic damage caused by the SIFI de facto defaults and the fiscal consequences of that damage, have yet to be estimated. Furthermore, the opportunity costs of \$30 trillion U.S. publicly funded mostly SIFI rescues¹⁰, and other publicly funded rescues have yet to be estimated.

However, if and when, these estimates emerge, they could be used as cannon fodder <u>against</u> the creation of globally effective data aggregation. Those who would prevent or weaken global data aggregation could argue for Option 1 and claim that the location of Option 1 should be the jurisdiction that suffered most and/or rescued most in absolute terms, as a result of the SIFI crisis. Officials from jurisdictions that suffered from and/or rescued "their" SIFIs proportionately would likely disagree.

In sum, as a result of the forgoing political prognosis, regretfully, IATP would not support an AFSG recommendation to the FSB to pursue Option 1. And, as the CP outlines (7 et passim) and we argue further below, Option 2, "a logically centralized model of aggregation" can provide many of the regulatory requirements for effective and comprehensive aggregation without inciting the politically motivated and polarizing debate that is latent in Option 1. Lastly, as the implementation of Option 2 progresses, FSB members may decide that adding data centralization to the Option 2 array of aggregations standards and functionalities is desirable, as well as feasible. At such a point in time, the political environmental for a centralized location for OTC data may have improved to the point where Option 1 is no longer politically controversial.

Methodology of the Consultation Paper

In general, the methodology of the CP is exemplary of what a feasibility study should be, and is consistent with the FSB terms of reference. The working definitions of data aggregation, the assumptions made about the role of global aggregation relative to existing Trade Data Repositories (TDRs) and the stocktake of

existing TDRs are accurate and, with one notable exception, comprehensive. We agree with the CP assumption that "Even once reporting requirements are in place in all jurisdictions, no single authority or body will have a truly global view of the OTC derivatives market, even on an anonymized, aggregate basis, unless a global aggregation mechanism is developed" (CP, 10).

Towards realizing a comprehensive stocktaking, the CP would benefit from an asset class specific analysis of FSB member exemptions from data aggregation, based on inputs from FSB members and a literature review of reasons for and financial stability consequences of regulatory grants of exemption. IATP is familiar with the history of U.S. Commodity Futures Trading Commission reporting and aggregation exemptions for commodity derivatives contracts, and indeed, exempt markets, prior to the Dodd Frank Wall Street Reform and Consumer Protection Act. We also have been engaged with the current CFTC rulemaking on position aggregation and financial industry proposals for broad position aggregation exemptions for OTC broker dealers. The AFSG should consider expanding its stocktaking to include a survey of G-20 data aggregation exemptions for contracts derived from the value of all underliers, including interest rates, foreign exchange rates, equities and mixed asset class underliers (i.e. mixed swaps), as well as commodities.

A survey of aggregation exemptions and an analysis of their presumptive logic in the context of measures to enhance financial stability could be placed in a section 2.2.1 of the revised CP, subsumed under "Available data fields and data gaps". Underlying the logic of exemptions from aggregation, clearing and other regulatory requirement is the claim that OTC contracts must be "customized" to meet client demands. It is further often claimed that such contracts cannot be reported in standardized formats in near real time, as is required of exchange traded derivatives contracts. The CP notes, "the distinction between standardized and bespoke contracts is reported in only one [G-20] jurisdiction" (II)." The FSB Compendium of Standards currently does not have a standard for "customized" or "bespoke" contracts. The AFSG should consider proposing to the FSB that it undertake work on developing such a standard, both for the purpose of furthering progress on data aggregation and other components of the FSB mandate.

An FSB agreement on an aggregation mechanism should not wait for a prior agreement on a standard for customized OTC contracts. However, a standard on customization will be a prerequisite for the effective and comprehensive operation of all three options presented by the AFSG. As the AFSG notes, "Standards form the basis for the interoperability of derivatives data; they are agnostic to choice of aggregation option as they are a prerequisite for every option" (CP, 29). IATP very strongly agrees with this position.

Identification of aggregation requirements

The CP identifies and evaluates briefly a broad array of aggregation requirements that would apply in some measure to all three policy options for aggregation. Here we briefly state our support for some of the AFSG identified requirements, and comment on a few of the challenges for agreeing on regulatory standards to achieve those requirements.

First, IATP agrees that development of a standard for transaction reporting terms is crucial for the data harmonization required for aggregation. We believe that determining "whether a transaction is a price-forming trade" may require further definition beyond what is suggested in footnote 9 to "Box I: illustration of data aggregation requirements". For example, to what extent are High Frequency Trading of OTC derivatives price-forming? Determining whether OTC commodity derivatives traded HFT provide price forming information or merely "noise" to elicit large trader positions for subsequent arbitraging will be a challenge for an agreement on a Universal Transaction Identifier (UTI). IATP agrees that a UTI standard is an essential component of data aggregation for many purposes, including efficient elimination of duplicate data reporting from TDRs to regulators (CP, 15).

The CP states, "Very few jurisdictions have developed data standards for commodity derivatives, particularly the definition of the underlier" (CP, 10). Even where there are such standards, sometimes there is

unnecessary contract proliferation – e.g. 177 electricity derivatives contracts¹² – leading to an unnecessary administrative burden of reporting for market participants and of surveillance for regulators. IATP agrees with those jurisdictions that have suggested to the AFSG that development of a Universal Product Identifier (UPI) would facilitate accurate, timely and efficient data integration, traceability and surveillance by removing duplicate data reporting.

IATP believes that the AFSG identified requirements for product standardization are well-characterized (CP, 35-36). The requirement that likely will present the greatest challenge to product standardization is agreeing on a "governance process for adding new values to the identification system, recognizing that new products will come into being over time" (36). A related challenge is developing criteria to identify whether and how new products might present greater potential for regulatory evasion.

The gross notional value of OTC contracts that the Bank for International Settlements classifies as "unallocated" according to product class has fallen during the past three years. However, "unallocated" contracts still accounted for about \$25 trillion of OTC gross notional value, which indicates that there remains ample justification for UPI standardization and UPI specific reporting.¹³

Finally, the development of a Legal Entity Identifier (LEI), currently in progress, will have many regulatory purposes. But a key purpose is to make transaction level data anonymous yet useful to regulators. The CP presents two ways to anonymize data. The CP states that once data is fully anonymized, it becomes impossible to determine when there is duplicate reporting of OTC transactions and impossible to sum up OTC counterparty positions (15-16). Both because of the need to eliminate duplicate TDR reporting to authorities and of the need for authorities and market participants to reconstruct market events, IATP prefers the AFSG presented option for partial anonymization.

Legal considerations

As FSB members and the AFSG know better than anyone, the structure of SIFIs and even of many smaller and less interconnected private financial firms, is pervasively global. For example, the seven largest U.S. headquartered bank holding companies, all major OTC derivatives dealers, have about 5,700 foreign subsidiaries in dozens of foreign jurisdictions.¹⁴ Nevertheless, one of the themes in the foreign regulator opposition to the CFTC's guidance to industry and foreign regulators for its cross-border application of Dodd-Frank authorized rules has been that, save for narrow exceptions, "as a principle, local regulations should not be extended beyond national borders." Surely, one of these exceptions is the transmission of TDR data to regulators and the sharing of such data for aggregation and other regulatory purposes. We strongly agree with the AFSG assumption that it is very unlikely that personal data of private individuals would be transmitted to satisfy regulatory requirements for an aggregation mechanism (CP, 20). Invocation of possible seizure of such personal data by regulators as a legal reason for the FSB not to agree on an aggregation mechanism is an argument with little, if any, evidence to support it.

The CP accurately summarizes federal or even sub-federal legal requirements that could impede or even prevent TDR data transmission to an aggregation mechanism. We agree that the transmission of fully anonymized data would prevent the aggregation mechanism from eliminating duplicate reporting from TDRs and from calculating positions and exposures (CP, 21). Therefore, we prefer the aggregation design mechanism of having partially anonymized data transmitted from TDRs via regulators with jurisdictional authority over those TDRs.

Our brief case against recommending Option 3 to the FSB

In our view, AFSG Option 3, "Collection of raw data from local TR databases by individual authorities that then aggregate the data themselves within their own systems" (7) and share that data with other regulators

per bilateral Memoranda of Understanding (MoU), is a policy option that reflects the status quo. Option 3 is inadequate for timely and comprehensive aggregation of data overwhelmingly generated by Automatic System Trading practices. Even if Option 3 were amended to require regulator data sharing per the CPSS/IOSCO voluntary guidelines, rather than according to bilateral MoUs, we could not support an AFSG recommendation to the FSB to pursue Option 3.

Option 3 outlines a method for data aggregation with potential for OTC broker dealer regulatory arbitrage among aggregation standards of differing degrees of comprehensiveness and rigor. The CPSS/IOSCO voluntary guidelines for regulator data sharing¹⁶ put a heavy burden of proof on regulators in Jurisdiction A to demonstrate to regulators in Jurisdiction B that they require access to TDRs in Jurisdiction B. As the AFSG notes, a conservative interpretation of regulator access to TDRs "could lead to arbitrary decisions regarding the evaluation of [regulator] mandates, as well as what kind of data should be shared for each mandate" (CP, 29). In our view, such arbitrary decisions, particularly if they become retaliatory, would result in ineffective global aggregation, particularly in cases of regulatory slowdown or breakdown, whether due to intra or intergovernmental problems.¹⁷

For routine data surveillance, Regulator A may require access to Jurisdiction B TDRs to verify compliance with Jurisdiction A's cross border OTC derivatives requirements by Jurisdiction A registered OTC dealer brokers trading in Jurisdiction B. Or a regulator in Jurisdiction A may apply for TDR access in Jurisdiction B to pursue an investigation of a prima facie rule violation by a Jurisdiction A registered OTC dealer broker trading on a Jurisdiction B venue. A regulator in Jurisdiction B may decide that the Regulator A petition for TDR access in Jurisdiction B to be based on insufficient documentation and/or a regulatory mandate that a regulator in Jurisdiction B finds insufficient. For example, OTC dealer broker product "innovations" and uncleared OTC swaps of a certain volume and value might trigger regulatory surveillance without documentation sufficient to indicate probative cause of a violation.

In sum, IATP does not believe that realization of Option 3 will result in the global aggregation required to enable regulator surveillance to prevent the kinds and scale of OTC counterparty default cascades that characterized the 2007-2009 SIFI crisis and the broader economic aftermath in which we still live. As the annual report of the Bank for International Settlements stated, "in 2012, the general conditions in the banking sector are similar to the conditions that prevailed after the collapse of Lehman Brothers." Furthermore, there is little evidence of positive change in the SIFI risk culture. According to a recent BIS research article, "We find no evidence that that rescued banks reduced the riskiness of their new lending more than non-rescued banks in response to the crisis and the public rescues." A global aggregation model and management more comprehensive and rigorous than is possible under Option 3 will be required to identify the build-up of over-leveraged positions before the purpose of aggregation becomes to help enable the orderly resolution of portfolios held by insolvent institutions.

Feasible global governance of data aggregation: Option 2

Option 2, "a logically centralized model of aggregation" offers a functional framework for global governance of OTC trade data without the pitfalls of a political battle over the location of data storage and the technological challenge of securing that data as cyber-crime technology evolves (CP, 40). By no means do we wish to minimize the legal and technical challenges for FSB members to agree on "which information would be incorporated into central logical/catalogue index for logical centralisation and access" (CP, 25) as needed by FSB member authorities. Nor will it be easy for the FSB to agree on a management structure for an aggregation mechanism whose federation of TDRs is articulated by an aggregation index that will serve the regulatory requirements for OTC data surveillance and analysis of all FSB member regulators. But Option 2, as a federated model of aggregation, has the very great virtue of building up from "local knowledge, expertise and existing infrastructure," just as has the Global Legal Entity Identity (LEI) Initiative (CP, Box 2, 26).

Because "aggregation of TR data is a more complex task than the generation of an LEI code" (CP, 25), IATP does not believe that the public-private partnership model of management adopted for the LEI initiative is suitable for Option 2. Having a private entity manage and presumably modify the Option 2 index for "logical centralization and access" of data, overseen by a college of public authorities from the FSB members, would require both a more complex legal structure and less necessity of FSB member cooperation for the daily management of Option 2.

There is an urgent need for intensive and routine FSB member cooperation on aggregation and other FSB issues. As the Senior Supervisors' Group recently reported to the FSB, "Five years after the financial crisis, firms' progress toward consistent, timely, and accurate reporting of top counterparty exposures fails to meet both supervisory expectations and industry self-identified best practices. The area of greatest concern remains firms' inability to consistently produce high-quality data." FSB oversight of a public entity to implement Option 2 would enable organization and analysis of OTC trade data among FSB member regulators. IATP believes that Option 2 offers the best framework for FSB regulators to push OTC counterparties to produce the high quality data required for timely and comprehensive aggregation.

In the current environment of distrust of cross-border application of domestic regulations, public measures to regulate financial markets and products are proposed as causes for investor lawsuits adjudicated by private tribunals. For example, under the proposed Transatlantic Trade and Investment Partnership, U.S. Federal Reserve Bank requirements for capital reserve requirements for foreign banks operating in the United States could be subject to TTIP's investor-state dispute settlement mechanism.²¹

We believe that the operationalization of Option 2 by a public entity whose staff would be at least partly drawn from FSB regulators would reduce the current environment of distrust of cross-border regulation by public authorities. The success of Option 2 implementation could diminish pressure on FSB regulators to grant broad aggregation exemptions and not to aggregate and evaluate OTC trade data comprehensively and with the required granularity, lest they be subject to a lawsuit by OTC broker dealers before an investor state tribunal. The vague investor state dispute definition of "investor" would give OTC broker dealers the legal standing to argue that such aggregation and consequent regulatory actions would deprive them of anticipated benefits under a proposed financial services chapter in TTIP.

IATP proposes that Option 2 be managed by a public entity with a FSB board, including representatives from the FSB Regional Consultative Groups (RCGs). This board would be advised by a consultative group of OTC broker dealers and derivatives end users, including both for profit entities and non-profit entities, such as representatives of sub-federal officials, of pension funds, of commercial hedger associations and other non-profit groups who rely on OTC derivatives to manage financial and commercial risks. The FSB Aggregation Mechanism Board should create an ombudsman office, perhaps housed in the FSB Secretariat, to respond to public queries and complaints about Aggregation Mechanism Board decisions and the staff operation of the Aggregation Mechanism.

Conclusion: assessing the options to aggregate OTC derivatives data

There is much in the CP, e.g. the "Principles of data management to facilitate proper data aggregation," to which we can add little or nothing but our thanks for a job very well done. We conclude with two observations.

First, Emerging Markets and Developing Economies (EMDEs) are under-represented in the AFSG, among the non-AFSG contributors to the report, and particularly among the participants to the AFSG outreach workshop. The FSB is monitoring potential impacts of the G-20 OTC derivatives reforms on EMDEs and has reached out to the EMDEs through the FSB Regional Consultative Groups (RGGs).²² The FSB recently reported, "The main concerns among EMDEs centre around the potential impact of those reforms on domestic financial intermediation and ensuring adequate home-host coordination."²³ Because of the often

repeated threats by global OTC broker dealers to migrate trades to EMDE jurisdictions²⁴, the host-home coordination between parent entities and their subsidiaries poses a challenge to data aggregation in cases where small OTC derivatives markets become bigger in jurisdictions with small regulatory capacity, few standards on data quality and/or regulator access to data. IATP recommends that the FSB reach out through the RGSs to survey EMDE readiness to regulate potentially larger OTC derivatives markets, particularly regarding data aggregation and reporting to a global aggregation mechanism.

Second, AFSG outreach workshop participants on a panel considering Option 2 "mentioned several additional benefits of the logically centralized model, in terms of scalability, tailoring to local needs and cost reduction through competition, but also warned that many [aggregation] initiatives have failed due to costs" (53). As the FSB, together with IOSCO and CPSS, deliberate on whether to initiate work on data aggregation according to one of the three AFSG presented options or according to another option proposed in comments on the CP, IATP hopes that the FSB will not be deterred from aggregation due to its costs. The FSB monitoring report on EMDEs cites the BIS econometric estimate of OTC reform benefits and costs. ²⁵ IATP never tires of citing this study, according to which the macroeconomic benefits of OTC regulation were estimated to be about four times the costs of regulation (our emphasis). ²⁶ Nevertheless, we encourage the AFSG to contact those workshop participants to find out which previous aggregation initiatives failed, why and at what cost.

IATP looks forward to reading the AFSG final assessment and recommendations on aggregation, and to contributing however we can to the realization of greatly improved data aggregation and OTC derivatives regulation.

¹ IATP is a U.S. nonprofit, 501(c)(3) nongovernmental organization, headquartered in Minneapolis, Minn., with an office in Washington, D.C. Our mission states, "The Institute for Agriculture and Trade Policy works locally and globally at the intersection of policy and practice to ensure fair and sustainable food, farm and trade systems." To carry out this mission, as regards commodity market regulation, IATP has participated in the Commodity Markets Oversight Coalition (CMOC) since 2009, and the Derivatives Task Force of Americans for Financial Reform since 2010. IATP has submitted several comments on U.S. Commodity Futures Trading Commission rulemaking, and on consultation papers of the International Organization of Securities Commissions, the European Securities and Markets Authority, and the European Commission's Directorate General for Internal Markets.

² Excessive Speculation in Agriculture Commodities: Selected Writings 2008-2011, Institute for Agriculture and Trade Policy, April 28, 2011. http://www.iatp.org/files/2012 ExcessiveSpeculationReader web.pdf

³ E.g. see the annotated bibliography compiled by Markus Henn, "Evidence on the Negative Impact of Commodity Speculation by Academics, Analysts and Public Institutions," November 26, 2013, WEED. Available at http://www2.weed-

online.org/uploads/evidence_on_impact_of_commodity_speculation.pdf. Also *The State of Food Insecurity in the World: How does international price volatility affect domestic economies and food security?* United Nations Food and Agriculture Organization, 2011.

http://www.fao.org/docrep/014/i2330e/i2330e.pdf

⁴ "OTC derivatives statistics at end June 2013", Bank for International Settlements, November 2013, at 9. http://www.bis.org/publ/otc_hy1311.pdf

http://dallasfed.org/assets/documents/research/staff/staff1301.pdf

http://www.levyinstitute.org/pubs/wp 698.pdf

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2237392

http://www.newyorkfed.org/research/epr/12v18n2/1207avra.pdf

- "Letter on cross-border OTC derivatives regulation," to U.S. Secretary Jacob Lew from EC Commissioner Michel Barnier and eight G-20 finance ministers, April 18, 2013, Annex: principles for cross-border swaps, available at http://www.iatp.org/files/letter_on_cross-border_otc_derivatives_reform_-_18_april_2013.pdf
- ¹⁶ "Authorities access to trade depository data," Committee on Payment and Settlement Systems and International Organization of Securities Commissions, April 2013, Annex A: Illustrative template for Data Request Form http://www.iosco.org/library/pubdocs/pdf/IOSCOPD408.pdf?v=1
- ¹⁷ In the final report of the AFSG, we trust that the following will be corrected, "the general form of a [data] request has to be defined as well as the protocol for analyzing and interpreting it to allow meaningless aggregation of data" (CP, 30). We believe that the AFSG meant to write "meaningful" rather than "meaningless".
- ¹⁸ http://www.bis.org/publ/arpdf/ar2012e6.pdf at 64.
- ¹⁹ Michael Brei and Blaise Gadanecz, "Have Public Bailouts Made Banks' Loan Books Safer?" *Banks for International Settlements Quarterly Review*, September 2012, 62.

http://www.bis.org/publ/qtrpdf/r_qt1209h.pdf

- ²⁰ "Progress Report on Counterparty Data," Senior Supervisors Group, January 15, 2014, https://www.financialstabilityboard.org/publications/r 140116.pdf
- ²¹ "Barnier Says TTIP Deal 'Won't Work' If It Leaves Out Financial Regulations," *Inside U.S. Trade*, July 15, 2013. Yalman Onaran, "Fed Adopts Foreign Bank Rules As World Finance Fragments," Bloomberg News, February 19, 2014.

⁵ Comment on Committee on Payment Systems and Settlements/International Organization of Securities Commissions "Report on OTC Data Reporting and Aggregation Requirements", Better Markets, September 23, 2011, 3-4. https://www.bettermarkets.com/sites/default/files/CPSS-%20IOSCO-%20CL-%20OTC%20Derivatives%20Data%20Reporting%209-23-11.pdf

⁶ http://fsbwatch.org/index.php/fsb-programs

⁷ E.g., http://comments.cftc.gov/PublicComments/ViewComment.aspx?ID=59704&GUID=e998b25c-76ea-43b3-906b-0d61a0e49872

⁸ Simon Johnson, "Big Banks' Tall Tales," *Gulf Times*, April 26, 2013. http://www.gulf-times.com/opinion/189/details/350483/big-banks%E2%80%99-tall-tales

⁹ Tyler Atkinson, David Lutrell and Harvey Rosenblum, "How Bad Was It?: The Costs and Consequences of the 2007-2009 Financial Crisis," Federal Reserve Bank of Dallas, July 2013.

¹⁰ E.g., James Andrew Felkerson, ""\$29,000,000,000,000: A Detailed Look at the Fed's Bailout by Funding Facility and Recipient," Levy Economics Institute, Working Paper 698, December 2011.

¹¹ Vladimir Filiminov, David Bichetti, Nicolas Maystre, Didier Sornette, "Quantification of the High Level of Endogeneity and Structural Regime Shifts in Commodity Markets," March 20, 2013.

¹² Gregory Meyer, "Big bets on power cleared by regulator," Financial Times, January 21, 2014.

¹³ Table 1, "OTC derivatives statistics at end June 2013", Op. cit.

¹⁴ Dafna Avraham, Patricia Selvaggi and James Vickery, "A Structural View of U.S. Bank Holding Companies", *FBRNY Economic Policy Review*, July 2012, Table 1: "Number and distribution of subsidiaries: Selected Top 50 Bank Holding Companies", 71.

²² "Monitoring the effects of agreed OTC derivatives reforms on emerging markets and developing economies (EMDEs)", Financial Stability Board, September 12, 2013, 6-8. http://www.financialstabilityboard.org/publications/r 130912.pdf

²³ Ibid., 7.

²⁴ Rachel Armstrong, "As Dodd-Frank looms, Asian banks look to cut U.S. trading ties," Reuters, August 20, 2012. http://www.reuters.com/article/2012/08/19/us-asia-regualtion-derivatives-idUSBRE87I0A720120819; Patrick Jenkins and Megan Murphy, "Goldman in Europe warning," *Financial Times*, September 30, 2010; Gregory Meyer and Aline van Duyn, "US banks' plea on swap rules," *Financial Times*, March 17, 2011 and Tom Braithewaite, "New York lawmakers warn Bernanke over derivatives rules," *Financial Times*, May 18, 2011, etc.

²⁵ *Op cit.,* footnote 17.

²⁶ "Macro-economic costs and benefits of OTC derivatives regulatory reform", Bank for International Settlements, August 2013, 2. http://www.bis.org/publ/othp20.pdf