DODD-FRANK TURNS FIVE: ASSESSING THE PROGRESS OF GLOBAL DERIVATIVES REFORMS

HEARING

BEFORE THE

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HOUSE OF REPRESENTATIVES

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DODD-FRANK TURNS FIVE: ASSESSING THE PROGRESS OF GLOBAL DERIVATIVES REFORMS

WEDNESDAY, JULY 29, 2015

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:01 a.m., in Room 1300 of the Longworth House Office Building, Hon. K. Michael Conaway [Chairman of the Committee] presiding.

Members present: Representatives Conaway, Rogers, Gibbs, Austin Scott of Georgia, Davis, Yoho, Allen, Bost, Abraham, Moolenaar, Newhouse, Kelly, Peterson, Walz, McGovern, DelBene, Vela, Kuster, Nolan, Bustos, Kirkpatrick, Plaskett, Adams, Graham, and Ashford.

Staff present: Caleb Crosswhite, Carly Reedholm, Haley Graves, Jackie Barber, Kevin Webb, Mollie Wilken, Paul Balzano, Scott C. Graves, Faisal Siddiqui, Liz Friedlander, Matthew MacKenzie, and Nicole Scott.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

The CHAIRMAN. Good morning. This hearing on the Committee on Agriculture, *Dodd-Frank Turns Five: Assessing the Progress of Global Derivatives Reforms,* will come to order. Please join me in a brief prayer. Heavenly Father, we thank you, Lord, for the privileges of being able to represent the folks we represent for our districts. We ask, Lord, that we honor that trust that they put in us as we consider things before the Committee today. Give us wisdom, and knowledge, and discernment that we might come to the right conclusions. Forgive us where we fail, Lord. We ask these things in Jesus's name, amen.

Thank you for being here today and joining us in this full Committee hearing. The 2008 financial crisis prompted global leaders to re-evaluate the regulatory regime for derivatives. In Pittsburgh, and again in Cannes, global leaders set out five categories of reforms—clearing, margining, electronic execution, data reporting, and capital standards—they all agreed would make derivatives markets much safer. Perhaps most importantly, though, the G20 leaders recognized the global nature of swaps markets, and sought to ensure that national regulators coordinated these reform efforts.

In 2008, at the close of the first G20 summit in Washington, the assembled heads of state declared: "our financial markets are global in scope, therefore intensified international cooperation among regulators, and strengthening of international standards were necessary, and their consistent implementation is necessary to protect against adverse cross-border, regional and global developments affecting international financial stability. Regulators must ensure that their actions support market discipline, avoid potentially adverse impacts on other countries, including regulatory arbitrage, and support competition, dynamism, and innovation in the marketplace."

G20 leaders continued to push for cooperation, and cooperation between regulators, at every subsequent G20 meeting, including in the joint announcement following the 2013 St. Petersburg summit, where G20 leaders spoke about the importance of deferring to national regulators. They said, "We agree that jurisdictions and regulators should be able to defer to each other, when it is justified, by the quality of the respective regulatory and enforcement regimes based on similar outcomes, in a non-discriminatory way, paying due respect to home country regulation regimes."

As we mark the fifth anniversary of the Dodd-Frank Act, it is important that we take stock of where we were and where we are trying to get to by enacting this legislation. The G20 laid out a road map that demanded international action to respond to an international crisis, but left it to national regulators to implement that vision. Over the past several years the Agriculture Committee has heard from market participants, CFTC Commissioners, and even foreign regulators about the struggles national regulators are having living up to the proclamations of the G20.

Today the Committee is concerned that the lack of coordination and harmonization is jeopardizing the implementation of these promised and widely sought reforms to global swaps markets. If we get these reforms wrong, we will permanently disrupt global financial markets, trapping liquidity behind regulatory barriers, and preventing end-users from seeking out their best risk management counterparts. Splintering global financial markets through regulatory pride-of-authorship is not reform, it is bureaucratic hubris. If that is the ultimate outcome of the Dodd-Frank Act, regulators will have squandered the responsibility to which they were entrusted. Today we will begin to examine the progress global regulators have made with derivatives reforms and what work remains to be done, where the perils are for market participants. And I look forward to the testimony of our witnesses.

In the background of this debate looms the continued inaction of the Congress on the expired authorization of the CFTC. I consider it a failure of our institution to allow Federal agencies to operate outside the traditional budget process of authorization, appropriation, and oversight. That is why I set an ambitious agenda this spring to re-authorize all of our expired or expiring programs and agencies. Together we got our work done, we moved the four bills through the Committee and the House floor, re-authorizing everything within our jurisdiction that needed to be done this year.

For the CFTC, this Committee has done its work twice over the past 2 years, and moved two bipartisan re-authorization packages through the House of Representatives, with no corresponding action in the Senate. Despite the lack of authorization, appropriations to the agencies have increased, from $194 million at the end of Fiscal Year 2013 to $250 million this year, a 29 percent increase in 2 years.

To that end, I want to publicly state I am opposed to any increase in funding for the Commission until it is re-authorized. Both the House and the Senate Appropriations Committee have proposed level funding for the agency, and I do not believe it is appropriate to have any conversation that moves that line, while so many end-users and good government issues remain outstanding and unresolved. This is not a position I take lightly, which I hope highlights the importance in which I hold the re-authorization of every agency and program under the jurisdiction of this Committee.

[The prepared statement of Mr. Conaway follows:]

PREPARED STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Thank you all for joining us today and welcome to today's full Committee hearing, *Dodd-Frank Turns Five: Assessing the Progress of Global Derivatives Reforms.*

The 2008 financial crisis prompted global leaders to reevaluate the regulatory regime for derivatives. In Pittsburgh and again in Cannes, global leaders set out five categories of reforms—clearing, margining, electronic execution, data reporting, and capital standards—they all agreed would make derivatives markets safer.

Perhaps most importantly though, the G20 Leaders recognized the global nature of swaps markets and sought to ensure that national regulators coordinated these reform efforts. In 2008, at the close of the first G20 Summit in Washington, the assembled Heads of State declared:

> . . . our financial markets are global in scope, therefore, intensified international cooperation among regulators and strengthening of international standards, where necessary, and their consistent implementation is necessary to protect against adverse cross-border, regional and global developments affecting international financial stability. Regulators must ensure that their actions support market discipline, avoid potentially adverse impacts on other countries, including regulatory arbitrage, and support competition, dynamism and innovation in the marketplace.

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As we mark the fifth anniversary of the Dodd-Frank Act, it is important that we take stock of where we were and where we were trying to get to by enacting this legislation. The G20 laid out a roadmap that demanded international action to respond to an international crisis, but left it to national regulators to implement that vision.

Over the past several years, the Agriculture Committee has heard from market participants, CFTC Commissioners, and even foreign regulators about the struggles national regulators are having living up to the proclamations of the G20. Today, the Committee is concerned that the lack of coordination and harmonization is jeopardizing the implementation of these promised and widely supported reforms to global swaps markets.

If we get these reforms wrong, we will permanently disrupt global financial markets, trapping liquidity behind regulatory barriers and preventing end-users from seeking out their best risk management counterparts. Splintering global financial markets through regulatory pride-of-authorship is not reform, it is bureaucratic hubris. If that is the ultimate outcome of the Dodd-Frank Act, regulators will have squandered the responsibility with which they have been entrusted.

Today, we'll begin to examine what progress global regulators have made with derivatives reforms, what work remains to be done, and where the pitfalls are for market participants. I look forward to the testimony of our witnesses.

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To that end, I want to publicly state I am opposed to any increase in funding for the Commission until it is reauthorized. Both the House and Senate Appropriations Committees have proposed level funding for the agency, and I do not believe it is appropriate to have any conversation that moves that line while so many end-user and good-government issues remain outstanding and unresolved. This is not a position I take lightly, which I hope highlights the importance in which I hold the reauthorization of every agency or program under the jurisdiction of this Committee.

The CHAIRMAN.With that, I yield to the Ranking Member for any opening statement he has.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

Mr. PETERSON. Well, thank you, Mr. Chairman, and I thank the panel for being here to visit with us today. It has, as you said, been about 7 years since the financial crisis, and 5 years since this Committee finished our work on Title VII of Dodd-Frank. In that time the CFTC has finished 50 of the 60 rules required by Title VII. Central clearing, margin, price transparency are now the rule, rather than the exception, in the swaps market. And as a result of Title VII the derivatives market, as a whole, is now much safer for end-users, consumers, market participants and taxpayers than they were 7 years ago.

Still, there is much work to be done. I look forward to hearing our witnesses' views on the areas that need more work, particularly what they feel would be the most appropriate role for Congress to support Chairman Massad in his efforts to coordinate the CFTC's rules with those of foreign regulators. I think he has done a good job. He has been a good leader in that effort, and I do want to make sure that whatever action we take enhances that effort, and the progress that he has made.

I also want to hear the witnesses' views on how we can help to improve the Dodd-Frank's trade data reporting regime. Reporting is very important, and it is non-controversial, but it is no secret that it isn't working as well as it should, that something needs to be done in that area. So, again, Mr. Chairman, thank you for the hearing, and I yield back.

The CHAIRMAN. I thank the gentleman. The chair would request that other Members submit their opening statements for the record so that our witnesses may begin testimony to ensure there is ample time for questions.

I would like to welcome to our witness table today Mr. Terry Duffy, Executive Chairman and President of CME Group, Chicago

Illinois, Mr. Scott O'Malia, the Chief Executive Officer, International Swaps and Derivatives Association, Inc. of New York, Mr. Christopher Edmonds, Senior Vice President, Financial Markets, IntercontinentalExchange in Chicago, Mr. Larry Thompson, Vice Chairman and General Counsel, Depository Trust and Cleaning Corporation of New York, and Dr. John Parsons, Senior Lecturer, MIT Sloan School of Management, Cambridge, Massachusetts.

Mr. Duffy, you may begin when you are ready.

STATEMENT OF HON. TERRENCE A. DUFFY, EXECUTIVE CHAIRMAN AND PRESIDENT, CME GROUP, CHICAGO, IL

Mr. DUFFY. Thank you, Chairman Conaway, Ranking Member Peterson, Members of the Committee. I appreciate the opportunity to offer CME Group's perspective on the G20 commitments, and whether the U.S. and global regulators are meeting them.

Since Congress passed the Dodd-Frank Act, the U.S. has imposed a clearing mandate for certain swaps. Today they are traded transparently on futures exchanges and SEFs, which are swaps execution facilities, cleared through central clearing houses, and reported. These developments represent progress towards the goals of the G20 to strengthen the financial system through reforms that increase transparency and reduce systemic risk.

But the point of the G20 commitments was also to create a global framework. As of today, many G20 nations have not implemented the core elements of the G20 regulatory reforms that the U.S. has in our Dodd-Frank Act. This lack of coordination has led to policies that have created inconsistency, uncertainty, and the potential to harm efficient functioning of the U.S. and global derivatives markets.

A few examples would be, first, in the European Union, the current lack of recognition for U.S. clearing houses will prevent EU participants from clearing EU mandated products in the United States. This will prevent U.S. clearing houses from competing for this global business. And it is clearly unfair, given the way the European and other foreign clearing houses have been able to compete for U.S. business arising from our Dodd-Frank mandate.

Of equal concern, the lack of recognition of U.S. exchanges by the European Union has begun to drive some trading out of the United States. I suggested to this Committee many years ago, when I was testifying, that this was exactly what was going to happen, and we are seeing that happen today. I am hopeful that the U.S. and European Union will achieve resolution on the equivalence issue in the coming months. This would give participants the regulatory certainty they need to effectively manage their global risks.

Second, global coordination is also essential for an effective position limits regime. If the CFTC adopts an overly prescriptive position limits rule when other G20 nations have not, price discovery and risk management for U.S. commodities will likely move abroad. For end-users that stay in the United States, their cost to hedge will be significantly higher due to the potential lack of liquidity, and the spread is widening.

Before closing I want to raise one other issue that is contrary to the objectives of the G20 commitments, and that is the leverage ratio rule adopted by the Basel Committee and the U.S. Federal

Reserve. The rule mistakenly fails to recognize the risk reducing effect of segregated margin. Instead, the rule penalizes the use of central clearing houses by banks on behalf of their clients. It forces banks to overstate their leverage exposure, and hold more capital against their client clearing activities. This is the case even when those activities cannot, as a matter of law, increase the bank's leverage exposure.

Under this rule, the current calculation of leverage ratio results in better treatment for higher risk products, such as credit default swaps, *versus* agriculture or other commodity futures. This makes absolutely no practical sense whatsoever. Making clearing more expensive, and less successful, for end-users is directly contrary to the objectives of the G20 commitments. For the G20 commitments to work globally, each member nation needs to have a workable cross-border regulatory framework. CFTC Chairman Timothy Massad has been a leader in working with his counterparts among the G20 member nations to address that.

In closing, an effective cross-border regulatory framework does not mean that regulators of G20 nations must be identical. The key is to whether each nation's rules achieve the G20 commitments. In the global market, the goal should be for nations to adopt frameworks that lead to consistent regulation, and the results that allow for appropriate substitutable compliance. I want to thank the Chairman and the Members of the Committee for the time. I look forward to answering your questions.

[The prepared statement of Mr. Duffy follows:]

PREPARED STATEMENT OF HON. TERRENCE A. DUFFY, EXECUTIVE CHAIRMAN AND PRESIDENT, CME GROUP, CHICAGO, IL

Good morning Chairman Conaway, Ranking Member Peterson. I am Terry Duffy, Executive Chairman and President of CME Group.[1] Thank you for the opportunity to offer our perspective on the G20 commitments and whether U.S. and global regulators are meeting them.

As we know, the G20 Leaders agreed in 2009 to strengthen the financial system through reforms that increase transparency and reduce systemic risk in the over-the-counter (OTC) derivatives market. To achieve these commitments, the G20 agreed to implement reforms requiring:

- **Reporting:** All OTC derivatives should be reported;
- **Trading and Clearing:** All standardized OTC derivatives should be traded on exchanges or electronic trading platforms, and cleared through central counterparties; and
- **Margin and Capital:** Uncleared OTC derivatives should be subject to higher capital requirements and minimum margin requirements should be developed.

Since Congress passed the Dodd-Frank Act in 2009, the U.S. has made tremendous progress towards fulfilling its G20 Commitments. A clearing mandate has been implemented for certain rates and credit default swaps, swaps are trading on execution venues, and swaps are reported to trade repositories.

[1] CME Group Inc. is the holding company for four exchanges, CME, the Board of Trade of the City of Chicago Inc. ("CBOT"), the New York Mercantile Exchange, Inc. ("NYMEX"), and the Commodity Exchange, Inc. ("COMEX") (collectively, the "CME Group Exchanges"). The CME Group Exchanges offer a wide range of benchmark products across all major asset classes, including derivatives based on interest rates, equity indexes, foreign exchange, energy, metals, agricultural commodities, and alternative investment products. The CME Group Exchanges serve the hedging, risk management, and trading needs of our global customer base by facilitating transactions through the CME Group Globex electronic trading platform, our open outcry trading facilities in New York and Chicago, and through privately negotiated transactions subject to exchange rules.

There is more work to be done. A core tenet of the G20 Commitments was to develop a global framework for the regulation of OTC derivatives. The lack of consistency in both substance and timing of regulatory reforms between the U.S. and other G20 nations that have yet to implement many OTC regulatory reforms has led to uncertainty and the potential for harm to the efficient functioning of the U.S. and global derivatives markets. We and the other G20 nations must move carefully to avoid undermining this objective.

Here are a few examples where policymakers and regulators must work to better align national and international policies governing the regulation of OTC derivatives markets.

EU Equivalency Standards

Among the most critical issues facing the CFTC today is the potential for the United States to be denied status as a country whose regulations are equivalent to Europe's. CME operates futures exchanges, clearinghouses and reporting facilities in the U.S. and United Kingdom, and our U.S. futures products reach over 150 jurisdictions across the globe. Cross-border access is a core part of our global business strategy. CME has long been a strong supporter of mutual recognition regimes that (i) eliminate legal uncertainty, (ii) allow cross-border markets to continue operating without actual or threatened disruption, (iii) afford U.S.-based and foreign-based markets and market participants equal flexibility, and (iv) promote a level playing field.

Historically, both the U.S. and EU have mutually recognized each other's regulatory regimes to promote cross-border access. Recently, however, the European Commission has taken a different approach. Under European law, U.S. clearinghouses and exchanges—like CME—must first be recognized by European regulators in order to be treated the same as EU clearinghouses and exchanges. The European Commission is conditioning its recognition of U.S. derivatives laws as equivalent to European law on demands for harmful regulatory changes by the U.S. that would impose competitive burdens on U.S., but not EU, clearinghouses and exchanges, and would harm both U.S. and EU market participants. This refusal to recognize U.S. derivatives laws as equivalent is already having a negative impact on liquidity in our markets by creating trading disincentives and barriers to entry. As a result, diminished liquidity leads to higher hedging costs for commercial end-users in the U.S. and ultimately higher commodity prices paid by U.S. consumers.

After more than 2 years of negotiation and delay, the EU still has refused to grant U.S. equivalence. Since his arrival at the CFTC, Chairman Massad has been a tremendous leader in working toward a solution that avoids market disruption and affords U.S. and foreign-based markets equal flexibility. Yet, the EU continues to hold up the U.S. equivalence determination over the single issue of differing initial margining standards for clearinghouses. The specific U.S. margin standards in question are an important component, but not the only component, of a robust regulatory structure under the CFTC's oversight. And even considering just this component of the margin standards, the U.S. rules generally require equal, if not more, margin to be posted with clearinghouses to offset exposures than is the case under the EU rules. We applaud Chairman Massad's effective testimony on this issue before the European Parliament last May. Nonetheless, the European Commission has thus far insisted that the U.S. accept EU margin requirements. As Chairman Massad recently stated, "[The CFTC has] offered a substituted compliance framework for clearinghouse regulation which was [the European Commission's] principal concern. I believe there is ample basis for [the European Commission] to make a determination of equivalence and I hope that they will do so soon."

By contrast, the European Commission recently granted "equivalent" status to several jurisdictions in Asia, including Singapore, which has the same margin regime as the U.S. Treating the U.S. as not equivalent when the European Commission has deemed the same margin requirements equivalent in Singapore illustrates clearly the hypocritical and inconsistent position the European Commission is taking.

Harmonized Global Framework

For the G20 Commitments to succeed globally, each member nation needs to have a workable cross-border regulatory framework. Chairman Massad has been a leader in working with his counterparts among the G20 member nations to achieve that. An effective cross-border regulatory framework does not require each nation's law to be identical; this is unrealistic and unnecessary. Instead, the goal is to adopt frameworks that lead to consistent regulatory outcomes and allow for appropriate substituted compliance.

Unfortunately, recognition for U.S. clearinghouses will not end the cross-border regulatory debate between the U.S. and EU. Some of the key policy issues that will have to be resolved among the G20 nations in the next few years include:

- **Benchmark administrators**—Equivalence provisions for benchmark administrators are being debated in the European benchmark process. Benchmarks integrity is necessary for market confidence, and therefore should be regulated so that they are not readily susceptible to manipulation. However, I agree with Chairman Massad that direct government involvement, as employed by the EU, is not the solution.
- **Trading venues**—Although much of the cross-border equivalence discussions have focused on new execution venues for swaps, the existing licenses for non-European futures exchanges, including CME Group exchanges, will also be reviewed against new European rules for trading venues under MiFID II.
- **Position Limits**—I have previously testified about the importance of the CFTC's position limits policy to risk management for end-users and commodity prices. Getting this policy right extends beyond U.S. borders. This necessarily requires global coordination between the CFTC and other G20 nations. If the CFTC adopts an overly *prescriptive* position limits rule when other G20 nations have not, price discovery and risk management for U.S. commodities will likely move abroad. For end-users that stay in U.S. markets, their cost to hedge will be significantly higher due to potential lack of liquidity and wider spreads.

  Commercial end-users are critical to the development and success of physical commodity markets nationally and internationally. As with other regulatory policies adopted by regulators, it is necessary for us to ensure that final position limit rules do not unduly restrict commercial hedging activity or unnecessarily increase costs. In this regard, it is critical that global policy makers ensure that hedge exemptions are not too narrow or overly cumbersome to obtain. Moreover, global policy makers must ensure that position limits policy does not undermine the integrity of commodity derivatives benchmarks. In particular, global position limits policies must not incent price discovery to move from physical delivery markets to linked cash-settled markets, where there is no index or other independent means for assuring that the cash-settled products are not readily susceptible to manipulation.

Supplemental Leverage Ratio

In addition to harmonizing global frameworks, international regulators must also ensure that global regulations further G20 policy objectives and commitments rather than work against them. A key example of global regulations frustrating G20 commitments is the impact of the Basel III Supplemental Leverage Ratio and its potential to undermine the use of central clearing to mitigate systemic risk.

The Federal Reserve, in consultation with the Basel Committee on Banking Supervision, last year adopted the Supplemental Leverage Ratio rule intended to limit the amount of leverage that the largest banking organizations can hold on their balance sheets. By keeping balance sheet leverage low, regulators seek to further mitigate systemic risk in the event of a default, including for a bank that is a clearing member of a central clearing counterparty such as CME Group.

The rule as adopted will increase costs for end-users by up to five times to clear trades due to clearing members having to pass along the cost of the additional capital they must hold to meet the rule's requirements. In fact, under the current leverage ratio framework, capital costs for agricultural products are two times more expensive than for credit default swaps. These excess capital costs have already contributed to the decision by some clearing members to exit the market altogether, thus concentrating risk among a smaller pool of central counterparties. Higher clearing costs and fewer clearing members will only exacerbate, not mitigate, the risks central clearing is intended to address.

The Supplemental Leverage Ratio's main flaw is that it overstates clearing member leverage exposures because it does not allow clearing members to net segregated margin held for a cleared trade against the clearing member's exposure on the trade. It is directly at odds with the requirements of the Commodity Exchange Act that (1) client margin be strictly segregated from clearing member and clearing house own funds at all times and (2) investment of client margin is subject to significant restrictions (including that it must always be segregated, and only limited investments are permitted). In fact, not only are clearing members significantly restricted in their treatment of customer margin, but the majority of customer margin actually gets passed on to the clearing house, which results in the margin being completely outside of the clearing member control.

Despite these clear regulatory restrictions, the Supplemental Leverage Ratio rule does not permit banks or bank-affiliated clearing members to offset their cleared derivatives exposures on behalf of their customers with the segregated margin posted by those customers, based on the Basel Committee's mistaken rationale that banks and bank affiliates have the ability to use customer margin for purposes other than to offset the cleared derivatives exposure of those customers.

CME Group appreciates the steps this Committee and CFTC Chairman Massad have taken in recent months to address this issue with Prudential Regulators in the U.S., and we are hopeful that the Basel Committee and Prudential Regulators will consider proposed solutions that we and others in the industry have been discussing with them since the rule was adopted.

Conclusion

CME Group is concerned that as more time passes without consensus on developing a global framework, regulation will artificially influence liquidity, price discovery and risk management. We also are concerned that continued uncertainty in these areas will competitively disadvantage U.S. markets—far beyond just clearinghouses—in an increasingly competitive global marketplace.

The CHAIRMAN. Thank you, Mr. Duffy. Mr. O'Malia?

STATEMENT OF HON. SCOTT D. O'MALIA, CHIEF EXECUTIVE OFFICER, INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION, INC., NEW YORK, NY

Mr. O'MALIA. Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for the opportunity to testify here today. It has now been 5 years since the Dodd-Frank Act was signed into law. In that time, significant progress has been made in implementing key elements of the Act, particularly in derivatives clearing, reporting, and trade execution. Today approximately ¾ of the interest rate derivatives in CDS indexed daily volume is now cleared. More than ½ of the interest rate derivatives, and 65 percent of CDS indexed volume is traded on a SEF. All swaps are reported to a swap data repository, providing regulators with the ability to scrutinize individual trades and counterparties, and margin and capital requirements are being phased in to further mitigate risk.

Today, the derivatives sector is more transparent than before, and counterparty risk has been substantially reduced. It has become clear, however, that new challenges have emerged, and certain areas need to be re-assessed. The speed with which Dodd-Frank was implemented has resulted in significant differences in trading, clearing, and reporting, exposing derivatives users to duplicative and inconsistent requirements. These divergences not only increase compliance costs, but they have split liquidity along geographic lines. In other words, fractured rules, fractured markets, and fractured liquidity. ISDA and its members would suggest several concrete steps that could be taken to make Dodd-Frank more effective, and I have provided specific recommendations in my written testimony. I will go over a few of these highlights right now.

Broadly, regulators must work to harmonize their rules domestically and on a global basis, as they promised in their rulemaking. Regulators should set out clear, transparent guidelines for achieving equivalence determinations based on broad outcomes, not specific rule-based tests. Final rules on non-cleared margining are expected soon, and it is vital that regulators implement rules that are consistent, and create a level playing field, and enable cross-border trading. Upon finalization of national rules, adequate time must be provided for implementation. ISDA has been leading in the preparation efforts, notably through the development of a common initial margin methodology, and for the necessary legal and documentation changes to support the collateral management and segregation.

With regards to reporting, regulators should agree on common reporting requirements within and across jurisdictions, and adopt common data standards. ISDA has developed standards in common reporting formats that could be used to ensure the reporting and analysis of data transactions to be more effective. Capital requirements should be globally consistent and coherent. The interplay of the various components should be comprehensively assessed to ensure that the cumulative impact of market liquidity, borrowing costs and the economy as a whole, are fully understood. Immediate recognition should be given to CCPs that meet the CPMI/IOSCO principles.

Regulators have recently also turned their attention to CCP resiliency. ISDA has been active in this regard, and has circulated a letter recommending best practices on stress testing. I fear trade execution is the next area where global regulators will struggle to harmonize rules. Regulators must take steps now to minimize the differences in trade execution rules, and to avoid cross-border problems that have occurred in clearing and reporting. The CFTC should also take action on ISDA's petition to amend the SEF rules in order to increase the use of SEFs and facilitate cross-border trading.

Congress also has a role to play in making necessary adjustments to Dodd-Frank. The cross-border approach by the CFTC and the SEC should be examined. The approach taken is not in line with the CEA, which states U.S. rules should only be applied to those activities that have a significant and direct effect on U.S. commerce. Congress should closely monitor the finalization of the new margin regime to ensure that U.S. rules are aligned with those overseas, particularly in the issue of inter-affiliate trades. We welcome the recent bipartisan letter from Chairman Conaway and Ranking Member Peterson that highlight this issue. It is important that banks can manage risk on a global basis. Without global rule consistency, we will see further market fragmentation as a result of these rules.

Section 21(d) of the CEA, which requires indemnification of SDRs, should be repealed, and it is included in your legislative reforms. Legislation should clarify that commercial end-users that hedge their risk through centralized Treasury units should not be denied the end-user clearing exemption, also part of your legislation. Congress should continue to use its oversight roles in asking regulators to conduct quantitative assessments on new capital, liquidity, and leverage rules to ensure that the cumulative impact on the economy and market liquidity is fully understood.

Five years on from the enactment of Dodd-Frank, the vast majority of the requirements on derivatives have been implemented, but differences in the schedule, and in the substance of the regulation across jurisdictions have emerged. I hope the specific reforms suggested by ISDA in my testimony can be implemented to correct the existing problems, and avoid international disputes and fragmentation of global markets. Thank you for your time. I am happy to answer any questions.

[The prepared statement of Mr. O'Malia follows:]

PREPARED STATEMENT OF HON. SCOTT D. O'MALIA, CHIEF EXECUTIVE OFFICER, INTERNATIONAL SWAPS AND DERIVATIVES ASSOCIATION, INC., NEW YORK, NY

Chairman Conaway, Ranking Member Peterson, and Members of the Committee. Thank you for the opportunity to testify today.

It has now been 5 years since the Dodd-Frank Wall Street Reform and Consumer Protection Act was signed into law. In that time, significant progress has been made in implementing key elements of the Dodd-Frank Act, particularly in derivatives clearing, reporting and trade execution.

Today, approximately ¾ of interest rate derivatives and credit default swap (CDS) index average daily notional volumes are now cleared. More than ½ of interest rate derivatives and 65% of CDS index average daily notional volumes are traded on swap execution facilities (SEFs). All swaps are now required by the Commodity Futures Trading Commission (CFTC) to be reported to swap data repositories (SDRs), providing regulators with the ability to scrutinize individual trades and counterparties. Registration requirements are in place for swap dealers and major swap participants, with those entities subject to strict rules meant to protect their counterparties. And margin and capital requirements are being phased in to further mitigate risk.

Together, this represents a major step forward in the reform of derivatives markets. Today, the derivatives sector is more transparent than ever before, and counterparty credit risk has been substantially reduced.

It has become clear, however, that new challenges have emerged, and that certain areas need to be reassessed. For instance, the speed with which Dodd-Frank was implemented has resulted in divergences in the timing and substance of national rules. We now see significant differences in trading, clearing and reporting requirements, exposing derivatives users to duplicative and sometimes inconsistent requirements. These divergences not only increase compliance costs, but have led to a split in liquidity along geographic lines, which reduces choice, increases costs, and could make it more challenging for end-users to enter into or unwind large transactions, particularly in stressed markets conditions.

In other words, fractured rules, fractured markets, fractured liquidity.

This is contrary to the G20's 2009 commitments, which specifically called for the rules to be implemented in a way that does not fragment markets.

Discrepancies in regulatory reporting and data requirements within and across borders also mean no single regulator is currently able to get a clear view of global derivatives trading activity. This means a key objective of Dodd-Frank has not been fully met.

Even where global bodies have taken the lead in developing regulatory requirements—for instance, the capital requirements and margin for non-cleared derivatives—discrepancies have emerged in national implementations, creating competitive distortions. In some cases, certain elements of the capital rules appear to contradict the intentions of other requirements implemented as part of the G20 objectives. For instance, the U.S. supplementary leverage ratio acts to discourage banks from offering client clearing services. As the various rules have been developed in isolation, the cumulative impact of the capital requirements and the interaction with market-based reforms is unknown, and no comprehensive analysis on economic impact or the impact on market resilience and economic growth has been undertaken.

On the margin rules for non-cleared derivatives, a number of discrepancies have emerged in national-level proposals, which, in some cases, could put firms operating in the U.S. at a competitive disadvantage internationally and reduce choice for U.S. end-users domestically.

And while a final framework for the margining of non-cleared derivatives was published by the Basel Committee on Banking Supervision and International Organization of Securities Commissions (IOSCO) in September 2013,[1] final national-level rules have not yet been published. While the International Swaps and Derivatives (ISDA) has worked to prepare the industry for implementation, continued progress

[1] *Margin Requirements for Non-centrally Cleared Derivatives,* Basel Committee on Banking Supervision, International Organization of Securities Commissions, September 2013: *http://www.bis.org/publ/bcbs261.pdf.*

is dependent on the timely publication of final rules by both prudential and market regulators. These rules should be consistent.

I applaud the work that went into developing and implementing this ambitious piece of legislation from scratch. The fact that so much was done so quickly speaks volumes about the dedication of Congress and its staff, as well as the staff at the regulatory agencies. ISDA also welcomes the CFTC's flexibility and willingness to react quickly to snags by issuing no-action letters.

But the wide-scale use of exemptive relief is a symptom of larger problems that need to be addressed. Ongoing uncertainty regarding Dodd-Frank implementation for global market participants and the resulting fragmentation of liquidity indicates that Congress and regulators need to move quickly to review where changes can be made to ensure the financial stability and transparency objectives of Title VII of the Dodd-Frank Act are successfully achieved. ISDA and its members would suggest several concrete steps that could be taken to improve Title VII of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010.

- Regulators should work to harmonize their rules on a global basis within specified time frames. Organizations such as IOSCO could play a role here. Existing industry definitions and standards should be used to the extent possible. Regulators should also set out clear, transparent guidelines for achieving equivalence determinations, consistent with the approach set out in a report by the Financial Stability Board Chairman to G20 leaders in 2013.[2] This reflects an agreement that equivalency/substituted compliance assessments should be based on whether other regulatory regimes achieve broadly similar outcomes. ISDA has proposed specific fixes, which are outlined in more detail below.
- The CFTC and the Securities and Exchange Commission (SEC) should harmonize their cross-border rules and guidance. More effort is needed to turn the aspirational words on substituted compliance into action. In addition, where the Federal Reserve Board has jurisdiction over swap dealers and major swap participants, it should work with the CFTC and SEC to ensure the rules do not conflict or undermine the financial stability objectives of Title VII of the Dodd-Frank Act.
- Regulators should agree on common regulatory reporting requirements within and across jurisdictions and adopt common data standards such as unique legal entity identifiers (LEIs), unique trade identifiers (UTIs) and unique product identifiers (UPIs). ISDA has proposed a path forward, and has worked to develop common standards and reporting formats that could be used to ensure the reporting and analysis of transaction data is more effective.
- Divergences in national implementations of non-cleared margin rules should be reduced as far as possible to avoid an unlevel playing field and enable cross-border trading. Once national-level rules are finalized, adequate time must be provided for implementation and preparation, particularly as many market participants subject to the new requirements will be posting initial margin on their non-cleared trades for the first time. Implementation of global margining and segregation requirements will involve major changes to documentation, technology and business practices. ISDA has been leading efforts to prepare the industry for implementation, notably through the development of a common initial margin methodology. But work cannot be completed until final rules are released globally.
- Capital requirements should be globally consistent, coherent and appropriate to the risk of a given activity. The interplay of the various regulatory components should be comprehensively assessed to ensure the cumulative impact is fully understood to avoid excessively high financing costs for borrowers and increased hedging costs for end-users, and to encourage appropriate risk management incentives.

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[2] Report from the Financial Stability Board Chairman for the G20 Leaders' Summit, September 2013: "Instead, substituted compliance and equivalence assessments of others' regulatory regimes should be based on whether jurisdictions broadly achieve similar outcomes. At the same time, in applying such an overall broad approach, regulators will need to decide in different policy areas how much flexibility to apply in assessing the similarity of outcomes. For instance, there may be some particular policies (such as CCP margin rules) where differences in key requirements between jurisdictions could lead to regulatory arbitrage, and where further discussion between regulators is needed. Detailed work, and a timeline for action, is thus needed to address the challenges in translating the encouraging recent cross-border regulatory understandings into practice." *http://www.financialstabilityboard.org/wp-content/uploads/r_130902a.pdf?page_moved=1.*

- Negotiations with the European Securities and Markets Authority (ESMA) over the recognition of U.S. clearing houses have stalled over technical differences in margin methodologies. Immediate recognition should be given to central counterparties (CCPs) that meet the Committee on Payment and Settlement Systems and IOSCO *Principles for Financial Market Infrastructures.*[3] Further work is also needed by regulators, CCPs and market participants to develop and implement best practices. ISDA has been active in this regard, and recently circulated a letter that recommends best practices on stress testing.
- Regulators must work to minimize the differences in trade execution rules to avoid the cross-border problems that have occurred in data reporting and clearing. An attempt by the CFTC in February 2014 to introduce a so-called qualifying multilateral trading facility (QMTF) regime[4] for trading venues in Europe clearly showed that insisting on the adoption of U.S. rules will not work.
- The CFTC should take action on ISDA's petition[5] to review and modify the SEF rules in order to increase use of U.S. SEFs and facilitate cross-border trading. This includes allowing for more flexibility in execution mechanisms in limited circumstances, which would bring the rules more in line with European proposals. ISDA also recommends changes to the 'made-available-to-trade' process to give the CFTC the authority to make final determinations, following a short public consultation period.
- Regulators should ensure the costs and compliance burdens for end-users are minimized to enable them to effectively hedge their risks. Regulators should consider the cumulative impact of the rules on end-users, including indirect effects.
- The CFTC must provide final registration to swap dealers, SDRs and SEFs, which have been in regulatory limbo for as long as 3 years.

Congress also has role in reviewing and making the necessary adjustments to the Dodd-Frank Act. This includes:

- Examination of the misapplied cross-border authorities implemented by the CFTC and the SEC, which have expanded U.S. regulatory reach well beyond U.S. boundaries. This approach ignores the requirement of Section 2(i) of the Commodity Exchange Act (CEA), which states that the swaps provisions of the CEA shall not apply to activities outside the U.S. unless those activities have a direct and significant connection with activities in, or effect on, commerce of the U.S.
- Legislators should oversee the process of finalizing the new margin regime to ensure U.S. rules are aligned with those overseas, particularly on the issue of inter-affiliate trades, to ensure financial institutions operating in the U.S. are not put at a competitive disadvantage. Without the ability to efficiently centralize risk management activity, banks may stop providing products in certain markets or to certain customers via local affiliates because inter-affiliate margin would make these products less economically viable. The result would be a further fragmentation of markets and reduction in liquidity.
- Repeal of Section 21(d) of the CEA, which requires indemnification of SDRs. This has become a barrier to sharing data among regulators in the U.S. and internationally.
- Legislative action to make clear commercial end-users that hedge their risk through centralized Treasury units are not denied the end-user clearing exemption.
- Congress should continue to use its oversight role by asking regulators to conduct a quantitative assessment on new capital, liquidity and leverage rules to ensure the cumulative impact on the economy and market liquidity is fully understood.

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I would like to address each of my points in more detail. Before I do, I would like to stress that ISDA supports the intent of Dodd-Frank to strengthen financial markets and reduce systemic risk. That includes the reporting of all derivatives trades

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[3] *Principles for Financial Market Infrastructures,* CPSS/IOSCO, April 2012: *http://www.bis.org/cpmi/publ/d101a.pdf.*

[4] CFTC Letter No. 14–16, February 12, 2014: *http://www.cftc.gov/ucm/groups/public/@lrlettergeneral/documents/letter/14-16.pdf.*

[5] ISDA's petition to the CFTC: *http://www2.isda.org/attachment/NzY2Mg==/ISDA%20CFTC%20Petition.pdf.*

and clearing of standardized derivatives products where appropriate. ISDA has worked constructively and collaboratively with policy-markers in the U.S. and across the globe to achieve these objectives. In fact, this work began even before the passage of Dodd-Frank, as part of the 'voluntary commitment process' overseen by the Federal Reserve Bank of New York.

This is very much in line with our mission statement: to foster safe and efficient derivatives markets for all users of derivatives. Since ISDA's inception 30 years ago, the Association has worked to reduce credit and legal risks in the derivatives market, and to promote sound risk management practices and processes. This includes the development of the ISDA Master Agreement, the standard legal agreement for derivatives, and related collateral documentation, as well as our work to ensure the enforceability of netting.

Today, ISDA has over 800 member institutions from 67 countries. These members comprise a broad range of derivatives market participants, including corporations, investment managers, government and supranational entities, insurance companies, energy and commodities firms, and international and regional banks. In addition to market participants, members also include key components of the derivatives market infrastructure, such as exchanges, clearing houses and repositories.

End-users of derivatives are the largest constituent, accounting for roughly ½ of our membership. Approximately ⅓ is located in North America.

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Before I expand upon the challenges faced by derivatives market participants, I would like to briefly summarize the commitments made by the G20, which were reflected in Dodd-Frank. They were:

- Non-cleared derivatives should be subject to higher capital requirements;
- Standardized derivatives should be cleared through CCPs;
- Derivatives should be reported to a trade repository;
- Standardized contracts should be traded on exchanges or electronic trading platforms where appropriate.

A requirement for non-cleared derivatives to be subject to margin requirements was also later agreed by G20 leaders.

Underlying these commitments was a pledge that regulators "are committed to take action at the national and international level to raise standards together so that our national authorities implement global standards consistently in a way that ensures a level playing field and avoids fragmentation of markets, protectionism, and regulatory arbitrage".

As noted earlier, significant progress has been made in meeting the clearing, trading and reporting requirements included in Dodd-Frank. This progress will continue as clearing houses expand their product offerings and new clearing and trading mandates come into force.

Unfortunately, much less progress has been made on ensuring consistency and harmonization and in avoiding the fragmentation of markets.

Cross-Border Harmonization

The derivatives markets are, and always have been, global markets. European banks can trade with U.S. asset managers; Asian banks can trade with European hedge funds; U.S. banks can trade with Asian companies. That choice has benefited end-users. They can easily tap into a global liquidity pool with few barriers and choose who they want to trade with.

That global liquidity pool is now at risk because of a lack of consistency in the timing and substance of national-level rules. This lack of harmonization is a particular concern because of the extraterritorial reach of some domestic rules, meaning counterparties are potentially subject to two or more possibly contradictory sets of requirements—those of their own jurisdiction and the extraterritorial rules of foreign jurisdictions.

Section 2 of the CEA (7 U.S.C. 2) stipulates that Dodd-Frank should not apply to activities outside the U.S., unless those activities have a "direct and significant connection with activities in, or effect on, commerce of the United States". However, the CFTC's cross-border guidance [6] takes a much broader approach to capture overseas activities. This has resulted in non-U.S. firms turning away from any trade or

[6] *Interpretive Guidance and Policy Statement Regarding Compliance with Certain Swap Regulations;* Rule, FEDERAL REGISTER/Vol. 78, No. 144/July 26, 2013: *http://www.cftc.gov/ucm/groups/public/@lrfederalregister/documents/file/2013-17958a.pdf.*

counterparty that would result in them being subject to U.S. rules and regulatory oversight, on top of their own jurisdiction's rules.

CFTC Staff Advisory 13–69 [7] is an example of U.S. regulatory overreach. It clarifies that a non-U.S. swap dealer should comply with Dodd-Frank transaction-level requirements when trading with another non-U.S. person if the trade is arranged, negotiated or executed by personnel or agents of the non-U.S. swap dealer located in the U.S.

ISDA believes U.S. regulators should focus on practices that pose a risk to the U.S. It is difficult to see why a trade between two non-U.S. entities that is booked overseas should be subject to CFTC oversight and Dodd-Frank transaction-level rules, simply because a U.S.-based employee has provided input to the transaction. In these cases, the trade would be subject to U.S. clearing, trading and reporting rules, as well as potentially inconsistent requirements from the non-U.S. entity's home regulator. These kinds of personnel-based tests could result in firms excluding their U.S.-based personnel from certain trades, or relocating them elsewhere.

The CFTC has issued four successive no-action letters since November 2013 to exempt market participants from compliance with Staff Advisory 13–69. But concerns about being subject to multiple sets of requirements are prompting market participants to change behavior in some cases. This is causing liquidity to fragment along geographic lines.

The CFTC's recent proposed cross-border treatment for margin on non-cleared derivatives transactions [8] is another example of regulators taking an expansive approach, as it captures non-guaranteed non-U.S. affiliates in certain cases. That's despite the fact the non-cleared margin rules were agreed at a global level, and will likely be applied in the U.S., Europe and Japan at the same time. This approach could further contribute to the fragmentation and regionalization of liquidity pools.

ISDA research shows 87.7% of regional European interdealer volume in euro interest rate swaps was traded between European dealers in the fourth quarter of 2014, compared with 73.4% in the third quarter of 2013.[9] The change in trading behavior coincided with the introduction of U.S. SEF rules, which required all electronic venues that provide access to U.S. entities to register with the CFTC as SEFs. Many non-U.S. platforms chose not to register, meaning U.S. persons were no longer able to access liquidity on these platforms. Following the first SEF trading mandates in February 2014, non-U.S. participants opted to avoid trading mandated products with U.S. counterparties, so as not to be required to trade on CFTC-registered SEFs that offer restrictive methods of execution for these instruments. U.S. entities, conversely, are unable to access the most liquid pool for euro interest rate swaps, which is centered in Europe, away from SEFs.

Many of the problems could be resolved through an effective process for granting equivalence/substituted compliance. A transparent substituted compliance mechanism based on broad outcomes, rather than a granular rule-by-rule comparison, would help minimize the compliance challenges and fragmentation of liquidity. The CFTC should clearly articulate how substituted compliance decisions will be made in order to shed light on this currently theoretical and opaque process.

Regulators should also work to harmonize rules sets as far as possible, particularly in clearing, trading and reporting. The CFTC and the SEC must resolve the differences in their respective rules to foster greater consistency and clarity within the U.S. Greater harmonization with global regulations is also necessary. Differences in national-level rules have already led to protracted—and still unresolved—negotiations over whether U.S. clearing houses should be recognized by the ESMA. A restrictive interpretation of Dodd-Frank SEF rules by the CFTC means a similar outcome may emerge for trading rules, further exacerbating the fragmentation of markets, to the detriment of end-users.

Congress should give careful consideration to legislative changes based on the following principles:

- Emphasize the results and outcomes of foreign regulatory requirements, rather than the design and construction of specific rules;

[7] CFTC Staff Advisory No. 13–69, November 14, 2013: *http://www.cftc.gov/ucm/groups/public/@lrlettergeneral/documents/letter/13-69.pdf.*

[8] *Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants—Cross-Border Application of the Margin Requirements;* Proposed Rule, FEDERAL REGISTER/Vol. 80, No. 134/July 14, 2015: *http://www.cftc.gov/ucm/groups/public/@lrfederalregister/documents/file/2015-16718a.pdf.*

[9] ISDA research on fragmentation of global derivatives markets, April 2015: *http://www2.isda.org/attachment/NzUzMQ==/Market%20fragmentation%20FINAL.pdf.*

- Make clear that the location of personnel should not be a factor in determining whether activities have a direct and significant connection with activities in, or effect on, commerce of the U.S.;
- Establish separate criteria regarding the application to end-users and transactions involving end-users, and mitigate the direct and indirect costs or other burdens imposed on end-users.

Reporting

Cross-border issues have also hampered the effectiveness of derivatives reporting. A lack of standardization in reporting formats across different repositories, and inconsistencies in what is reported, mean accurate data aggregation is currently impossible. Differences in regulatory reporting requirements within and across jurisdictions also mean regulators are unable to gain an accurate picture of risk exposures on a global basis. These differences increase operational complexities for end-users and make aggregation across corporate groups difficult. It also increases the cost of reporting for firms that have reporting obligations in multiple jurisdictions.

To resolve this, regulators across the globe should identify and agree on the trade data they need to fulfill their supervisory responsibilities, and then issue consistent reporting requirements across jurisdictions. Further work is also needed by the industry and regulators to develop and then adopt standardized product and transaction identifiers, as well as reporting formats. ISDA has played a leading role in this area through its taxonomies, FpML reporting standard and unique trade identifier prefix service (*UTIPrefix.org*), among other things.

Even then, it will be difficult for regulators to obtain an accurate picture of global risk exposures because of the Dodd-Frank SDR indemnification requirement and privacy laws in some jurisdictions prohibiting the disclosure of certain counterparty information. Until these two issues are resolved, the ability of regulators to build a comprehensive picture of derivatives positions across the globe and to spot potential systemic risks will be stymied.

Reporting mandates have been in place in the U.S. for over 2 years, while Europe has had similar rules in place for nearly 18 months. However, little tangible progress has been made over that time to resolve differences in their respective requirements and facilitate the sharing of information. As a first step to resolving this, global regulatory institutions such as IOSCO could play a greater role to agree common requirements. Regulators and market participants should also work to identify, develop and adopt common data standards where necessary.

ISDA has recently joined with ten other international trade associations to send a letter [10] to global regulators that calls for rule harmonization consistent with a set of principles developed by ISDA.[11]

The principles are:

- Regulatory reporting requirements for derivatives transactions should be harmonized within and across borders.
- Policy-makers should embrace and adopt the use of open standards—such as LEIs, UTIs, UPIs and existing messaging standards (*e.g.,* FpML, ISO, FIX)—to drive improved quality and consistency in meeting reporting requirements.
- Where global standards do not yet exist, market participants and regulators can collaborate and secure agreement on common solutions to improve consistency and cross-border harmonization.
- Laws or regulations that prevent policy-makers from appropriately accessing and sharing data across borders must be amended or repealed.
- Reporting progress should be benchmarked. The quality, completeness and consistency of data provided to repositories should be tracked, measured and shared with market participants and regulators in order to benchmark, monitor and incentivize progress in reporting.

Margin Requirements for Non-cleared Derivatives

Dodd-Frank recognizes there is a place for bespoke derivatives instruments that enable corporate and financial institution end-users to closely match and offset risks. It also acknowledges that less liquid derivatives instruments, currencies and/or maturities may not be suitable for clearing. This point was echoed in a recent

[10] Industry trade association letter, June 2015: *http://www2.isda.org/attachment/NzY1OA==/Joint%20Trade%20Association%20Data%20Harmonization%20letter.pdf.*

[11] ISDA principles on improving regulatory transparency of global derivatives markets, February 2015: *http://www2.isda.org/attachment/NzI4NQ==/Improving%20Regulatory%20Transparency%20FINAL.pdf.*

speech by CFTC Chairman Timothy Massad, before the District of Columbia Bar Association.[12]

These non-cleared instruments are not necessarily more complex than cleared transactions, nor do they pose significantly more risk. Clearing houses typically consider the depth of the market, liquidity and availability of prices, among other factors, when deciding whether to clear a derivatives instrument—criteria also considered by regulators when deciding whether to apply a clearing mandate. Those products with non-standard terms that are used to meet specific end-user hedging needs may not meet those requirements.

Nonetheless, these instruments are vital elements in the risk management strategies of corporates, insurance companies, pension funds, sovereigns, smaller financial institutions and others. Without them, these entities may experience greater earnings volatility due to an inability to qualify for hedge accounting, or be unable to offset the interest rate, inflation and longevity risks posed by long-dated pension or insurance liabilities.

To give an example: a U.S. exporter has issued a U.S. dollar bond to grow its domestic business, but earns most of its revenue from exports to Europe. If the dollar strengthens against the euro, the company will face financial statement and cashflow volatility. It will therefore need to allocate a larger amount of its euro cashflow to service its dollar-denominated debt. To hedge this risk, the firm could swap the loan into euros using a cross-currency swap, allowing it to match the currency in which revenues are received and interest expense is paid. Cross-currency swaps are currently not cleared.

While clearly recognizing the need for a robust and competitive non-cleared derivatives market, the Dodd-Frank Act requires regulators to set margin requirements for non-cleared derivatives—in other words, requiring collateral to be posted against those trades to mitigate counterparty risk.

These rules are now close to finalization. The Basel Committee and IOSCO published a final global margining framework in September 2013, which calls for eligible counterparties to post initial and variation margin on non-cleared derivatives trades. U.S. Prudential Regulators[13] and the CFTC[14] published separate national-level proposals building on this framework in September and October 2014, and final rules are expected to be released in the third quarter of this year.

The implementation of this regime on a global basis will require significant work, particularly as many derivatives users have not posted initial margin on their non-cleared swaps before. For some non-bank users, it will also be the first time they've had to post variation margin.

ISDA has worked very hard to develop the infrastructure, processes and documentation necessary for the new margining regime. The Association is also working to develop the ISDA Standard Initial Margin Model (ISDA SIMM), a common calculation methodology for computing initial margin amounts, which will be available to all market participants.

Use of a standard methodology provides a number of benefits. For one thing, it provides regulators with a consistent, transparent model to enhance market oversight. Second, by creating a model that everyone can use, it reduces the potential for disputes between counterparties over the initial margin amounts that need to be exchanged.

In addition to the ISDA SIMM, ISDA is working on a number of other initiatives. Existing ISDA Credit Support Annexes (CSAs) and other collateral documentation will need to be replaced or revised in order to comply with the new non-cleared margin rules. A number of key terms in the CSA will need to be modified, including collateral eligibility, collateral haircuts, calculation and collection timing, dispute resolution, and the procedure for exchanging initial margin. In addition, derivatives users will need to set up new custodial agreements or make changes to existing arrangements to comply with initial margin segregation requirements. Given the changes, new or updated netting opinions may be needed for some jurisdictions.

Given this workload, it is important that national-level margin rules are finalized as soon as possible. While significant progress has been made in ISDA's implementation efforts, certainty in the final rules in each jurisdiction is required in order

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[12] Keynote address, Timothy G. Massad before the District of Columbia Bar (Washington, D.C.), July 23, 2015: *http://www.cftc.gov/PressRoom/SpeechesTestimony/opamassad-26*.

[13] *Margin and Capital Requirements for Covered Swap Entities;* Proposed Rule, FEDERAL REGISTER/Vol. 79, No. 185/September 24, 2014: *http://www.gpo.gov/fdsys/pkg/FR-2014-09-24/pdf/2014-22001.pdf*.

[14] *Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants;* Proposed Rule, FEDERAL REGISTER/Vol. 79, No. 192/October 3, 2014, *http://www.cftc.gov/ucm/groups/public/@lrfederalregister/documents/file/2014-22962a.pdf*.

to progress these initiatives. It is also important that enough time is given to development and testing between finalization of the national rules and implementation, to ensure these rules can be introduced safely with minimum disruption to markets.

Achieving global consistency in the rule sets is also imperative. The initial proposals from U.S. regulators contained a number of divergences from the Basel Committee and IOSCO framework.[15] There were also discrepancies between the national rules proposed by Europe and Japan.

Proposals from U.S. Prudential Regulators, for example, would subject transactions between affiliates of the same financial group to margin requirements. This does not appear in European and Japanese proposals, potentially putting financial institutions operating in the U.S. at a competitive disadvantage internationally and reducing choice for U.S. end-users domestically.

Analysis conducted by ISDA members shows that the inter-affiliate margining requirement would result in double the amount of initial margin being posted, relative to rules that only require initial margin to be posted to external parties. We welcome the recent bipartisan letter from Chairman Conaway and Ranking Member Peterson that highlighted this issue, and agree with their concerns that the cost of funding this initial margin would likely be passed on to end-users.

It would also run counter to the objective of reducing systemic risk. These internal risk management trades enable firms to consolidate their swaps within a single entity, resulting in substantial risk management and operational benefits. Inter-affiliate margin requirements could discourage this behavior. This could deter firms from offering products in certain markets that can only be accessed through an affiliate, as the cost of posting inter-affiliate margin would make these products uneconomic.

Attention also needs to be paid to how these rules will be applied on a cross-border basis. Under recent proposals from the CFTC, U.S. covered swap entities would be able to rely on substituted compliance when trading with a non-U.S. entity (assuming the home rules of the non-U.S. entity are deemed equivalent), but this would only apply to initial margin posted. Initial margin collected would have to meet U.S. rules.

In addition, non-U.S. entities whose obligations are not guaranteed by a U.S. person but whose financial statements are included in those of a U.S. ultimate parent entity would be subject to the U.S. regime. This goes further in extraterritorial reach than other U.S. rules. Unless U.S. rules are harmonized with those in Europe and Japan, it is conceivable that a trade between a U.S. and overseas counterparty will be required to comply with two sets of rules simultaneously.

Finally, regulators need to make some accommodation for non-cleared derivatives conducted with counterparties in jurisdictions that haven't applied the margin rules. For example, regulators should consider making a transitional equivalency determination, valid for 2 years, for jurisdictions that have yet to implement the Basel Committee/IOSCO framework for margin rules.

ISDA recommends that:

- Regulators harmonize the margin rule sets to avoid an unlevel playing field and the potential for fragmentation.
- Final U.S. rules should be published as soon as possible so implementation efforts can be progressed.
- These rules should provide sufficient time (at least 12 months between publication of the final rules and the implementation date) in order to give to market participants adequate time to develop and test the necessary models, documentation and infrastructure, and ensure all parties sign legal documentation compliant with the final rules.

Capital Requirements

Dodd-Frank also requires swap dealers to be subject to strict capital requirements to mitigate risk. A key driver has been a desire to incentivize clearing through higher capital requirements for non-cleared trades. Changes to the capital rules have been agreed at a global level through the Basel Committee, and are then implemented in each jurisdiction by national authorities.

The capital reforms include increased bank capital requirements, higher quality capital, enhanced market risk rules, greater focus on counterparty credit risk, new liquidity requirements, a leverage ratio, a capital surcharge for systemically impor-

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[15] ISDA's response to U.S. Prudential Regulators' proposal for the margining of non-cleared derivatives, November 2014: *http://www2.isda.org/attachment/NzExOA==/ISDA_-_PR_Proposed_Margin_Rules_Letter%20112414.pdf.*

tant banks and total loss-absorbing capital requirements. The Basel Committee has set a phase-in schedule from 2013 through to 2019.[16]

The full impact is unlikely to be known after 2019, when the full array of requirements is fully phased in. Following the finalization of Basel III in December 2010, banks have had to prepare for a succession of follow-up consultations and implementations, at the same time as complying with numerous other regulations relating to trading, reporting and clearing. The Basel Committee phase-in period for higher and better quality capital requirements began from January 2013, with the minimum common equity capital ratio and tier-one capital requirement rising to 4.5% and 6%, respectively, from this year. Other changes to capital—the introduction of new capital conservation and countercyclical buffers, along with a surcharge for systemically important banks—will be phased in from January 2016.

The first stages of the new liquidity risk management regime have also been implemented. The liquidity coverage ratio is being incrementally rolled out from this year until 2019. The net stable funding ratio, meanwhile, is meant to ensure banks fund their activities with sufficiently stable sources of funding to avoid liquidity mismatches. Following an observation period, the requirements are scheduled to come into force from January 2018. ISDA's own industry analysis suggests this will further significantly increase costs for the derivatives users.

Other changes, such as for bank exposures to central counterparty default funds, have also been introduced.

But plenty of other components have yet to emerge—and, in some cases, even to be finalized. The Fundamental Review of the Trading Book (FRTB) is a case in point.[17] This initiative is meant to replace the current framework implemented through Basel 2.5 with a more coherent and consistent set of requirements and to reduce the variability in the capital numbers generated by banks.

The rules are scheduled to be finalized at the end of this year, with implementation by 2018. But market participants say it's too early to determine what the impact of these rules will be. That's largely because the analysis conducted so far has been hampered by data-quality issues, which has made it difficult to assess the impact on individual business lines. Nonetheless, the rules as they stand are likely to lead to punitive capital increases in certain business lines, and will potentially cause some key markets, such as securitization and small- and medium-sized entity credit, to become uneconomic. This could lead to lower liquidity and increased financing costs for borrowers. End-users could also experience higher hedging costs and a reduction in the ability to hedge effectively as capital, liquidity and leverage charges are passed on by banks.

On top of this, the Basel Committee recently issued a new consultation on credit valuation adjustment[18] to bring it into line with FRTB and address other perceived weaknesses, which is likely to further increase charges for counterparty risk.

Other issues still to be finalized include the possible introduction of capital floors—essentially, a backstop to internal models, likely to be set at a percentage of the standard model output. A consultation paper was published last December,[19] and final rules are likely sometime this year—although it is not clear when the requirements will be implemented.

Other components of the Basel III package are finalized but not yet implemented, including the leverage ratio. Under the Basel III implementation schedule, banks had to begin public disclosure of their leverage ratio numbers from this year, with the rules subject to final calibration in 2017 and full implementation in 2018.

However, these various rules may interact in countervailing ways. For instance, regulators globally have been working to ensure incentives are in place for the central clearing of standardized derivatives, but those incentives are being undermined by the leverage ratio.

For the purposes of calculating derivatives exposures as part of the leverage ratio, segregated margin received from clients is not allowed to offset the potential future exposure associated with such off-balance sheet exposures. The policy rationale is that margin can increase the economic resources at the disposal of the bank, as the bank could use the collateral to increase leverage. However, margin that is seg-

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[16] *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems,* Basel Committee on Banking Supervision, December 2010, *http://www.bis.org/publ/bcbs189.pdf.*

[17] *Consultative Document: Fundamental Review of the Trading Book: Outstanding Issues,* Basel Committee on Banking Supervision, December 2014: *http://www.bis.org/bcbs/publ/d305.pdf.*

[18] *Consultative Document: Review of the Credit Valuation Adjustment Risk Framework,* Basel Committee on Banking Supervision, July 2015: *http://www.bis.org/bcbs/publ/d325.pdf.*

[19] *Capital Floors: The Design of a Framework Based on Standardised Approaches,* Basel Committee on Banking Supervision, December 2014: *http://www.bis.org/bcbs/publ/d306.pdf.*

regated cannot be leveraged by a bank to fund its operations—it solely functions as a risk mitigant to reduce exposures with respect to a bank's cleared derivatives. Failure to recognize the exposure-reducing effect of margin acts as a significant disincentive to central clearing, as margin will substantially increase a clearing firm's total leverage exposure, leading to an increase in the amount of capital required to support client clearing activities. This will:

- Lead to more clearing firms exiting the business, therefore concentrating risk among a smaller set of providers;
- Result in a reduction of clearing-member capacity to clear for end-users, potentially forcing some participants to abandon use of derivatives;
- Increase counterparty risk for clearing members, as many will be discouraged from collecting excess margin; and
- Increase costs to end-users that use non-cleared derivatives, as their counterparties face increase costs to hedge their risks in the cleared swap markets.

The leverage ratio should therefore be amended to recognize the exposure-reducing effect of segregated margin.

How each of these elements will interact is not entirely clear. While each rule may make sense in isolation, the cumulative impact is unknown, and individual requirements may duplicate or even contradict the intention of other rules.

ISDA and its members are trying to understand the interplay between the capital, leverage and liquidity rules as a result. This could lead to lower liquidity and increased financing costs for borrowers. End-users could also experience higher hedging costs as capital, liquidity and leverage charges are passed on by banks.

ISDA recommends that:

- The impact of the capital rules, and how each component interacts with other regulatory requirements, is comprehensively assessed before progressing further.
- Congress should engage with global regulatory bodies to better understand the overall goals and objectives, as well as the potential impact on liquidity, borrowing costs and economic activity as a whole.

Clearing

ISDA and its members have been in the vanguard of clearing even before the financial crisis and the enactment of the Dodd-Frank Act. ISDA documentation and industry implementation groups were crucial to transforming mandatory clearing from an idea into reality in the U.S. and Japan. ISDA is playing the same role in Europe ahead of the first clearing mandates in Europe in 2016.

ISDA believes clearing mitigates risk. However, as a proponent of safe, efficient markets, ISDA has observed the ever increasing volume of trades passing through CCPs due to mandatory clearing, and believes these entities have become a systemically important part of the derivatives market infrastructure.

Supervisors and regulators are conscious of this fact, and have collectively taken action. International standard-setting bodies have established CCP risk management principles, as well as provided guidance on CCP recovery and resolution plans. In many respects, CCPs are held to higher standards now than ever before.

But further work is required. It has been 3 years since supervisors and regulators issued CCP risk management principles. Now is the time to re-examine these principles, as well as ascertain whether and to what extent the G20 jurisdictions have implemented them.

Given the increasing systemic importance of CCPs, all supervisors, regulators and market participants have an interest in CCP resiliency. ISDA has actively supported supervisory and regulatory initiatives in this area. Most recently, ISDA circulated a letter on CCP stress testing, which sets out specific best practices. In the letter, ISDA notes that consistent application of these best practices across G20 jurisdictions would minimize the risk of CCP failure, and may form a path forward for the U.S., the European Union and other G20 jurisdictions towards CCP equivalence. ISDA looks forward to further coordinating and cooperating with supervisors and regulators on other aspects of CCP resiliency.

More regulatory input and detail is also needed on acceptable CCP recovery mechanisms, as well as on the circumstances and processes for CCP resolution to ensure that the failure of any clearing service can be managed in an orderly way with the least possible disruption to financial stability. No recovery and resolution action should involve the use of public money. Given the large clearing houses have global operations, close cooperation and coordination between national authorities across borders is paramount.

In addition, legislative action is needed to make clear that end-users that hedge through centralized Treasury units (CTUs) in order to net and consolidate their hedging activities are eligible for the clearing exemption. Many CTUs classify as financial entities under Dodd-Frank, subjecting them to clearing requirements. While the CFTC has issued no-action relief, legislation clarifying that end-users using these efficient structures are exempt would provide much-needed certainty.

Trade Execution

ISDA has proposed a series of targeted fixes to U.S. SEF rules to encourage more trading on these venues and facilitate cross-border harmonization.

Specifically, ISDA believes allowing for greater flexibility in execution mechanisms will foster further growth of centralized trading venues. While the Dodd-Frank Act allows derivatives to be traded by "any means of interstate commerce", the CFTC's SEF rules restrict the execution of mandated products to order-book or request-for-quote-to-three mechanisms. These execution methods may not be appropriate for certain, less liquid instruments, discouraging trading on SEFs. The CFTC's restrictive interpretation of Dodd-Frank also differs from the more flexible approach taken by European regulators in their trade execution proposals, which could impede future attempts to obtain equivalence or substituted compliance determinations.

The CFTC attempted to find a solution to the fracturing of liquidity last year, issuing two conditional no-action letters on February 12, 2014 (CFTC No-Action Letter 14–15[20] and 14–16) that allowed U.S. entities to continue trading on European multilateral trading facilities (MTFs), without the need for those platforms to register with the CFTC as SEFs. However, those European venues were required to report all swap transactions to a CFTC-registered SDR as if they were SEFs, submit monthly reports to the CFTC summarizing levels of participation and volume by U.S. persons, and meet other SEF requirements as well as their own home regulations. Not surprisingly, no MTF applied within the time frame for this so-called QMTF status.

This validates my belief that it is better for the CFTC to conduct a review of its rules now, rather than reach a point where divergent trading rules are in place elsewhere, forcing cross-border counterparties to try and comply with two different sets of requirements.

ISDA has published a set of principles[21] aimed at promoting consistency in the development and application of centralized trading rules for derivatives. They include:

- The trading liquidity of a derivatives contract (and consequently the regulatory obligations to which the contract is subject) should be determined by reference to specific objective criteria. The process should be based on concrete, transparent and objective standards so that market participants have a clear understanding of when swaps will be required to move from the bilateral market to centralized trading venues.
- Derivatives contracts that are subject to the trading obligation should be able to trade on a number of different types of centralized venues. It is important for regulators to achieve a flexible trade execution regime that would allow contracts to be traded across jurisdictions, and not be subject to costly duplicative compliance obligations and regulatory arbitrage.
- Trading venues must offer flexible execution mechanisms that take into account the trading liquidity and unique characteristics of a particular category of swap. We believe that regulators will encourage centralized trading by permitting parties to communicate and execute trades freely, so long as the parties comply with the requirement to execute trades on a centralized venue.

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Conclusion

US legislators moved quickly to draw up and finalize the Dodd-Frank Act in response to the financial crisis. Five years on from its enactment, the vast majority of the key requirements on derivatives have been implemented. The first U.S. clearing mandates, for example, were introduced in 2013. All swaps transactions involv-

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[20] CFTC Letter No. 14–15, February 12, 2014, *http://www.cftc.gov/ucm/groups/public/@lrlettergeneral/documents/letter/14-15.pdf.*

[21] ISDA's *Path Forward for Centralized Execution of Swaps,* April 2015: *http://www2.isda.org/attachment/NzM1Ng==/Path%20Forward%20for%20Centralized%20Execution%20of%20Swaps%20FINAL.pdf.*

ing a U.S. person are now required by the CFTC to be reported to SDRs, and SEF trading volumes increased rapidly following the first trade mandates in 2014.

But this first-mover status has also created problems. The speed with which the legislation was drawn up meant little time was given to coordination and cooperation with non-U.S. legislators. Differences in implementation schedules and in the substance of the regulation in different jurisdictions have emerged as a result.

With other jurisdictions now developing or implementing comparable rules, there is now an opportunity to harmonize the various regulations to facilitate cross-border trading. Critical to this initiative is an effective and transparent substituted compliance framework. Efforts to achieve equivalence between jurisdictions have floundered on several occasions because regulators have conducted a granular, rule-by-rule comparison of the requirements. Substituted compliance determinations based on broad outcomes would maximize the potential for cross-border harmonization, and would align the regulatory framework more closely with the G20 commitments.

The CHAIRMAN. Thank you, Mr. O'Malia. Mr. Edmonds.

STATEMENT OF CHRISTOPHER S. EDMONDS, SENIOR VICE PRESIDENT, FINANCIAL MARKETS, INTERCONTINENTALEXCHANGE, INC. CHICAGO, IL

Mr. EDMONDS. Chairman Conaway, Ranking Member Peterson, Members of the Committee, thank you for the opportunity to appear before you today. Since launching an electronic over-the-counter energy marketplace in 2000, ICE has expanded both in the U.S. and internationally. Over the past 15 years we have acquired or founded derivatives exchanges in clearing houses in the U.S., Europe, Singapore, and Canada. As such, we are uniquely impacted by global financial reform efforts.

Looking at the derivatives markets now, 5 years into financial reform, it is more transparent, and risk management is more robust. Many more products are centrally cleared today, including the important interest rate and credit default swap markets. Also importantly, market participants have invested greatly in compliance systems and staff, which in turn have resulted in safer and more resilient derivatives markets. However, while we are in the later stages of Dodd-Frank implementation, other jurisdictions have chosen to develop at a much slower schedule, which has caused uncertainty. The goal of global regulatory cooperation and protection from regulatory arbitrage must be paramount, going forward.

With this in mind, I have two recommendations for what we could have done better in financial reform, which I hope are helpful for policymakers, going forward. At the time of passage, regulators and Congress were very concerned about the ability of market participants to exploit loopholes. Therefore, Dodd-Frank was very prescriptive, and in turn the regulators have implemented very prescriptive rules. In some ways a prescriptive rule is helpful to market participants, as it provides clarity. However, prescriptive rules can also have a negative impact on a dynamic market, like the derivatives markets.

We should review financial reforms put in place and eliminate the ones that do not account for technological advances, or which constrain competition. We should then replace those rules with a more flexible regulatory principle that are able to best meet the evolving nature of markets and technology, while making certain all of the rules in place are making markets safer.

In the early days of financial reform efforts the G20 nations agreed to harmonize financial reform legislation. In derivatives, this is vitally important, as the markets are global, and the U.S. economy has benefited greatly as the home to the international derivative markets. Unfortunately, the past 5 years have demonstrated that harmonization has yet to be achieved. Going forward, I believe that future financial reform efforts should take great care to harmonize major rules both domestically and internationally before the rules are issued. While this would inevitably slow down the process, coordination would save considerable time and unnecessary expense for both regulators and market participants.

ICE has always been, and continues to be, a strong proponent of open and competitive markets, and supports robust regulatory oversight of these markets. We look forward to working with Congress and regulators in the U.S. and abroad to address the evolving regulatory changes. Mr. Chairman, thank you for the opportunity to share our views with you. I would be happy to answer any questions you or the Committee may have.

[The prepared statement of Mr. Edmonds follows:]

PREPARED STATEMENT OF CHRISTOPHER S. EDMONDS, SENIOR VICE PRESIDENT, FINANCIAL MARKETS, INTERCONTINENTALEXCHANGE, INC. CHICAGO, IL

Chairman Conaway, Ranking Member Peterson, I am Chris Edmonds, Senior Vice President of Intercontinental Exchange (ICE). I appreciate the opportunity to appear before you today to testify on the fifth anniversary of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

Background

Since launching an electronic over-the-counter (OTC) energy marketplace in 2000 in Atlanta, Georgia, ICE has expanded both in the U.S. and internationally. Over the past fifteen years, we have acquired or founded derivatives exchanges and clearing houses in the U.S., Europe, Singapore and Canada. In 2013, ICE acquired the New York Stock Exchange, which added equity and equity options exchanges to our business. Through our global operations, ICE's exchanges or clearing houses are directly regulated by the UK Financial Conduct Authority (FCA), the U.S. Commodity Futures Trading Commission (CFTC), the Securities and Exchange Commission (SEC) and the Manitoba Securities Commission, among others. As such, ICE is uniquely impacted by financial reform efforts in the U.S. and abroad.

Five Years of Financial Reform

ICE continues to support global financial reform efforts. When Dodd-Frank was passed, ICE already had been leading in the development of electronic trading and clearing of OTC derivatives, two primary goals of global financial reform efforts. As such, ICE believes that increased transparency of electronic trading and proper risk and capital management of clearing are central to efficient and transparent markets. However, as we stated at the time, we believe derivatives clearing and trading would ideally evolve naturally as opposed to top down mandates.

Looking at the derivatives market now, 5 years into financial reform, it is more transparent and risk management is more robust. Many more products are centrally cleared today, including the important interest rate and credit default swap markets. Also importantly, market participants have invested greatly in compliance systems and staff, which in turn have resulted in safer and more resilient derivatives markets. However, now that we have come to the later stages of Dodd-Frank implementation our larger questions are related to global regulation and harmonization. Other jurisdictions have chosen to develop on a much slower schedule, which has caused uncertainty in the market. Frankly, we are not globally harmonized as the market demands. The goal of global regulatory cooperation and protection from regulatory arbitrage was the original goal of the G20 and must be paramount going forward. It is only through such efforts that we can prevent fragmented liquidity pools and divergent regulatory structures. Both outcomes would be detrimental to market participants and ultimately, the public. With this in mind, I have two recommendations for what we could have done better in financial reform, which I hope are helpful for policy makers, going forward.

Reliance on Prescriptive Rules

At the time of passage, regulators and Congress were very concerned about the ability of market participants to exploit loopholes. Therefore, Dodd-Frank was very prescriptive, and in turn, the regulators have implemented very prescriptive rules. In some ways, a prescriptive rule is helpful to market participants as it provides clarity. However, prescriptive rules can also have a negative impact on a dynamic market like the derivatives market and in some cases make the market less safe.

As an example of how prescriptive rules can go awry, in the late 1800s, the British Government passed rules mandating that passenger liners over 10,000 metric tons have 16 lifeboats. The Titanic's shipbuilders over-complied with the regulations—they had 20 lifeboats. What the rule did not contemplate is that the technology of shipbuilding would change dramatically over the next few years. Thus complying with that prescriptive rule in part lead to the tragedy in 1912. In retrospect, a better rule would have been a flexible one that required enough lifeboats for all passengers—whether that was 10, 16, or 30.

We should review the financial reforms put in place for these types of prescriptive rules and eliminate the ones that do not account for technological advances or which constrain competition. We should then replace those rules with more flexible regulatory principles that are able to best meet the evolving nature of markets and technology, while making certain all of the rules in place are making markets safer.

Conflicts in Financial Reform Efforts

In the early days of financial reform efforts, the G20 nations agreed in Pittsburgh to harmonize financial reform legislation. In derivatives, this is vitally important as the markets are global and the U.S. economy has benefited greatly as the home to international derivatives markets. Unfortunately, the past 5 years have demonstrated the clearly stated goal of harmonization has not been achieved internationally or domestically.

At the outset, the broad mandate of Dodd-Frank created great uncertainty for international transactions. The sole recognition of applicability of Dodd-Frank to international transactions is in Section 722 of the Act which states "[t]he provisions of this Act relating to swaps that were enacted by the Wall Street Transparency and Accountability Act of 2010 . . . shall not apply to activities outside the United States unless those activities:

(1) have a direct and significant connection with activities in, or effect on, commerce of the United States, or

(2) contravene such rules or regulations as the Commission may prescribe . . . or to prevent the evasion of any provision of this Act . . ."

This broad provision led the United States to export many of its regulations globally. The impulse to regulate global markets is understandable as the United States issued its financial reform rules faster than most other jurisdictions. However now, as other jurisdictions, particularly Europe, finalize their financial reform laws, we are seeing major differences across borders. These differences are compounded as each jurisdiction's rules are prescriptive and thus harder to harmonize. This continued development of compounding regulatory standards is leading to fragmented derivatives markets, in turn impairing the ability of end-users to access efficient and liquid markets to manage their risk.

Domestically, we have also seen regulations working at cross purposes. For example, the prudential banking regulators, through the Basel III process, have instituted a Supplemental Leverage Ratio (SLR) on cleared transactions. The SLR, in effect, penalizes banks for collecting margin from customers, even though the bank acts only as an agent between the customer and clearing house. The rule directly conflicts with the clearing goals of Dodd-Frank as the SLR will make access to clearing more difficult and expensive for customers. In addition, the rule could add to systemic risk as clearing firms leave the market, leaving risk concentrated in the remaining firms.

Going forward, I believe that future financial reform efforts should take great care to harmonize major rules, both domestically and internationally, before the rules are issued. While this would inevitably slow down the process, coordination would save considerable time and expense for both regulators and market participants in the overall.

Conclusion

ICE has always been and continues to be a strong proponent of open and competitive markets and supports robust regulatory oversight of those markets. As an operator of global futures and OTC markets, and as a publicly-held company, ICE understands the importance of ensuring the utmost confidence in its markets. We look forward to working with Congress and regulators in the U.S. and abroad to address the evolving regulatory challenges presented by derivatives markets.

Mr. Chairman, thank you for the opportunity to share our views with you. I would be happy to answer any questions you may have.

The CHAIRMAN. Thank you, Mr. Edmonds. Mr. Thompson.

STATEMENT OF LARRY E. THOMPSON, VICE CHAIRMAN AND GENERAL COUNSEL, DEPOSITORY TRUST AND CLEARING CORPORATION, NEW YORK, NY

Mr. THOMPSON. Thank you, Mr. Chairman, and Ranking Member Peterson. I am Larry Thompson, Vice Chairman and General Counsel of the Depository Trust and Clearing Corporation, or DTCC, the primary financial market infrastructure for U.S. and global markets. The G20 reform initiatives pushed financial market regulation into the 21st century. As a result, over the last several years, the global OTC derivatives marketplace has undergone a dramatic transformation. Progress has been steady, but slow. Just last Friday the Financial Stability Board issued its ninth progress report, indicating that there remained a range of implementation issues. To date the G20 goal of enhanced transparency remains only partially addressed. While regulators and market participants have made significant progress, identifying cross-border risks remains a challenge. The goal of global data transparency has not been achieved.

I would like to focus on three points today. First, legal barriers to global trade reporting among regulators. Second, challenges to global coordination, and third, the need for consistent global data standards. Today there are significant legal barriers that are preventing cross-border data sharing. These issues, such as Dodd-Frank's indemnification provisions, need to be removed before data can be aggregated and used for systemic risk oversight. They block regulators, both in the U.S. and globally, from utilizing the transparency offered by swap data repositories, and may hinder access to and sharing of data among U.S. authorities. Thanks to the leadership of this Committee, the House recently passed H.R. 1847, a bill introduced by Mr. Crawford and Mr. Maloney, which would resolve this issue. DTCC urges the Senate to quickly pass this technical, non-controversial fix.

Second, there is a lack of global coordination among jurisdictions. While trade repositories are recognized as essential tools for systemic risk management, the emergence of reporting regimes with regional, rather than global, focus has limited their effectiveness to date. Although this has significantly improved market transparency at the local level, it has fragmented the global reporting landscape. This approach impacts U.S. regulators, who, due to the data fragmentation, will not see the full picture of risk developing across the system. Achieving the G20 goals of transparency requires harmonized reporting across jurisdictions.

And that leads me to my third and final point, about the critical need to adapt global data standards. Jurisdictions have made significant progress in implementing derivatives reporting rules, and data is now being reported to trade repositories on an unprecedented scale. However, data collection alone is not sufficient. Common standards must be adopted to improve the quality of the data.

Policymakers need to focus on two priorities. First, trade reporting must be conducted using globally adopted data standards, and, second, the aggregated data sets that combine information from multiple jurisdictions must be available. Standardized formats are necessary to transform reported data into usable information, which can be more efficiently aggregated to monitor market risks.

Efforts to identify systemic risk, including by U.S. regulators, will be frustrated if they can only obtain a partial picture of the global activity. Collaboration between the industry and regulators is critical, and an increased sense of urgency is needed. But market infrastructure, such as DTCC, stand ready to address these challenges. The best place for the dialogue to be advanced is among the global regulator bodies, such as CPMI/IOSCO. These organizations must move quickly to enact global data standards and develop appropriate governance frameworks to enable cross-border access to timely, accurate data. The U.S., along with its partners in Europe and in Asia, should continue to play a leadership role in these efforts.

Mr. Chairman, tremendous progress has been made since the 2009 G20 summit, but as you have heard today, there remains significant work to ensure our markets remain competitive, transparent, and resilient. Thank you for the opportunity to participate in today's hearing. I look forward to your questions.

[The prepared statement of Mr. Thompson follows:]

PREPARED STATEMENT OF LARRY E. THOMPSON, VICE CHAIRMAN AND GENERAL COUNSEL, DEPOSITORY TRUST AND CLEARING CORPORATION, NEW YORK, NY

Introduction

Chairman Conaway, Ranking Member Peterson, and Members of the Committee, thank you for holding today's hearing.

I am Larry Thompson, Vice Chairman and General Counsel of The Depository Trust & Clearing Corporation ("DTCC"). DTCC has more than 40 years of experience serving as the primary financial market infrastructure serving the global markets, enabling thousands of institutions worldwide to issue securities and raise capital to build businesses and support the global economy.

Through our subsidiaries and affiliates, DTCC provides clearing, settlement and information services for virtually all U.S. transactions in equities, corporate and municipal bonds, U.S. Government securities, mortgage-backed securities and money market instruments, and mutual funds and annuities. In 2014, our subsidiaries processed securities transactions valued at approximately U.S.$1.6 quadrillion. DTCC processes the equivalent of the U.S. annual gross domestic product every 2 days. Underscoring the critical role market infrastructures play in protecting the capital markets, DTCC's U.S. clearing and depository subsidiaries were designated as Systemically Important Financial Market Utilities ("SIFMUs") by the Financial Stability Oversight Council ("FSOC") in 2012 pursuant to Title VIII of the Dodd-Frank Wall Street Reform and Consumer Protection Act ("Dodd-Frank").

As a critical infrastructure provider, DTCC is not only focused on reducing systemic risk in derivatives markets, but we are hard at work on a number of initiatives designed to make markets safer, more transparent, and more resilient. These include operating a CFTC provisionally registered swap data repository ("SDR") and through DTCC's Global Trade Repository, supporting regulatory regimes around the world. DTCC is also actively involved in efforts to: shorten the U.S. settlement cycle for equities, corporate and municipal bonds and unit investment trust trades;[1] facilitate compliance with new margin regulations for non-cleared derivatives;[2] create

[1] *See* DTCC White Paper, "Shortening the Settlement Cycle: The Move to T+2" (June 18, 2015), available at *http://www.dtcc.com/news/2015/june/18/the-move-to-t2.aspx*.

[2] *See* Press Release, *Leading Global Banks, Service Providers and Market Infrastructures Create New Hub for End-to-End Margin Processing* (July 7, 2015), available at *http://www.dtcc.com/news/2015/july/07/service-providers-and-market-infrastructures-create-new-hub.aspx*.

and assign globally-accepted legal entity identifiers ("LEIs");[3] standardize and automate cyber threat intelligence distribution;[4] and work carefully towards addressing issues related to central counterparty resiliency.[5]

My testimony today, however, will focus on the progress of global financial reform, particularly with regard to new regulatory requirements for the over-the-counter ("OTC") derivatives markets. DTCC provides services for a significant portion of the global OTC derivatives market and has extensive experience operating repositories to support derivatives trade reporting and enhance market transparency. Through regulated subsidiaries, DTCC supports regulatory reporting regimes in the U.S., Europe, Japan, Australia, Singapore, Hong Kong and Canada.

As described below, the 2009 Group of 20 ("G20") initiatives for global financial markets pushed financial market regulation into the 21st century. The G20 Pittsburgh Summit introduced new trade reporting rules and spurred the advent of centralized clearing and new capital requirements. As a result, the OTC derivatives market has undergone a dramatic transformation over the past several years and continues to evolve rapidly as market participants meet new mandates, including new regulatory requirements stemming from Dodd-Frank.

Today, I would like to identify several key obstacles that frustrate global regulatory efforts to achieve the goals set forth by policymakers in the aftermath of the 2008 financial crisis. I will also highlight several solutions that policymakers should consider as implementation of the G20 commitments move forward, such as continued efforts to aggregate and standardize data, as well as ensure it can be freely and appropriately shared across jurisdictions.

Progress on global derivatives reform is at a critical juncture as the G20 goal of enhanced transparency remains only partly addressed. While regulators and the industry have made significant strides in addressing the data gap that existed in 2008, cross-border identification of risk remains difficult for macro-prudential authorities. I applaud you for holding this hearing at such a critical time for global financial market reform.[6]

Importance of G20 Commitments for Global Financial Markets

The global financial crisis of 2008 shook the foundations of the financial system to the core. This period was followed by a commitment, at a global level, led by the G20 to take a number of measures to enhance transparency in the derivatives market and improve the global response to systemic risk stemming from cross-border derivatives trading activities.

More specifically:

- The G20 agreed that "all standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements."[7]
- The G20 leaders further called on the Financial Stability Board ("FSB") and its relevant members to "assess regularly implementation and whether it is sufficient to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse."[8]

This commitment was followed by the adoption, in November 2009, of the 20 recommendations put forward by the FSB in their report, "The Financial Crisis and Information Gaps." The report identified four areas in which data gaps would need to be addressed, namely to better capture the build-up of risk in the financial sector, to improve data on international financial network connection, to monitor the vul-

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[3] *See* DTCC Global Markets Entity Identifier Utility Overview, *http://www.dtcc.com/data-and-repository-services/reference-data/gmei.aspx*.

[4] *See* Press Release, *Soltra Launches Soltra Edge, The First Industry-Driven Threat Intelligence Sharing Platform Designed to Enable Community-Driven Cyber Defenses* (Nov. 4, 2014), available at *https://soltra.com/pdf/FINAL%20Soltra%20Edge%20press%20release_11.4.14FINALWEB%20(1).pdf*.

[5] *See* DTCC White Paper, "CCP Resiliency and Resources" (June 2015), available at *http://www.dtcc.com/news/2015/june/01/ccp-resiliency-and-resources.aspx*.

[6] DTCC has also discussed the G20's global derivatives transparency mandate. *See* DTCC White Paper, "G20's Global Derivatives Transparency Mandate" (Feb. 2, 2015), available at *http://www.dtcc.com/news/2015/february/02/gtr-white-paper.aspx*.

[7] *See* G20 Leaders' Statement at the Pittsburgh Summit (Sept. 2009), available at *http://www.treasury.gov/resource-center/international/g7-g20/Documents/pittsburgh_summit_leaders_statement_250909.pdf*.

[8] *See id.*

nerability of domestic economies to shocks, and to enable communications of official statistics.

According to FSB's *Eighth Progress Report on Implementation of OTC Derivatives Market Reforms:*

> *As of November 2014 the majority (16) of FSB member jurisdictions have trade reporting requirements in effect for one or more product and participant types, though specific reporting requirements currently vary across jurisdictions. By end-2015, all but one jurisdiction are expected to have trade reporting requirements in effect for at least some product classes. As of end-October 2014, 13 FSB member jurisdictions have [trade repositories ("TRs")] that are permitted to receive transaction reports for at least some asset classes. Globally, there are 23 TRs currently operational, spanning all asset classes.*

Since then, significant steps within jurisdictions have been taken towards developing a framework to address the goals outlined in the FSB report. Trade reporting regimes are now in place in major derivatives jurisdictions around the world and regulators have access to more derivatives data than ever before.

Despite these steps, the G20 goals remain only partly addressed. Data is being collected as prescribed by each jurisdiction's legislation and local regulators are able to review data. However, more work remains to fully achieve the FSB goals outlined in the 20 recommendations. Of most importance, the goal of global data transparency—one of the major factors that led to the 2008 financial crisis and a critical element in understanding systemic risks and interconnectedness—has not yet been achieved. In my testimony, I will address the following points as to what work remains to fully achieve this important goal:

1. Lack of global coordination resulting from the localized or jurisdictional approach to trade reporting regimes;
2. Lack of global data standards; and
3. Legal barriers to global data sharing among regulators.

DTCC's Trade Repository and Global Markets Entity Identifier Help Regulators Identify and Mitigate Global Financial Market Risk

DTCC has extensive experience collaborating with regulatory bodies and market participants to support new regulatory reporting mandates globally, including Dodd-Frank in the U.S., the European Market Infrastructure Regulation ("EMIR") and the Markets in Financial Instruments Directive ("MiFID") in Europe, as well as new reporting requirements for trade repositories throughout the Asia-Pacific region.

Global Trade Repository

DTCC's Global Trade Repository ("GTR") supports reporting across all five major derivatives asset classes—credit, interest rate, equity, foreign exchange and commodity—in nine jurisdictions across 33 countries. Despite differences in local reporting requirements across regions, DTCC has built a robust and flexible infrastructure with a global trio of fully replicated GTR data centers.

GTR has more than 5,000 clients in all regions of the world, including the top 30 global banks. In fact, GTR reports data for more than 100,000 entities globally and holds up to 40 million open derivatives trades. We also process more than one billion customer messages each month.

DTCC is a strong proponent of efforts to increase transparency in the OTC derivatives markets. In line with global reporting commitments, Dodd-Frank requires that all derivatives transactions, whether cleared or uncleared, must be reported to newly created SDRs. Based on our experience providing regulated trade repository services globally, DTCC is pleased significant progress has been made in implementing this mandate.

To support Dodd-Frank reporting requirements, the DTCC Data Repository (U.S.) LLC ("DDR") applied for and received provisional registration from the Commodity Futures Trading Commission ("CFTC") to operate a multi-asset class SDR for OTC credit, equity, interest rate, foreign exchange and commodity derivatives in the U.S. DDR is the only repository to offer reporting across all asset classes, a major milestone in meeting regulatory calls for robust trade reporting and risk mitigation in the global OTC derivatives market. Currently, DDR holds approximately ten million CFTC-reported open derivatives trades.

DDR began accepting trade data from its clients on October 12, 2012—the first day that financial institutions began trade reporting under Dodd-Frank. Furthermore, on December 31, 2012, DDR was the first and only registered SDR to publish real-time price information. DTCC—through its Trade Information Warehouse—has provided public aggregate information for the credit default swap market on a weekly basis, including both open positions and turnover data, since January 2009. This information is available, free of charge, on *www.dtcc.com*.

1. Global Coordination

While financial market infrastructures like DTCC have become fundamental in enabling G20 reforms, challenges remain regarding the introduction of new regulatory mandates, and the potential unintended consequences of various regulations. There remain significant concerns regarding the harmonization of new regulatory requirements and the cross-border impact of new rules throughout the marketplace.

While trade repositories are heralded as an essential pillar of systemic risk management, the global derivatives reporting regime that emerged following the 2008 crisis was developed along national or regional lines. Due to this fragmented regulatory landscape, trade repositories have not been able to reach their full potential as tools for systemic risk oversight.

Since the 2008 crisis, major derivatives jurisdictions around the world have developed frameworks to mandate reporting of derivative trades to trade repositories. Regulators have also devised local rules and designated authorized trade repositories to operate within their domains. Although transparency has been created through national reporting regimes, this localized approach has resulted in divergences among jurisdictions.

While local authorities were developing the mandated reporting frameworks, in 2010 DTCC implemented a voluntary reporting framework under OTC Derivatives Regulators Forum ("ODRF") guidelines to data access. This framework leveraged DTCC's Trade Information Warehouse post-trade processing service, which contains virtually all credit derivative trades transacted globally. A portal was established that made this data available to more than 40 regulators globally. The portal allows for regulators to access data within their jurisdiction and data provided is consistent with ODRF data-sharing guidelines. The portal assists regulators in their supervisory capacities in scenarios such as sovereign debt crises, corporate failures, credit downgrades and significant losses by financial institutions.

Despite these voluntary efforts, the mandated regulations that emerged throughout each jurisdiction have created a fragmented and inconsistent set of reporting requirements. This frustrates the ability to perform aggregation and data access provisions such as those previously established via this portal.

In 2013, DTCC stated that achieving the G20 goals of transparency required an optimal trade reporting framework which consisted of harmonized reporting requirements across jurisdictions and advocated for one repository to collect data as a public good.[9] However, the current trade reporting reality is quite different and reporting is now fragmented across jurisdictions as well as across multiple repositories. Given this current state, it is imperative that we focus on creating the necessary conditions for the reporting function to fulfill the G20 mandate.

2. Global Standards as Means to Improve Data Quality

While progress has been made to improve standards globally, additional work remains before the G20 transparency mandate can be achieved. Standards are necessary as they provide a means to transforming data into information that can be used to help identify and mitigate systemic risk. Through the global adoption and use of identifiers and consistent standards, the quality of data will improve and data can be effectively aggregated.

Legal Entity Identifier

DTCC is actively engaged in the global effort regarding LEIs, which allow for the unique identification of legally distinct entities that are counterparties on financial transactions. Global use of LEIs would serve as a valuable building block to increasing transparency and risk mitigation in the financial markets.

Following the 2008 financial crisis, the importance and benefit of a universal LEI became clear. The inability of regulators to quickly and consistently identify parties to transactions across markets, products, and regions hindered their ability to evaluate systemic risk, identify trends and emerging risks, and take appropriate corrective steps. Recognizing the critical data gap in regulatory oversight as a result of the lack of an international standard for an LEI, authorities around the world have taken incremental steps to develop a global LEI system.

Through a competitive process, DTCC was chosen to build and operate an LEI utility for the industry and was designated by the CFTC to provide LEIs to swap market participants as required by CFTC record-keeping and reporting rules. This

[9] Michael C. Bodson, CEO, DTCC, "New Infrastructures for a Sounder Financial System," Financial Stability Review, Banque de France (April 2013).

utility, which was developed and operates in conjunction with SWIFT, is the Global Markets Entity Identifier ("GMEI"). To date, the GMEI utility has assigned LEIs to and maintains reference data corresponding to more than 185,000 legal entities across more than 140 jurisdictions, representing approximately 50 percent of all global LEIs that have been assigned. I am pleased to announce that last week the CFTC extended the GMEI utility's designation as the provider of LEIs in support of the CFTC's swap data record-keeping and reporting rules.

To ensure adoption of LEI both domestically and globally, it is essential that new registration, record-keeping and reporting rules include an LEI mandate. DTCC is pleased there is widespread regulatory support for the LEI to serve as the international standard. Among U.S. regulators, the CFTC [10] was the first to mandate use of the LEI and the Securities and Exchange Commission ("SEC") [11] is advancing rules with LEI mandates. Additionally, several authorities—including the European Securities and Markets Authority, the Monetary Authority of Singapore, the Hong Kong Monetary Authority, the Australian Securities and Investment Committee, and the Ontario Securities Commission—have promulgated record-keeping and reporting rules for OTC derivatives transactions that require counterparties to be identified by LEIs. Given the progress by the public and private sectors working together to implement the Global LEI System, DTCC anticipates LEI mandates in rulemaking in the U.S. to greatly accelerate, thus enabling a significant improvement in systemic risk management.

Global LEI adoption would serve as a significant step in the process to increase transparency and mitigate risk. However, additional standards need to be addressed at a global level to support the trade reporting regime. For example, currently there is a lack of global agreement regarding the appropriate standard for a trade identifier or product identifier. In addition, more client information must be standardized such as the branch locations for each Global LEI and the hierarchy structure for company (referred to as parent LEIs to enable aggregation by grouping all legal entities to one parent). These standards are necessary requirements in creating an effective regulatory reporting framework.

Making Data Useful: Aggregation and Standardization

Notwithstanding divergent reporting requirements, jurisdictions have made significant progress in implementing derivatives reporting rules and a massive amount of data is being reported to trade repositories. However, data collection alone is not sufficient to address the G20 transparency goal. The ability to aggregate this data, convert it into information, and use it to monitor the build-up of risk in the system is absolutely essential.

Understanding the challenges associated with data aggregation requires distinguishing between the requirements of micro-prudential regulators, who are responsible for local market surveillance, and macro-prudential regulators, who are focused on monitoring risk in the financial system. While national reporting regimes have been mostly effective at providing transparency into local markets, the same is not true at the macro-prudential level due to the fragmented nature of jurisdictional reporting rules, which has led to the absence of harmonized global data standards across jurisdictions and trade repository providers. By lacking a common vocabulary with which to communicate, trade repositories are unable to share and aggregate data on a global scale.

To address this situation, regulators must come to agreement on the specific data set required for systemic risk identification and adopt consistent reporting standards across jurisdictions in order to fully capitalize on the benefits of the data being collected.

Data standardization requires a collaborative effort by the industry, trade repositories and regulators globally. As operator of the largest global trade repository, DTCC strongly supports efforts to create a common data vocabulary, such as those spearheaded by the Committee on Payments and Market Infrastructures ("CPMI") and International Organization of Securities Commissions ("IOSCO") Harmonization Working Group. Active dialogue between the industry and its supervisors is vital to resolving this fundamental issue.

In June 2015, DTCC provided recommendations to CPMI/IOSCO, detailing a proposed path towards global data harmonization with credit derivatives identified as

[10] *See Swap Data record-keeping and Reporting Requirements,* 77 FED. REG. 2136 (Jan. 13, 2012).

[11] *Regulation SBSR—Reporting and Dissemination of Security-Based Swap Information,* 80 FED. REG. 14564 (Mar. 19, 2015).

the first step.[12] The approach involves harmonizing approximately 30 data fields across global trade repository providers, essentially creating a global data dictionary. These fields are viewed as critical to financial stability and systemic risk analysis.

3. Remove Barriers to Global Data Sharing

While data standardization is essential, it will have limited impact if barriers that hinder cross-border data sharing are not also concurrently addressed. Significant legal barriers need to be removed before data can be aggregated at a cross-border level and used by relevant supervisory authorities.

For example, the Dodd-Frank Act requires swap data repositories to obtain indemnification agreements before sharing information with regulatory authorities.[13] The indemnification requirements in Section 21(d) of the Commodity Exchange Act and Section 13(n)(5)(H) of the Securities Exchange Act of 1934, as amended by Dodd-Frank, require—prior to sharing information with various regulatory authorities—that (i) registered SDRs receive a written agreement from each entity stating that the entity shall abide by certain confidentiality requirements relating to the information on swap transactions that is provided, and (ii) each entity must agree to indemnify the SDR and the CFTC or SEC, respectively, for any expenses arising from litigation relating to the information provided.

In practice, these provisions have proven to be unworkable and run counter to policies and procedures adopted by regulatory bodies globally to safeguard and share information. In addition, these provisions pose a significant barrier to the ability of regulators globally and within the U.S. to effectively utilize the transparency offered by SDRs, and may have the effect of precluding U.S. regulators from seeing data housed at non-U.S. repositories. These provisions also limit access to and sharing of data among U.S. authorities such as the CFTC, SEC, the Federal Reserve Board, and the Office of Financial Research.

Concerns regarding global information sharing have been echoed by regulatory officials and policymakers globally. In an August 2013 report, the Committee on Payment and Settlement Systems and the Board of IOSCO highlighted that legal obstacles may preclude trade repositories from providing critical market data and encouraged the removal of legal obstacles or restrictions to enable effective and practical access to data.[14]

During a February hearing this year before this Committee, CFTC Chairman Timothy Massad stated that removal of the indemnification provisions would facilitate the sharing of information and collaboration among regulators to monitor risk.[15] CFTC Commissioner J. Christopher Giancarlo and Commissioner Mark Wetjen also identified indemnification as a priority issue and expressed support for a legislative fix during an April hearing before the Subcommittee on Commodity Exchanges, Energy, and Credit.[16] In addition, SEC Commissioner Michael Piwowar has voiced concern and called for removal of the indemnification provisions.[17]

DTCC strongly supports legislation that would resolve issues surrounding the indemnification provisions. DTCC is pleased that removing the indemnification provisions from Dodd-Frank remains a bipartisan, bicameral priority for the current Congress. Indemnification correction amendments have recently been considered by the House Financial Services, House Agriculture, House Appropriations, Senate Banking and Senate Agriculture Committees.

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[12] *See* Press Release, *DTCC Proposal to CPMI IOSCO on Global Data Harmonization* (June 18, 2015), available at *http://www.dtcc.com/news/2015/june/18/dtcc-proposal-to-harmonization-working-group.aspx.*

[13] Such regulatory authorities include U.S. Prudential Regulators, the Financial Stability Oversight Council, the Department of Justice, foreign financial supervisors (including foreign futures authorities), foreign central banks, and foreign ministries.

[14] *See* CPSS–IOSCO Report, "Authorities' Access to Trade Repository Data" (Aug. 2013).

[15] For example, Chairman Massad stated that if legislation "did remove [the indemnification] provision, then it would facilitate . . . the sharing of information." *See* 2015 Agenda for CFTC: Hearing Before the H. Comm. On Agric., 114th Cong. (2015) (colloquy between Chairman Massad and Congressman Eric Crawford).

[16] *See* Testimony of CFTC Commissioner J. Christopher Giancarlo Before the H. Comm. on Agric., Subcomm. on Commodity Exchanges, Energy, and Credit (April 14, 2015), available at *http://agriculture.house.gov/sites/republicans.agriculture.house.gov/files/images/Giancarlo%20Testimony.pdf;* see also Testimony of Mark Wetjen, Commissioner, CFTC, Before the H. Comm. on Agric., Subcomm. on Commodity Exchanges, Energy, and Credit (April 14, 2015), available at *http://agriculture.house.gov/sites/republicans.agriculture.house.gov/files/images/Wetjen%20Testimony.pdf.*

[17] Commissioner Michael Piwowar, Secs. and Exch. Comm'n, Remarks at the Int'l Swaps and Derivatives Ass'n 30th Annual General Meeting (Apr. 22, 2015).

On July 14, the House passed the *Swap Data Repository and Clearinghouse Indemnification Correction Act of 2015* (H.R. 1847). DTCC applauds House passage of H.R. 1847, which would help ensure regulators obtain a consolidated and accurate view of the global OTC derivatives marketplace. We urge the Senate to move swiftly to support this non-controversial, technical fix.

There is precedent for global information sharing. As mentioned previously, DTCC's Trade Information Warehouse, established in 2006, provided authorities access to data pursuant to guidance issued by the ODRF, a group of regulators from across the globe that were able to define the parameters of what information could be disclosed based on parties to the transaction and the underlying reference entity to whom credit protection was being bought or sold. The credit derivatives data provided was standardized, aggregated and shared across jurisdictions. The ODRF serves as an example of a well-functioning governance model, demonstrating the potential of what can be achieved with consistent data standards, data aggregation and clear access rules.

Looking Forward: Global Regulatory Coordination and Market Guidance

Following the removal of legal barriers, market infrastructures such as DTCC will be able to play an important role in supporting data quality efforts to ensure that data can be turned into useful information. A key step is the establishment of a governance framework to set the conditions upon which regulators could access each other's data once legislative hurdles such as Dodd-Frank's indemnification provisions are removed.

A global college of regulators—for example, CPMI IOSCO—is best positioned to provide the industry with specific guidelines outlining clear data access rules based on the individual regulator's authority. Such an undertaking requires defined cross-border guidance that each jurisdiction adopts and adheres to. While removing legal barriers and establishing a governance model for data sharing will take time, these are necessary elements to achieve the G20 goal of increased transparency and systemic risk mitigation.

To continue progress on global derivatives reform, a critical next step is the analysis of data and use of tools to transform data into information which can be used to identify systemic risk. That is the value provided by reporting data—to provide regulators with transparency into the marketplace to assist with potential risk identification and mitigation.

DTCC encourages CPMI, U.S. policymakers and regulatory bodies globally to take a leadership role in the governance process and address global standards. Collaboration among the industry and regulators is paramount and an increased sense of urgency is needed to address current challenges.

Conclusion

Mr. Chairman, Ranking Member, thank you for inviting me to speak today on this important topic. As you can see, a great deal of progress has been made in modernizing the global derivatives market, but there is much work yet to be done. I will be happy to answer any questions you may have and look forward to a continued dialogue on these issues with you and your staffs.

ATTACHMENT

G20's Global Derivatives Transparency Mandate

January 2015

About DTCC

With over 40 years of experience, DTCC is the premier post-trade market infrastructure for the global financial services industry. From operating facilities, data centers and offices in 15 countries, DTCC, through its subsidiaries, automates, centralizes, and standardizes the post-trade processing of financial transactions, mitigating risk, increasing transparency and driving efficiency for thousands of broker/dealers, custodian banks and asset managers worldwide. User owned and industry governed, the firm simplifies the complexities of clearing, settlement, asset servicing, data management and information services across asset classes, bringing increased security and soundness to the financial markets. In 2013, DTCC's subsidiaries processed securities transactions valued at approximately U.S.$1.6 quadrillion. Its depository provides custody and asset servicing for securities issues from 139 countries and territories valued at U.S.$43 trillion. DTCC's global trade repository processes tens of millions of submissions per week.

To learn more, please visit www.dtcc.com or follow us on Twitter @The—DTCC.

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Abstract

Progress on global derivatives reform is at a critical juncture. The lack of transparency, identified during the 2008 crisis as critical to the supervision of the financial system, remains only partly addressed.

As a result, the cross-border identification of systemic risk remains beyond the reach of macro-prudential authorities. Trade repositories, heralded as essential to achieving greater transparency in the global derivatives markets, have not been able to reach their full potential as tools for systemic risk oversight.

It is imperative that a plan of action, together with a concrete timetable, is agreed upon to remove the remaining barriers, practical and legal, that would turn the aspiration of global derivatives market transparency, and the identification and management of global systemic risk, into a reality.

Executive Summary

The global financial crisis of 2008 shook the foundations of the financial system to the core. This period was followed by a commitment, at a global level, led by the Group of 20 (G20) to take a number of measures which would enhance the transparency in the derivatives market and improve the global response to systemic risk stemming from cross-border derivatives trading activities.

The policy response which followed the G20 commitments was, however, developed along national or regional lines, thus focusing on the identification of risk originating at a local level and posing risk to the stability of the respective local jurisdictions. This approach, which was driven by micro-prudential regulatory requirements, has resulted in a fragmented regulatory landscape that is unable to respond to the original G20 goal of preserving the integrity of the global financial system as a whole.

The fact that this policy response has not been tested to date does not mean that the risks that the financial system faced in 2008 are less real. Derivatives markets remain as global and as interconnected as ever. Whilst achieving transparency, albeit at a local level, has been a significant accomplishment for both the regulatory community and the industry, we should not confuse this level of transparency with the ability to monitor and identify systemic risk and thereby protect and preserve global financial stability.

As the dust settles on the first phase of the reforms which immediately followed the financial crisis, it is imperative that we take a step back to assess the progress made to date against the G20 commitments and agree a plan of action to enable macro-prudential regulators to address the original G20 mandate.

This paper provides an analysis of current status against the G20 goal of increasing global derivatives market transparency, and identifies what is still required to ensure that the G20 aspirations are turned into a reality.

We call on the global regulatory community for a harmonised global plan of action with an appropriate timetable to:

- Reach agreement on the global data set required to identify systemic risk.
- Revise existing laws which prevent cross-border data sharing.
- Agree consistent data standards to be adopted across jurisdictions, leveraging existing standards where possible.
- Agree a governance model enabling cross-border data sharing. This could leverage proven governance models such as that defined by the OTC Derivatives Regulators' Forum (ODRF) around the credit derivatives Trade Information Warehouse (TIW), the forerunner of the modern trade repository.

Introduction

Over 5 years ago, G20 finance ministers and central bankers, in response to the most severe financial crisis since the Great Depression, made a commitment to "adopt a set of policies, regulations and reforms to meet the needs of the 21st century global economy." [1]

Among these was the commitment to make the global over-the-counter (OTC) derivatives markets safer and more transparent, and to create powerful tools for the supervision of global participants.

More specifically:

- The G20 agreed that "all standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements."
- The G20 leaders further called on the Financial Stability Board (FSB) and its relevant members to "assess regularly implementation and whether it is sufficient to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse."

That the G20 aim was to promote global financial stability was already evident at its earlier London summit, in April 2009, where it committed to:

- Strengthening financial supervision and regulation by "establishing much greater consistency and systematic cooperation between countries, and the framework of internationally agreed high standards that a global financial system requires."
- "Amend our regulatory systems to ensure authorities are able to identify and take account of macro-prudential risks across the financial system . . . to limit the build-up of systemic risk."

It further added that:

- "We will ensure that our national regulators possess the powers for gathering relevant information on all material financial institutions, markets, and instruments in order to assess the potential for their failure or severe stress to contribute to systemic risk. This will be done in close coordination at international level in order to achieve as much consistency as possible across jurisdictions." [2]

This commitment was followed by the adoption, in November 2009, of the 20 recommendations put forward by the International Monetary Fund (IMF) and the FSB in their report "The Financial Crisis and Information Gaps". The report identified four areas in which data gaps would need to be addressed, namely to better capture the build-up of risk in the financial sector, to improve data on international financial network connection, to monitor the vulnerability of domestic economies to shocks, and to enable communications of official statistics.[3]

Since then, important steps have been taken towards developing a framework to address these goals for the global derivatives market. Trade reporting regimes are now in place in major derivatives jurisdictions around the world and national regulators have access to more derivatives trading data than ever before.

In its 2009 Pittsburgh statement, the G20 said that a "sense of normalcy should not lead to complacency". This statement is more relevant today than ever before as we put increasing time and distance between the current signs of global recovery and the almost catastrophic crisis of 2008.

It is against this backdrop that this paper aims to address five fundamental questions:

- Has the G20 policy response brought about the required transparency?
- Can existing data collection satisfy the G20 mandate?
- What are the practical challenges to improving data quality and converting data into information?
- What legislative hurdles need to be overcome to ensure that data can be shared globally?

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[1] *G20 Leaders statement: The Pittsburgh Summit,* 24–25 September 2009 *http://www.g20.utoronto.ca/2009/2009communique0925.html.*

[2] *Declaration on strengthening the financial system—London Summit,* 2 April 2009 *http://www.g20.utoronto.ca/2009/2009ifi.html.*

[3] *The Financial Crisis and Information Gaps:* Report to the G20 Finance Ministers and Central Bank Governors *http://www.financialstabilityboard.org/publications/r_091029.pdf.*

- What are the possible governance models for cross-border data sharing?

1. Has the G20 policy response brought about the required transparency?

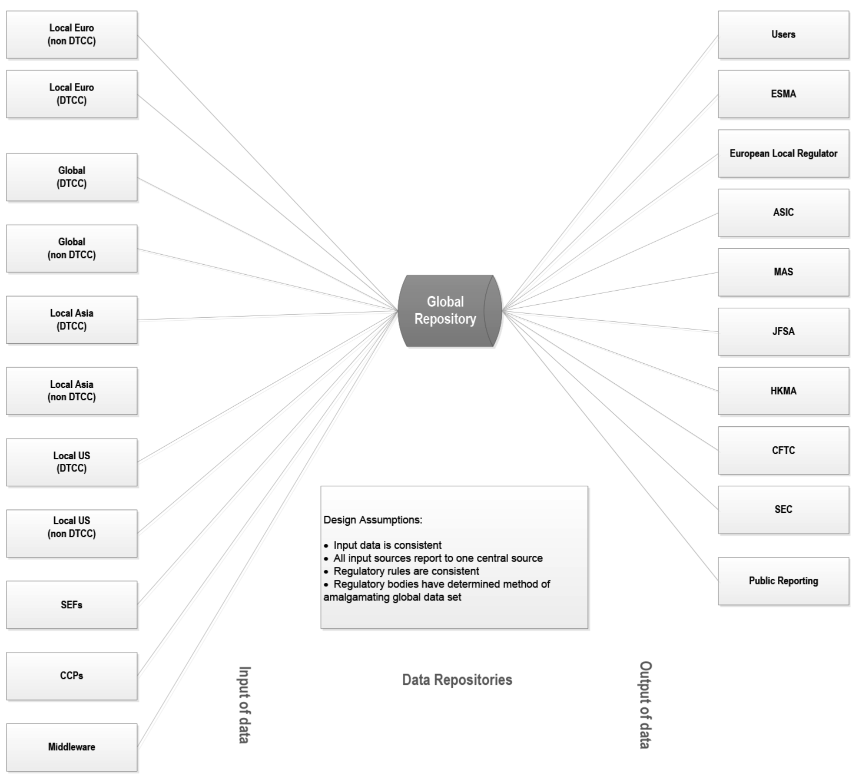
Although much transparency has been created through national reporting regimes, the answer must be a resounding 'no' if we measure success against the original G20 goal of creating the transparency which would help identify and mitigate global systemic risk.

Major derivatives jurisdictions around the world have developed legislative frameworks to mandate reporting of derivative trades to trade repositories and have devised detailed local rules and designated authorised trade repositories to operate within their domains. But far from achieving the global consistency implicitly aspired to by the G20, this localised approach has resulted in divergences between reporting regimes which can be grouped into three categories:

- **Scope of Regulations:** For example, jurisdictions across Asia-Pacific, the U.S. and Canada mandate reporting of OTC derivatives trades only, while in the EU reporting of exchange-traded derivatives also forms part of the scope;
- **Reporting Obligations:** Single *versus* dual sided reporting is mandated inconsistently between EU, U.S., and Asia-Pacific; and
- **Reportable Data:** Regional variations exist in the data fields that are reportable, although there is some consistency in a core set of data fields.

In a paper published in April 2013,[4] DTCC argued that to achieve the G20 goals of transparency required an optimal trade reporting framework which consisted of harmonised reporting requirements across jurisdictions and one single repository collecting data as a public good.

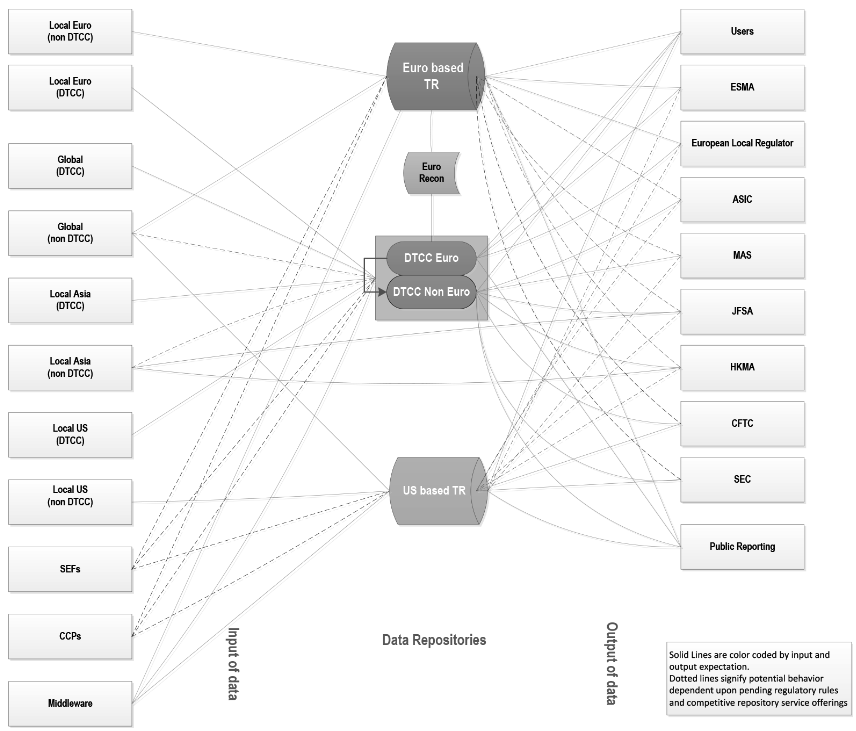
Fig. 1. DTCC's Original Vision for the Global Trade Repository Model



[4] "New infrastructures for a sounder financial system", Michael C. Bodson, CEO, DTCC, *Financial Stability Review, Banque de France,* April 2013.

However, what we have today is exactly the opposite, a derivatives reporting environment, fragmented across jurisdictions as well as across multiple repositories. It is clearly impractical to wind back the clock on these developments, it is imperative that we focus on creating the necessary conditions for the reporting function to fulfil the G20 mandate.

Fig. 2. The Current Trade Reporting Reality



2. Can existing data collection satisfy the G20 mandate?

Notwithstanding divergent reporting requirements which exist across major derivatives jurisdictions, data is being collected and on the whole compliance has been good. However, data collection itself is not sufficient to address the transparency goal. What is needed is the ability to aggregate this data, convert it into information and then use it to monitor the build-up of risk in the system.

To understand the challenge of aggregating the data and converting it into information requires a distinction between the requirements of micro-prudential regulators for the purposes of local market surveillance, and the requirements of macro-prudential regulators for the purposes of monitoring the build-up of risk.

To ensure that both regulatory functions can be performed, any efforts to address the derivatives aggregation challenge should therefore be preceded by a clear distinction between two tier data sets—both a national or regional data set for the purposes of market surveillance together with a smaller global data subset for systemic risk oversight.

- The first dimension of the data set required for micro-prudential supervision is well served by the current national reporting regimes. This data set includes numerous data fields which national regulators require to be able to perform their own analysis on a number of issues related to local market surveillance. In jurisdictions with multiple trade repositories, given that all relevant local market data is housed in locally authorised trade repositories, the challenge of aggregating that data and converting it into useable information is predominantly an issue of having common local standards and appropriate analytical tools—an important challenge, but certainly not insurmountable.

- The second dimension of a derivatives data set—the global data set required for systemic risk surveillance—is more challenging to implement. Namely, it requires:
  - Cross-border agreement on a specific set of data needed for systemic risk identification;
  - Adoption of consistent reporting standards across jurisdictions for those specific data fields;
  - Definition of the population required to report;
  - Removal of legal barriers to data sharing;
  - Agreement on a governance model for data sharing.

In the following chapters, we explore the actions required to overcome these practical and legal hurdles.

3. What legislative hurdles need to be overcome to ensure that data can be shared globally?

Before data can be aggregated at a cross-border level and used by the relevant supervisory authorities, significant legal barriers need to be removed. Failure to address these legal barriers would make all other efforts to address derivatives transparency futile. Removing legal barriers to data sharing—some of which predate derivatives reform such as data protection laws, blocking statutes, state secrecy laws and bank secrecy laws—requires international regulatory cooperation for the greater public good.

Today, regulatory cooperation happens on many levels. Currently unique among them is the bilateral Memorandum of Understanding signed between the Australian Securities and Investments Commission (ASIC) and the Monetary Authority of Singapore (MAS) allowing trade repositories licensed in one jurisdiction to provide relevant data to the authority in the other jurisdiction. This agreement, together with ASIC's alternative trade reporting arrangements which allow firms already reporting to a recognised trade repository in another jurisdiction, to discharge their reporting obligation in the ASIC jurisdiction, is a step towards fostering greater cooperation between international regulators which will be essential for successful cross-border oversight. We applaud the initiative of these two authorities and hope it sets an important global precedent.

Bilateral agreements are useful steps towards building the case for greater cooperation as they make eventual data sharing easier at a multi-lateral level. However, multi-lateral agreements are a quicker way to achieving the ultimate goal of global transparency mandated by the G20.

For agreements at a multi-lateral level to work, revision of some legislative provisions which prohibit data from being shared need to be undertaken. For example, the Dodd-Frank Act in the U.S. incorporates an 'indemnification clause' requiring non-U.S. regulators to indemnify U.S. regulators and trade repositories from possible data misuse before access is granted. This creates a financial cost as well as a legal impediment for non-U.S. regulators, and effectively prevents them from viewing data relevant to their jurisdictions collected and held by trade repositories located in the U.S. and operating under the Dodd-Frank Act. Revision of legislation is the only way to ensure privacy laws and other legislative hurdles do not compromise the efforts towards data aggregation which are needed to ensure the regulators have a complete and timely picture of risk in the system. However, bringing legislative change remains extremely challenging.

The need for such change was further stressed in a recent letter from the OTC Derivatives Regulators' Group (ODRG) to the FSB Chairman, Mark Carney.[5] The ODRG called for urgent changes, including legislative changes where required, to remove provisions that prevent the identification of counterparties under reporting obligations to trade repositories. The ODRG further makes the case for setting a deadline for the unmasking of counterparty information, and recommends the FSB seek the G20 leaders' agreement to ensure the removal of those barriers.

The agreement on the global data set that is required for systemic risk oversight should make regulatory cooperation and removal of legislative hurdles easier as it will focus attention on a specific data set needed for systemic risk oversight, rather than numerous fields which are required for market surveillance. The information should be sufficiently high level (*e.g.,* LEI counterparty level information) to allow the relevant authority to address any legislative limitations on sharing those specific fields.

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[5] *OTC Derivatives Regulators' Group—Barriers to Reporting to Trade Repositories,* August 2014, *http://www.esma.europa.eu/system/files/letter_to_fsb_08122014.pdf*.

4. What are the practical challenges to improving data quality and converting data into information?

Following the removal of legal barriers, market infrastructures can play an important role in supporting data quality efforts to ensure that data can be turned into globally useful information. We believe these efforts should focus on the following areas:

Global Data Set

Global regulators must agree on the set of data fields which, at a global level, can be used to identify the impact of market activity outside their jurisdiction on their jurisdiction, and *vice versa.*

To understand why this data set would differ from the current national reporting requirements, consider this scenario. During the collapse of Lehman Brothers, if two parties outside the U.S. were trading on an underlying Lehman Brothers asset, data collected under U.S. rules, which allow for the supervision of U.S. persons only, would have misrepresented the scale of the problem.

Advancing systemic risk oversight, therefore, requires an agreement on the global data set to be aggregated which mitigates the interconnectedness of the financial system.

And before you say 'not possible!', the credit derivatives markets provide an important precedent of how such a global data set can deliver the transparency that global regulators require to monitor risk in the system.[6]

Once an agreement on this global data set has been reached, the focus on improving data quality by advancing consistent standards can begin.

Global Identifiers

Much has been said about the importance of adopting consistent data standards across jurisdictions, and the focus of the debate has often centred around three particular standards which relate to information on the product, taxonomy, and the counterparties to a trade. While these standards are important, our view is that their use, whilst helpful, does not address the lack of standards across a number of other fields. For aggregation at a global level to work, data standards for all fields required for aggregation must be agreed upon.

The Legal Entity Identifier (LEI) is the standard that is most evolved in that regard. We have a situation where a global standard is being adopted, but more work is required to enforce its usage.

The Unique Product Identifier (UPI) does not exist in any meaningful way; different regulations allow for products to be expressed in different ways and the product taxonomy is not granular enough. For UPIs to work, a global standard must be adopted and enforced.

The case of the Unique Trade Identifier (UTI) is slightly different from the above in that the difficulty is not in adopting a consistent standard for generating a unique code, but in establishing an infrastructure which is needed to exchange the identifier between trading counterparties in time for reporting cycles.

Data Standards

At a local level, the issue of data standardisation stems from the fact that local rules in place today are frequently not granular enough to recommend specific data standards. Data standardisation remains a highly desirable outcome and must continue to be improved through a concerted effort by both the industry and the repositories, in collaboration with local market regulators. However, this will take time. To accelerate the development of appropriate systemic risk oversight and ensure that the quality of data is fit for purpose, we recommend that work to standardise fields within the global data set which are subject to the aggregation mandate must begin immediately.

The principles for Financial Market Infrastructures (FMIs) which have been published by the International Organisation of Securities Commissions (IOSCO) and are being monitored by the Committee on Payments and Market Infrastructures (CPMI) provide a useful foundation upon which to further build towards agreeing common international standards for reporting of derivatives trades.

The principles for FMIs could be extended in scope to include data requirements and standards which may have some commonality with existing requirements in ju-

[6] *See* boxout on ODRF.

risdictions which have mandated trade reporting, but resulting in an outcome which provides harmonisation of the requirements and standardisation of data at a global level.

Ideally, a single standard setting authority should be responsible for monitoring the adoption of standards in national rulemaking, monitoring compliance with those rules as well as outcomes. This is a proven three level process which has been successfully adopted by the Basel Committee and the CPMI on monitoring the principles for FMIs, and could be extended in scope to create the necessary conditions for aggregating the derivatives data for the purposes of monitoring systemic risk.

5. What are the possible governance models for cross-border data sharing?

Once the global data set has been identified, it is natural to turn attention to the question of what governance framework is required for data sharing.

A governance model would set the conditions upon which regulators could access each other's data, *e.g.,* on the basis of entitlements, based upon a jurisdiction's market share in the global derivatives markets.

Important precedents exist at a multi-lateral level which show that regulatory cooperation can make cross-border data sharing possible. It would be impossible to imagine the response to any global issue—from air traffic control, nuclear safety, global health, terrorism—without a framework for global data sharing. What these numerous examples tell us is that, while they may not be perfect, they are certainly achievable. The derivatives market is no exception.[7]

The governance model can be founded upon an entitlement scheme, such as the one adopted by the ODRF for credit derivatives, based on the regulator type. What this means in practice is that the entity should be provided with a set of guidelines on how information needs to be presented in terms of aggregation, the underlying detail, and allow access based on the individual regulator's authority. Establishing the criteria for this will require agreeing what is the nature of the trade which leads that trade to be available to another regulator. At the high level, this can come down to either the domicile of the counterparty or the domicile of the underlying reference entity that was being traded in the credit derivatives world.

What the ODRF example shows us in particular is that existing infrastructures can be leveraged to perform the aggregation of OTC derivatives data, provided the relevant supervisory authorities agree on a governance layer. For aggregation to work, as demonstrated in the credit derivatives markets, you need to have consistent data with very clear access rules.

The OTC Derivatives Regulators' Forum

The OTC Derivatives Regulators' Forum (ODRF) is comprised of international financial regulators including central banks, banking supervisors, and market regulators, and other governmental authorities that have direct authority over OTC derivatives market infrastructure providers or major OTC derivatives market participants, or consider OTC derivatives market matters more broadly. It was formed in 2009 to provide regulators with a means to cooperate, exchange views and share information related to OTC derivatives CCPs and trade repositories.[8]

ODRF began coordinating the voluntary sharing of credit derivatives data held by trade repositories, across jurisdictions and in accordance with governance and clear access guidelines. DTCC, having established its Trade Information Warehouse (TIW), a trade repository and post-trade processing infrastructure for OTC credit derivatives in 2006, used the guidelines provided by the ODRF to provide global regulators access to detailed transaction data on virtually all credit derivatives trades executed worldwide in which they have a material interest to monitor systemic risk.

The success of this initiative was due to the fact that data was standardised and aggregated in the TIW, supported by a data sharing agreement which meant that data could be accessed and interpreted by regulators globally in accordance with the ODRF guidelines. While the ODRF did not facilitate an agreement on the adoption of consistent standards, it remains a useful example of a well-functioning governance model, demonstrating the potential of what can be achieved if you have:

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[7] *See* boxout on the OTC Derivatives Regulators' Forum (ODRF) which governs data sharing in the credit default swaps market, and Bank of International Settlements International Banking Hub which has been developed by the FSB to improve the collection and sharing of information linkages between global systemically important financial institutions and their exposure to different sectors and markets.

[8] *ODRF: Framework for information sharing and cooperation among OTC derivatives regulators,* 22 September 2009 *http://www.otcdrf.org/documents/framework_sept2009.pdf.*

- consistent data standards;
- data aggregated in one place;
- clear access rules.

Financial Stability Board Data Gaps Project

As part of the G20 initiatives aimed at promoting financial stability, the Financial Stability Board (FSB) has developed an "international framework that supports improved collection and sharing of information on linkages between global systemically important financial institutions and their exposures to different sectors and markets. The objective is to provide authorities with a clearer view of global financial networks and assist them in their supervisory and macro-prudential responsibilities."

The governance of this initiative includes harmonised collection of data, which consists of common data templates for global systemically important banks to ensure consistency in the information collected. The data is then hosted in a central international data hub hosted by the Bank of International Settlements (BIS).

Data collection and sharing through the hub is made possible through a multilateral Memorandum of Understanding which establishes the arrangements for the collection and sharing of information through the BIS hub.

A governance group consisting of participating authorities oversees the pooling and sharing of information and monitors compliance with the multilateral framework. Data is collected by home authorities and then passed on to the data hub. Reports are then prepared and distributed to participating authorities, who can require additional information from the data hub, which fulfils the request after obtaining written consent from data providers.

Conclusion

Trade repositories have the potential to become powerful tools in identifying systemic risk, but they are currently unable to perform this role because there are practical and legal impediments which make transparency unattainable.

Urgent action is required to remove these barriers and any efforts should focus on five key areas:

- First, there needs to be an agreement on the global data set required to identify systemic risk.
- Second, existing laws which prevent cross-border data sharing must be reviewed.
- Third, consistent standards which apply to this data set must be adopted across jurisdictions, leveraging existing standards where possible. This will require appointing a standards authority which would monitor and enforce their adoption.
- Fourth, a governance model which enables data sharing among regulators must be agreed upon. This should leverage where possible proven governance models such as the one adopted by the ODRF.
- Fifth, a timetable for action should be agreed upon, supported by the G20, providing a framework for the completion of the work which began in 2009.

Only when these steps have been taken, we can finally put real distance between us and the 2008 financial crisis, confident that the lack of transparency which nearly brought the financial system to collapse has truly been addressed.

For Further Information about your derivatives reporting requirements, please visit *www.dtcc.com/gtr*.

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The CHAIRMAN. Thank you, Mr. Thompson. Dr. Parsons.

STATEMENT OF JOHN E. PARSONS, PH.D., SENIOR LECTURER, SLOAN SCHOOL OF MANAGEMENT, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MA

Dr. PARSONS. Good morning, Chairman Conaway, Ranking Member Peterson, and Members of the Committee. Thank you for the opportunity to be here. A healthy, well regulated derivatives market can be a valuable contributor to a vibrant and productive economy. The U.S. futures and options markets demonstrated that throughout the 20th century. Unfortunately, late in the 20th century, the U.S. and other countries took a gamble on an unregulated swaps market, with lax risk management practices, high leverage on transactions, organized in the shadows, outside of supervision, sunlight, and competition.

The result was a disaster for the U.S. economy. More than ten million Americans lost their jobs. Countless others suffered economic hardships of many kinds. Businesses suffered. The Dodd-Frank Act was written to return us to healthy financial markets that are a source of stability and economic progress. In resolutely implementing this financial reform, the U.S. is once again showing leadership. The U.S. has a long tradition of healthy financial regulation that has made our financial markets among the best in the world. The Dodd-Frank Act is another example of that leadership.

The U.S. has made significant progress in implementing the derivative reforms of Title VII. The prepared testimony I submitted discusses that in more detail, and other witnesses have spoken about it here. In the short time that I have now, I want to focus your attention on one specific problem discussed in my testimony, which I hope I can communicate to the Committee about that will give you a richer sense of the work that is still undone, and the obstacles that remain.

One of the key goals of the reform is transparency. Swap trades should be reported somewhere so that regulators and the larger public will know important facts about the size and structure of the market. This is one of the least contentious goals of the reform, and one of the most critical if we are to avoid or manage a future crisis. So I want to ask the question how are we doing, and I want to answer that with a little personal experience of my own with the data that I think is easy for everybody here to grasp.

In November 2013 the CFTC released its first weekly swaps report, which is a compendium of some of the information from that trade reporting made available to the public. Since I am a follower of the market, this first report was something I was keen to take a look at. It contains information on many things, but since my work with businesses revolves largely around commodity derivatives, I turned to that table first.

The table shows the gross notional outstanding, it is a common index of size of the market, and the figure it showed was $1.7 trillion. I want you to keep that figure in mind. It is going to be key here. That is a start at the kind of information we badly need. It is just a summary figure compiled out of the more detailed information in the new databases where trades are reported. The table also contains a list of categories of specific commodity derivatives, like those for agriculture, energy, and metals, but there were no figures in those individual line items, just the notation N/A, which the footnote explains is not available. I was a little disappointed, but not entirely surprised. This was just the first report, and just the beginning. It takes great time and effort to put these things together.

Each week the CFTC releases a new report, and each week I take a look. Each week I notice that the size of the commodity swaps market is exactly $1.7 trillion. It is never $1.6 trillion or $1.8 trillion, it is always $1.7 trillion. That seems odd. Then I noticed the footnote that explains this figure is not really a total based directly on reported trades, but actually just an estimate. It didn't explain how the estimate was made. I followed the CFTC's weekly reports for more than 90 weeks over a year and a half. In my prepared testimony I gave you a screenshot of this table from the website of the CFTC. The size of the commodity swaps market is still being reported at exactly $1.7 trillion, the same number week after week for 90+ weeks, a year and a half.

Now, I have colleagues who are very sophisticated with statistics, and can analyze complicated data sets that are beyond me, that look like a blur to me. This is the first time that I can say I can analyze a data set and tell you something is wrong here. That is not an estimate. That is a plug. It would be more honest to report N/A, not available. I don't really understand why we are still putting out data that doesn't tell you anything, but we are, and it is an indication of the deep problems. It is an indication that everybody on this Committee can see. You can go to the website and look at it yourself. And it is an indication that, while we have made great progress, there is still a long way to go. Thank you very much.

[The prepared statement of Dr. Parsons follows:]

Prepared Statement of John E. Parsons, Ph.D., Senior Lecturer, Sloan School of Management, Massachusetts Institute of Technology, Cambridge, MA

Progress and Problems in Reforming the Swaps Marketplace

My name is John E. Parsons. I am a Senior Lecturer in the Finance Group at the MIT Sloan School of Management and the Head of the MBA Finance Track. I a Research Affiliate of the MIT Center for Energy and Environmental Policy Research where I was previously the Executive Director. I have a Ph.D. in Economics from Northwestern University. At MIT I teach a course on risk management for non-financial companies, the so-called end-users or commercial hedgers. I have published research on theoretical and applied problems in hedging and risk management, and I have been a consultant to many non-financial companies on hedging problems of various kinds, as well as on other financial issues. I have participated in a number of Roundtables at the CFTC regarding the reform of the derivatives markets, and I represent BetterMarkets on the CFTC's Global Markets Advisory Committee. I have testified several times to the House Financial Services Committee and its subcommittees on derivatives market reform. I recently completed a term as a Visiting Scholar at the Federal Energy Regulatory Committee studying financial trading in electricity markets.

Introduction

Unregulated derivatives played a major role in the 2008 financial crisis. All the devils at play elsewhere in the financial system were also at play in the derivatives markets, but two points deserve highlighting. Derivatives served as a trigger for key events in the crisis and as a vector for contagion, helping to spread the crisis throughout the system. Both points were manifested in the collapse of insurance giant American International Group (AIG), among the most notorious episodes of the crisis. The company's London subsidiary, AIG Financial Products, had long profited on the sale of credit default swaps. The deregulation of the OTC derivatives market allowed these to be sold without any up-front capital or margin. The state insurance commissioners who supervised AIG's other insurance businesses had no authority *vis-à-vis* these derivatives, despite the fact that these swaps were marketed to serve a role comparable to insurance. AIG's financial regulator, the Office of Thrift Supervision, was ill equipped and completely ineffective at supervising the company's derivative operation. As losses on these credit default swaps accumulated and AIG's financial position deteriorated, the firm suffered the effects of a classic bank run, losing access to short-term financing such as commercial paper and repo. The U.S. Government stepped in and committed more than $180 billion to AIG's rescue, including a loan from the Federal Reserve as well as Treasury funding under the Troubled Asset Relief Program (TARP).

More than any other single event, it is the case of AIG that provided the political clarity behind the need to regulate the derivatives market. In Senate testimony in 2009, Federal Reserve Chairman Ben Bernanke said, "If there is a single episode in this entire 18 months that has made me more angry, I can't think of one, other than AIG. . . . AIG exploited a huge gap in the regulatory system. There was no oversight of the Financial Products division. This was a hedge fund, basically, that was attached to a large and stable insurance company, made huge numbers of irresponsible bets—took huge losses." For the public and for President Obama, the case of AIG is especially notorious because even after the company had taken taxpayer bailout funds, its Financial Products division proceeded to pay top managers enormous bonuses.

The case also provides intellectual clarity on the necessary shape of reform. In the midst of the crisis, regulators found themselves ill equipped to respond. U.S. law had exempted AIG's derivative transactions from oversight, and so no government authority had knowledge about the company's trades, nor did any authority have substantive knowledge about the larger market in which those trades took place. Lacking this information, no government authority could have acted in advance of the crisis. Moreover, once we found ourselves in the midst of the crisis, the authorities stumbled about without critical information. This case made clear that reform must provide regulators with information about any and all corners of the derivatives market and the authority to act on that information.

A second lesson was that risk management deficiencies involving derivatives at one institution like AIG could threaten other central parts of the system. As the news of AIG's financial woes became known, concern immediately arose about major banks, both American and European, with large exposure to AIG through the web of derivative contracts between the banks and AIG. Any reform of the derivatives market should help reduce the transmission of problems between institutions. This should be integrated with the larger reform of the financial system.

The other crisis events in which derivatives played a role are less widely known, but equally important in guiding the design of reform. In particular, derivatives played a supporting role in the troubles at several other financial institutions in 2008, increasing the fragility of the system. For example, both Bear Stearns and Lehman Brothers were large investment banks with major businesses dealing derivatives. In both cases, losses on mortgage-related investments began to cast doubts on the solvency of the banks. These suspicions led various sources of short-term financing to dry up, creating liquidity crises. Both banks' positions as derivatives dealers played vital roles in their liquidity crises, when derivative counterparties began to reassign contracts away from them and refused new transactions, which drained cash from the firms.

Before 2008, economists discussed bank runs using the archetypal example of the traditional commercial bank that takes deposits. The crisis forced economists to incorporate into their discussion other components of the financial system that are also susceptible to runs—notably money market funds, but extending as well to investment bank lines of business such as prime brokerage and derivative dealerships. Any reform of the derivatives market should here, too, be integrated with the larger reform of the financial system designed to protect against bank runs.

At the September 2009 Summit of the G20 Leaders in Pittsburgh, it was agreed that the OTC derivatives market should be reformed:

> *All standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties by end-2012 at the latest. OTC derivative contracts should be reported to trade repositories. Non-centrally cleared contracts should be subject to higher capital requirements.*

The reform has four main elements:

- Universal supervision. There can be no carve out for OTC derivatives that makes them exempt from supervision. Universal supervision represents a reversal of the explicitly deregulatory mandate of the United States' Commodity Futures Modernization Act of 2000.
- Transparency. All transactions must be reported to public data repositories.
- Exchange trading. Where possible, trading should move onto exchanges or comparable electronic platforms. Together with trade reporting this helps shine light onto the markets, for the benefit of the regulator as well as for competition and the wider public advantages that stem from transparency. Meanwhile, price transparency makes the market work better for all participates, while also giving regulators a crucial tool in examining systemic risk.
- Clearing. The mandate to clearing through central counterparties is designed to reduce the amount of credit risk accumulating in the system overall and also to locate credit risk where it is best supervised by regulatory authorities. Requiring capital for non-centrally cleared contracts is both a tool to encourage central clearing and a component of sound banking practice.

The principles defining the G20 Pittsburgh consensus on derivatives reform already governed the regulation of the U.S. futures markets. All trade in the futures and options markets had long been subject to regulatory oversight. Indeed, the existence of the unregulated OTC derivatives market is due to an exemption from the pre-established principle of universal supervision of all futures and options trading. The futures and options markets are mostly transparent, dominated by exchange trading, with data feeds easily accessed by the regulatory authorities and important data available to the public. As well, all contracts are cleared by a central counterparty. As a specific example, look at the oil futures market, which is the largest among the commodity derivative markets. It is registered with the U.S. Commodity Futures Trading Commission (CFTC), largely exchange traded, with rigorous reporting and publicly accessible data feeds, and entirely cleared.

So, the principles behind the reform are tried and true. Indeed, the customs and regulations embodying those principles evolved over more than a century. For example, the clearing mandate in the futures industry arose out of a debate that took place at the end of the 1800s and the first 3 decades of the 1900s. Central counterparty clearing was introduced to the U.S. in 1896 by the Minneapolis Grain Exchange, home to futures trading in grains. This innovation helped to reduce the aggregate amount of risk in the system and therefore lowered the amount of capital required to manage futures markets. This in turn lowered the cost charged to non-financial companies hedging with futures. Central counterparty clearing also improved access to the futures market, keeping the market competitive and growing. Established futures exchanges in other cities gradually recognized these advantages of central counterparty clearing and copied the innovation. As new futures exchanges were established, central counterparty clearing was often the chosen structure right from the start. This was the case at the Chicago Mercantile Exchange, established in 1919 for trade in butter, eggs, and other products. In 1925, the Chicago Board of Trade, which was the largest futures exchange at the time, switched to central counterparty clearing. From that date forward, central counterparty clearing reigned as the standard practice for futures trading in the U.S., and remained so for the next 50 years. Looking back, it is clear that the innovation of central counterparty clearing was a boon to the growth of U.S. futures markets throughout the 20th century.

The Progress of Reform

The United States has shown tremendous leadership in the reform of its derivative markets. Title VII of the Dodd-Frank Act provided the legislative authority to implement all of the Pittsburgh principles. The main responsibility for the implementing Dodd-Frank in this area falls to the Commodity Futures Trading Commission (CFTC), which is responsible for more than 90% of the U.S. derivatives marketplace. The Securities and Exchanges Commission (SEC) is responsible for the remainder, and some important elements of the reform also involve the banking supervisors as well as the Financial Stability Oversight Council.

The CFTC moved swiftly to write the regulations Congress tasked it with. The SEC has moved more slowly, but is also making progress. While the CFTC still has a few rules yet to complete, its focus is shifting to implementation of its rules, which includes consideration of revisions needed. Attention is shifting to see how change is showing itself in the marketplace, and to fine-tuning the regulations in response.

Swap dealers and major swap participants now register with the CFTC.[1] The agency's rules establish standards for business practices covering a wide range of issues. Not all of the work in this area is complete: some governance rules remain. But the principle of supervision is being implemented.

A large fraction of U.S. swaps are now centrally cleared. For interest rate swaps, which is the largest category, it is estimated that over 80% of the market is now cleared. Another large category is credit derivatives which have also begun central clearing. However, progress is limited in the remainder of the market. In aggregate, the portion of swaps that are cleared is about 75% according to CFTC Chairman Massad's recent testimony to the Senate Agriculture Committee.[2] This is a major accomplishment, and hopefully the CFTC will follow through on the other sectors of the market where clearing is appropriate.

Trading of swaps has also begun to be moved onto exchanges and electronic platforms—the so-called Swap Execution Facilities or SEFs. Some of this shift looks like little more than moving the old bilateral brokering from telephones onto new electronic communications systems. However, even that shift entails important improvements in transparency, oversight and competition. Still, the development of fully competitive exchange trading is only in its infancy in the swaps market.

Trade reporting is the area where progress looks the greatest on paper, but is most problematic in practice. In the U.S., all swap trades must be reported to a swap data repository or SDR. This is supposed to be a main tool for giving the regulators the insight about the market that was sorely missing in 2008. Although the statement that all trades must be reported is accurate, it disguises important deficiencies that should trouble this Committee and to which I will turn shortly.

Beyond the implementation of the G20 principles and the specific provisions of Title VII of Dodd-Frank, other changes are also required. Commissioner Sharon Bowen has spoken about the need for improving the culture in finance, and we are well served by the prominence she has given the issue.[3] While the country as a whole made a clear decision to reform the OTC derivatives market and to change the bad practices that had accumulated over so many years, many in the industry have not yet made that change.

Problems in Trade Reporting

The principle that all trades be reported is, on its face, the simplest reform. There was virtually no objection to writing this into the Dodd-Frank Act, and no disputes in principle in writing the regulations. Nevertheless, implementation has proven more difficult. It is equally difficult to assess progress in this area. One obstacle is that a simple reading of regulator reports on trade reporting does not give an accurate picture of the situation. For example, the Financial Stability Board (FSB)—an international body responsible for monitoring progress in implementing the derivatives reform—issued last week its Ninth Progress Report and wrote that[4]

> *At end-June 2015, the majority of FSB member jurisdictions (14) have trade reporting requirements in force covering over 90% of OTC derivatives transactions in their jurisdictions.*

That sounds good. Later, the same report turns to the problems in trade reporting and writes that:

> *Several authorities continue to note challenges in ensuring the efficacy of trade reporting.16 These have been discussed in some detail in prior progress reports, and include:*
>
> - *difficulties with TR data quality, such as the accuracy of information being received and processed by TRs, particularly associated with the absence of Unique Transaction Identifiers (UTI) and Unique Product Identifiers (UPI);*
> - *challenges in aggregating data across TRs (both domestically and cross-border);*

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[1] The CFTC's list of registered dealers is here: *http://www.cftc.gov/LawRegulation/DoddFrankAct/registerswapdealer*. It's list of registered major swap participants is here: *http://www.cftc.gov/LawRegulation/DoddFrankAct/registermajorswappart*.

[2] Testimony of Chairman Timothy G. Massad before the U.S. Senate Committee on Agriculture, Nutrition, and Forestry, Washington, D.C., May 14, 2015. *http://www.cftc.gov/PressRoom/SpeechesTestimony/opamassad-22*.

[3] Commissioner Bowen Speech before the Managed Funds Association, 2015 Compliance Conference, May 5, 2015. *http://www.cftc.gov/PressRoom/SpeechesTestimony/opabowen-4*.

[4] Financial Stability Board, *OTC Derivatives Market Reforms, Ninth Progress Report on Implementation,* 24 July 2015. *http://www.financialstabilityboard.org/2014/11/fsb-publishes-progress-report-on-implementation-of-otc-derivatives-market-reforms/*.

- *the existence in some circumstances of legal barriers to reporting complete data into a TR ("input barriers") (**e.g.,** counterparty identity or other identifying data); and*
- *legal barriers to authorities' access to TR-held data ("output barriers").*

This language is far too anodyne to convey to outsiders the true state of the problem. What, for example, is really meant by "difficulties with TR data quality" and "the accuracy of information being received"?

What they mean is that a lot of the data is simply gobbledygook. Former CFTC Commissioner Scott O'Malia called attention to this a couple of years ago when he recounted the difficulty regulators had in making use of the data feeds coming from the U.S. trade repository, the Depository Trust & Clearing Corporation (DTCC). He said, "The problem is so bad that staff have indicated that they currently cannot find [JP Morgan's now famous] London Whale in the current data files."

Unfortunately, not all assessments are as blunt about the problems. In his recent testimony to the Senate Agriculture Committee, Chairman Massad proudly cited the *Weekly Swaps Report* as evidence of the good progress being made, saying: [5]

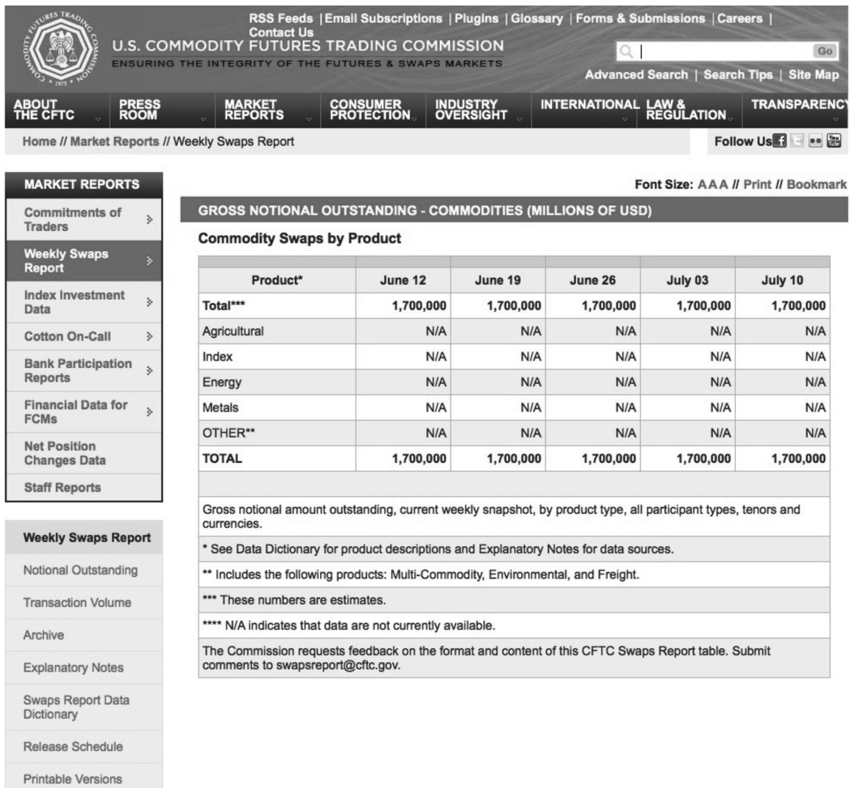
> *You can now go to public websites and see the price and volume for individual swap transactions. And the CFTC publishes the **Weekly Swaps Report** that gives the public a snapshot of the swaps market.*

I found that an odd citation because my experience with that report is that it is evidence for the problems as much as for the progress.

What quality of information do you really get from the CFTC's *Weekly Swaps Report?* Printed below is a screenshot I took earlier this week of some of the data in that Report.[6]

[5] Testimony of Chairman Timothy G. Massad before the U.S. Senate Committee on Agriculture, Nutrition, and Forestry, Washington, D.C., May 14, 2015. *http://www.cftc.gov/PressRoom/SpeechesTestimony/opamassad-22.*

[6] *http://www.cftc.gov/MarketReports/SwapsReports/L2CommGrossExp.*



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GROSS NOTIONAL OUTSTANDING - COMMODITIES (MILLIONS OF USD)

Commodity Swaps by Product

Product*	June 12	June 19	June 26	July 03	July 10
Total***	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000
Agricultural	N/A	N/A	N/A	N/A	N/A
Index	N/A	N/A	N/A	N/A	N/A
Energy	N/A	N/A	N/A	N/A	N/A
Metals	N/A	N/A	N/A	N/A	N/A
OTHER**	N/A	N/A	N/A	N/A	N/A
TOTAL	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000

Gross notional amount outstanding, current weekly snapshot, by product type, all participant types, tenors and currencies.

* See Data Dictionary for product descriptions and Explanatory Notes for data sources.

** Includes the following products: Multi-Commodity, Environmental, and Freight.

*** These numbers are estimates.

**** N/A indicates that data are not currently available.

The Commission requests feedback on the format and content of this CFTC Swaps Report table. Submit comments to swapsreport@cftc.gov.

The table shows the Gross Notional Outstanding of swaps on Commodities measured in Millions of U.S. Dollars. Gross Notional Outstanding is a common measure of the total size of segments of the swaps market. The table shows a Total amount for each of the most recent weeks, June 12 through July 10. The total shown is 1,700,000, which is $1.7 trillion. Below that total, there is a breakdown by category of commodity swaps, including Agriculture, Index, Energy, Metals and Other, but each of there is no number for any items in this breakdown. Instead, the entry is "N/A" which the footnote says "indicates that data are not currently available."

The footnote above that explains that the total figures "are estimates." Notice that the total value recorded in each week is the same $1.7 trillion. Actually, if we go back to the very first of these weekly reports which was posted in November 2013, we see that the total value of commodity derivatives reported even then was also exactly $1.7 trillion. It has been the exact same figure for 92 weeks in a row. No matter how the volume of other derivatives goes up and down, the estimate for the commodity derivatives outstanding remains constant.

That's not an estimate. It's a plug. It would be more honest to report "N/A", not available. Back in November 2013, when I first read the $1.7 trillion figure and the accompanying footnote, I imagined that the estimate had a foundation. Now, after having seen it stay constant for so long, I know that it can't have any reasonable foundation. Why pretend? Let's be honest with the American people and say that we still don't know, and we're working on it. Claiming to have a number when we don't provides an illusion that we are farther along on the reform than we really are.

Not all of the data being reported is as worthless as this item. There is real information in those reports that regulators now have that they did not have before the reform. The problem is that there is so much junk mixed in with the good stuff.

Why are there so many data problems? There are a number of reasons and excuses. It was always going to be difficult to take an industry that had evolved over decades without any oversight and reshape it to provide meaningful reports accessible to regulators and the public. Broad mandates like the call for transparency issued at the G20 Pittsburgh meeting are simply stated, but implementation is a challenge. The staff at the CFTC have been working hard to write and rewrite their regulations to fit the particular structures of the swaps market. The CFTC is cooperating with the Office of Financial Research on an important project to improve data definitions and data structures to make the reporting meaningful and useful.

But the problem is not just a technical and rulemaking challenge. It is also an enforcement challenge. Sometimes what companies report is just a Swiss cheese of information, riddled with missing data fields. And often the missing information is clearly standard stuff that no trader has an excuse to leave out. I wrote last year about a problem with reporting in electricity swaps on ICE's data repository, Trade Vault, quoting from a critique provided to the CFTC.[7] As a rule, we have been very indulgent of this poor behavior, and the implementation of quality reporting has therefore lagged.

It is worthwhile to note that the U.S. futures and options markets do not have any of the same problems with trade reporting. The swaps industry is fond of making a distinction between swaps and futures—every swap is its own special snowflake, and this is what makes implementing the trade reporting and other mandates so difficult. While there is some truth to this distinction for a small volume of swaps, for the vast majority it is nonsense. For example, large portions of the interest rate swap market are economically the same as futures, and trade reporting should be no more difficult for these than for futures. The industry, therefore, needs to share responsibility for organizing itself to structure its trades and trading in a fashion that is transparent and monitorable. Otherwise, it represents and ongoing threat to the financial stability of the country.

Conclusion

In the 5 years that have passed since passage of the Dodd-Frank Act, much progress has been made. Regulators have begun to gain oversight of the market, credit risk has declined substantially and the framework for transparent and competitive trading is in place. Implementation has only recently begun, and progress has been uneven and marked with important problems. Therefore, much work remains. Some of this is work for the regulators, but much of it is work for the swaps industry. Leadership from the industry is required to shape the swaps market so that it is a vital and vibrant source of financial strength and stability to the U.S. economy.

The CHAIRMAN. I thank the gentleman. The chair would remind Members that they will recognized for questioning in the order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in the order of arrival. I appreciate Members's understanding of that, and I will recognize myself for 5 minutes. And, again, I want to thank our witnesses for being here today.

Mr. O'Malia, February 2015 the G20 finance managers and the central bank governors reaffirmed the importance of cross-border cooperation in overcoming global regulatory fragmentation. In your opinion, does CFTC's current cross-border guidance help or hinder efforts to reach that goal, and how?

Mr. O'MALIA. Thank you, Mr. Chairman. Obviously, as all the witnesses have indicated, a lot of work has been done and achieved by the CFTC to implement these rules. All the rules are—we have reporting, exchange trading, and clearing, and we are quickly moving on to the OTC margining. With regard to the international harmonization, Europe and some jurisdictions in Asia are following along, and they are making headway, but we have significant progress, as all the witnesses here have testified, in terms of the cross-border application.

The CFTC, in my opinion, has overreached in their application of the cross-border rule and taken the statute well beyond its logical meaning. The statute, in 2(i), provides for a limitation on the

[7] *http://bettingthebusiness.com/2014/02/11/never-give-information-to-the-enemy/.*

CFTC's authority to extend its territorial reach to those activities that have a direct and significant impact on the U.S. economy. That test has never been validated or used, and the CFTC has instead applied a location test to these things.

One of the best ways to figure out if it is having an impact or not, and if we have harmonization, is if you look at the trading activity. And since the implementation of the trade execution requirements of the United States, and the combination of the cross-border application, you have seen a bifurcated market between the U.S. rates market and the European markets in Sterling and Euros. And it is an indication that people are avoiding trading with U.S. participants, and we are beginning to develop fractured markets.

If we don't recognize CCPs, for example, we will have fractured markets. If we do not harmonize our OTC margin requirements, we will see fractured markets. This makes it much more difficult to manage risk on a global basis, as these are global markets, and it frustrates end-users who try to access liquidity in the various markets as well.

So, to your specific question, have they done enough, have they overreached? Yes, they have overreached. No, they have not done enough to embody the words they put in the cross-border guidance to say that there is a a compliance regime, because it has not yet occurred.

The CHAIRMAN. Thank you. Mr. Edmonds, you call for replacing overly prescriptive Dodd-Frank rules that do not account for technological advances or constrain competition with flexible regulatory principles. Could you give us some specific examples of that?

Mr. EDMONDS. Well, Mr. O'Malia just made reference to some. We have the principles that were laid out by the G20. Those principles, and the goals that we were attempting to achieve with the legislation that was passed, all go in the right direction. And in Mr. Duffy's testimony, he laid out the idea that when you look at these rules, and how they are applied, it is the application of that prescription, and there is no way to achieve a harmony between those two.

Put the regulators in a box, and when you have one group that is so far ahead, or one regulator that is so far ahead in the implementation phase, and you have others who are trying to catch up, if you look at the totality of those rules, and you look at those who followed us, if you will, and the implementation of financial reform, everyone has to have their little stamp. When you start with a very prescriptive rule base, and that next stamp comes along, the totality of all of those rules put together put us in the position that we are today, where people are looking for certainty around that.

If you look at the history of the CFTC, it was a principles-based organization, and you had a lot of control around adhering to those principles. Now those principles aren't the rule, it is step and rule that you are going to follow, and it gives you very little opportunity to span across multiple jurisdictions, even in this country, between things that are in Title VII, between the SEC and the CFTC. You can't co-exist because as soon as you turn right in one, you are upsetting a regulator on the other side, and it puts you in a very compromised position.

The CHAIRMAN. In the time left, did any of the other witnesses care to comment on CFTC's guidance? Dr. Parsons?

Dr. PARSONS. Well, I would just say that Chairman Massad has outlined a pretty clear set of principles for how to do this, and part of what he is looking to do is look back to the past. We have had derivatives exchanges operating, and clearing houses operating, for many years where we have been able to have business operate across boundaries, even under the older regime for futures and options markets. And that, in principle, should not be an obstacle, going forward. I think that is a kind of policy that will be viable in negotiations, going forward.

Mr. O'MALIA. Mr. Chairman, if I may, what Dr. Parsons could be referring to is the very workable solutions we have had in the CFTC rules under Part 30, recognizing foreign regulatory regimes. That has worked, and it has worked for years. What we are finding ourselves in is an inability to go back to that workable regime, and to recognize foreign jurisdictions, and that is a real frustration. So we have the template, as you have correctly pointed out. It is the Part 30 rules, recognizing foreign DCOs. But that is not what is happening today.

The CHAIRMAN. I thank the gentleman. The Ranking Member, 5 minutes.

Mr. PETERSON. Thank you, Mr. Chairman. Mr. Duffy, this end-user thing, you say that they are paying up to five times as much to clear trades, and the ag products are two times more expensive than credit default swaps. Can you explain to me why the ag products are more expensive than credit default swaps? Because, the credit default swaps are much more risky than ag products. How is that possible?

Mr. DUFFY. Well, they are much more risky, but, because of the way some of the rules are written, they fall outside of the scope of the law, so——

Mr. PETERSON. Now, who wrote those rules?

Mr. DUFFY. The CFTC wrote those rules.

Mr. PETERSON. But in Title VII we told them that they were not to put this on end-users. What is going on?

Mr. DUFFY. Well, again, we are saying that, potentially, credit default swaps can be cheaper, with a higher risk profile than agricultural futures, just the way the margin is structured today. And we don't believe it makes any sense whatsoever because of some of the loopholes that are potentially in this rule.

Mr. PETERSON. But, as I understand it, these requirements are being put on by the banks, by the FDIC, not by CFTC, and I——

Mr. DUFFY. Yes.

Mr. PETERSON.—as I understand it, CFTC doesn't necessarily agree with this.

Mr. DUFFY. When I mentioned earlier about the leverage ratio issue, where the banks have to account for so much margin, where they can't even have access to that margin, so in return the credit default swaps would be cheaper because they have to account for the ag products, not for the credit default swaps.

Mr. PETERSON. Right. But that is being done by the Prudential Regulators. It is not being done by the CFTC, right?

Mr. DUFFY. Right. I am sorry, you are correct.

Mr. PETERSON. Yes. So my question is, what I have been asking for the last 6 months, is why doesn't this get fixed? This is not our jurisdiction. This is another Committee's jurisdiction. We have known about this for some time. Why doesn't anybody fix this, other than just complain about it?

Mr. DUFFY. We have worked with the Administration, the Federal Reserve, and others, and the Basel Committee, to make certain that this leverage ratio issue gets resolved so we don't put ourselves into a situation where higher risk products are actually cheaper than agricultural commodities.

Mr. PETERSON. So how is this getting resolved? Can somebody explain this to me?

Mr. DUFFY. Well, as we start to walk through it with the regulators, and show them that the margin on deposit should not count against the balance sheet, people are starting to realize that this is not, but it is also multiple countries that have this. The United States has agreed with the Basel Committee on this. So we are not only dealing with the U.S., we are dealing with multiple other jurisdictions.

Mr. PETERSON. So does this require legislation, or can this be fixed with——

Mr. DUFFY. This can be fixed at the Basel Committee and the Federal Reserve.

Mr. PETERSON. Yes. So they are working on it?

Mr. DUFFY. We are very hopeful that they will give the relief on the margin issue not to be counted——

Mr. PETERSON. I hope so too, because it has been dragging on too long.

Mr. DUFFY. I agree.

Mr. PETERSON. On the issue of the EU holding up an equivalence determination over initial margin, can you describe the difference between the EU and the U.S. on initial margin?

Mr. DUFFY. Sure. On the client side in the United States it is 1 day gross margin, and on the house side it is 1 day net margin. In the EU it is 2 day net for both house and client. The difference is that Chairman Massad has shown that 1 day gross has about $38 billion when collecting in the clearing house. So our margin regime, even though it is 1 day gross *versus* 2 day net, is much higher. So we had to convince them and show them of that.

They have still not deemed us equivalent in the European Union yet because it has become a competitive issue, where people are trying to race to the lowest bottom of margin. It is critically important, from a risk management standpoint, to have the appropriate margin in place. That is why our government, our regulators, saw 1 day gross as an appropriate weight for the client business. The client business is about 60 percent, the house business is about 30 to 40 percent, somewhere in that neighborhood. So this is a big issue.

So what they want us to do is to go to 2 days on our house business, and what they will do is say, "We will give our clients in the EU the optionality to elect either 1 day gross or 2 day net." Well, we all know what they are going to elect, which is 2 day net, because it is $38 billion cheaper than 1 day gross.

Mr. PETERSON. So——

Mr. DUFFY. There are imbalances right there.

Mr. PETERSON. Is this a legitimate issue, or is this a——

Mr. DUFFY. This is——

Mr. PETERSON. Or is this something that they are doing to get business.

Mr. DUFFY. This is an issue——

Mr. PETERSON. The European Union.

Mr. DUFFY. There is no question about it, this is a competitive issue.

Mr. PETERSON. So does blaming the European Parliament, which never can get anything done. That is not necessarily the real problem here.

Mr. DUFFY. Well, the problem is we need to be recognized in the European Union. You cannot recognize countries such as Singapore, Honk Kong, India like that, and not recognize the United States of America. I have said to this Committee many times before, this is the biggest slap in the face to the United States of America by not being recognized in the European Union. In my testimony I also said how business is being taken out of the United States and brought over to Europe because of these rules.

Mr. PETERSON. So how does Chairman Massad—hasn't he been on the ball on this, and——

Mr. DUFFY. Chairman Massad has done an outstanding job. He is dealing with a very difficult, to your point earlier, Parliament over in Europe right now. I think we are getting closer, but Mr. O'Malia said something very important about Part 30. Chairman Massad also has something he can use, which he could start pulling the foreign border trade designations for other clearing houses that want to do business in the United States if they will not deem us equivalent, which is exactly what should happen.

Mr. PETERSON. All right. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman yields back. Mr. Gibbs, 5 minutes.

Mr. GIBBS. Thank you, Mr. Chairman. The first two witnesses especially, I have heard a lot about lack of coordination, global framework hasn't been implemented, fragmentation. And I guess my question is: I am an end-user, I have been. For the end-user, it is price discovery, price transparency, has it been enhanced, or has it been reduced because of the implementation of Dodd-Frank? And then part of that question is too, have U.S. firms been put at a competitive disadvantage with the implementation of Dodd-Frank?

So I guess the overall theme I am hearing is that this hasn't come together like it should. I know that Mr. O'Malia's testimony talks about the Basel Committee on Banking Supervision, and International Organization of Securities Commission September 2013 final national rules still haven't been published. That is almost 2 years. So is it because the Dodd-Frank is too restrictive, and have we put ourselves at a disadvantage compared to our foreign counterparts? And then, second, how has this had an impact on our end-users for price discovery, price transparency? Anybody to the right—first two, probably.

Mr. O'MALIA. Thank you for the question. Without a doubt Dodd-Frank has increased transparency, right? Talking about the basic data collection and oversight of the U.S., the work is improving. It is still a long way to go, as Dr. Parsons pointed out. Trade execution is coming online. It too could be better, and right now it is overly restrictive, and ISDA has suggested ways to improve the flexibility for end-users and participants in the market to access trading a much easier fashion, with more flexibility.

I fear that as we merge and move towards clearing and trading with the Europeans, we are going to see the same results in trading as we have in clearing because of the points made here, that they are overly prescriptive, and we are not going to be able to find a broad——

Mr. GIBBS. You mean that Dodd-Frank is overly——

Mr. O'MALIA. Dodd-Frank is overly——

Mr. GIBBS. Okay.

Mr. O'MALIA.—prescriptive in trading. Have the costs increased, or have end-users been put at a disadvantage? I think the point that was made on the leverage ratio is precisely the point. A lot of these capital rules are beginning to come into play. We do not have a clear picture as to the individual costs of these rules, and the cumulative cost of the rules. And they are beginning to fall into place over the next 3 to 5 years, and they are going to have massive increases on the banks which will make a difference on how they provide risk and liquidity to these markets.

It is a changing factor, without a doubt. It is part of the outcome of the financial reform, but end-users are going to have a different price to pay to access these markets, and to access liquidity. Congress can really play a role in doing some oversight over the capital rules. This is not something that CFTC directly has responsibility of, but it is an outcome of the comprehensive Dodd-Frank reform. And you should ask for the individual and quantitative costs of these capital rules. The leverage ratio is a final rule, and we need to go back and fix it. Inquiring with the Basel Committee and the Prudential Regulators here about the status of that would be an appropriate oversight role for Congress.

Mr. GIBBS. Mr. Duffy, would you care to comment on how you see it affecting the CME?

Mr. DUFFY. Well, I stated it earlier, but Mr. O'Malia said it correctly, this whole leverage ratio rule is an extremely burdensome rule that is going to hurt the end-users. As I said earlier, and I maybe didn't answer the Ranking Member's question as well as I should have, but because of the historical nature of agricultural products, that is one of the reasons why they are deemed to be higher risk than credit default swaps. It makes no sense whatsoever for that to happen.

And that is the reason why what Mr. O'Malia said is true, we need to go back and re-visit this rule, especially on the leverage rule, because this money that is placed in the margin cannot be touched by a matter of law, so it should not count against the balance sheet and make other products more expensive for people that are using the markets.

Mr. GIBBS. So this is a legislative fix, or can CFTC, in the rule——

Mr. DUFFY. This is a Basel/Federal Reserve fix, in my opinion.

Mr. GIBBS. Federal Reserve?

Mr. DUFFY. I believe they have the ability to do so.

Mr. GIBBS. Okay. All right. Thank you. I yield back.

The CHAIRMAN. The gentleman yields back. Ms. Kuster, 5 minutes.

Ms. KUSTER. Thank you, Mr. Chairman. Thank you to our panel for being with us. So my takeaway is that, 5 years in with Dodd-Frank, we are more transparent, more resilient, and we have minimized systemic risk caused by speculative derivative activity, but I also understand that we have further to go. The job is not complete, and you have talked today about some issues with regard to the international markets.

My question is a little bit different. I have a concern, based upon a decision that was made by the majority in the Congress, about the CFTC re-authorization that recently passed, and my understanding is that this is going to woefully under-fund the CFTC, going forward, with the task that you have laid out. The funding level will limit the agency's ability to effectively implement the requirements of the law, and, including this cross-border derivatives that you have talked about today.

So I would like to ask if the panel could speak to the effect that the current CFTC funding levels will have on the agency, and in particular the ability to collect and implement data that will be needed to effectively regulate the market. And if we could start with Dr. Parsons?

Dr. PARSONS. Yes. Well, the most important thing is just to appreciate how big the task is. So they have been tasked with a much, much larger market than they had ever had before, and it is a market that is only newly being regulated. So all of these issues in data reporting are issues where people are trying to grapple for the first time with how to organize this swapped data in a sensible fashion. That is an enormous task.

I would emphasize that on top of the data reporting and the swaps exchanges, you have ongoing developments in technology. Now that we have electronic trading, we have seen the difficulties in electronic trading in a number of realms, and it certainly is impacting the futures and options market, and will impact the swap execution facilities. It is an enormous task for a regulator to have the technical capability to cope with the volume of data at hand. And then cybersecurity is another new challenge on top of trying to cope with and bring the swaps market into regulation. So I just think the burdens are very, very big, and need to be appreciated.

Ms. KUSTER. Do you have a concern about the level of funding, given this fragmentation, and what we need to try to accomplish to make this work better at an international level?

Dr. PARSONS. I do. I am not personally that involved in the details of the budget, but I know, for example, the $1.7 trillion figure that I was quoting to you, which is commodity markets, everybody likes to say at the beginning of their speeches, it is the municipal utility, it is the farmer, the rancher, it is the airline company. Those are the $1.7 trillion that we don't have any good data on.

Ms. KUSTER. Yes.

Dr. PARSONS. But it is the interest rate swaps, and the credit default swaps which have been reported to you here are the ones where significant progress is being made, despite the preamble in the speeches. People think of those markets as small, and they know that their resources are very limited, so those commodity derivative markets are being overlooked because of limited resources.

Ms. KUSTER. So I just have 1 minute left. Anyone else on the panel have any comment on the funding? Sure, Mr. O'Malia.

Mr. O'MALIA. It is a great question, thank you, and the 4½ years I spent as a Commissioner at the CFTC, we always focused on the budget and the needs. Right here you have three technology companies, and technology is where these markets are heading, and the ability to oversee these markets are based in technology. And I couldn't agree more with Dr. Parsons's analysis, that we really ought to focus and solve the data issues immediately.

The technology budget, however, has always come second to every other priority at the Commission, and it has suffered from a lack of kind of long term planning——

Ms. KUSTER. Yes.

Mr. O'MALIA.—because it just hasn't articulated a very consistent direction for the Commission, and it could be done in a much more cohesive fashion and specific fashion. Each year Congress presents a budget. Each year it is slightly different, or the Administration presents a budget to the Congress, and the priorities kind of bang around with new things. Sometimes it has been DSIO, sometimes it has been enforcement, and it has really lacked kind of a cohesion and vision that is necessary to really implement a strategic planning around technology, which is the only way that the Commission is going to be able to keep up with automated markets and these broad global markets.

Ms. KUSTER. Mr. Duffy, I am sorry, you will have to ask the chair for his indulgence. My time is up. Thank you.

Mr. DUFFY. Real quick, what is important to note here, Congresswoman, is that when people are asking for additional funding because of the Dodd-Frank Act, or are they under-funded, they use the notional figure of swaps that they are going to have to now regulate. The number back in 2000 and 2001, $761 trillion. That is on top of the $1.7 trillion that the Professor referred to as agriculture. The rest is about $700 trillion. Of those $700 trillion, there are 2,000 to 3,000 transactions a day.

In the world of listed derivative futures, between the Intercontinental Exchange and CME Group, we are talking about 20 million transactions a day, with a notional value of over a quadrillion dollars a year. And we functioned flawlessly for years under the same amount of budget. So you cannot measure your budget of an agency by the notional value of the trades that you are doing. So I appreciate that the CFTC is probably under-funded to some extent, but also you can't base it on a notional value of trade. You have to base it on the amount of transactions, because there is no difference, and they are notional.

The CHAIRMAN. The gentlelady's time has expired. Mr. Scott, for 5 minutes.

Mr. AUSTIN SCOTT of Georgia. Thank you, Mr. Chairman, and forgive me, I am having a few flashbacks to when I was a small business owner, and had licenses in multiple states, and the Federal Government, and sometimes the rules were in direct conflict with each other, and it made it absolutely impossible to comply with all of them. As we go through the next several months on this, and try to resolve these issues, I am looking forward to creating not only the transparency, but the consistency that we need to move forward. I have a couple of questions.

Mr. Edmonds, in recent months the market events, the new research, the studies, and the current and former regulators have raised concerns about a deterioration in market liquidity, and the cumulative impact of the various new prudential and market regulations, and whether or not that is a contributing factor. Do you share these concerns, and the cumulative impact of the prudential and market regulations, is this causing the reduction in liquidity, and what is the price of the impact of that on people who are trying to hedge their risk?

Mr. EDMONDS. I think in a lot of ways—and thank you for the question. I think in a lot of ways it is the uncertainty that the activity around those items are introducing into the market. Let us talk about liquidity in the form of what it takes. And my friend, Mr. Thompson, will know a lot about this in his role. We think about how collateral works within the system. One of the goals of Dodd-Frank at the end of the day was we were going to better collateralize the risk that the economy faced.

And that was all criticism when we came out of 2008. Yet we now have rules in place, a lot of because of what is going on in Basel that Mr. Duffy and Mr. O'Malia has spoken to today, that don't seem to be consistent with that. In a time of stress, a U.S. Treasury instrument, historically, goes up in value, because it is a flight to quality. Our international regulators have deemed U.S. Treasuries as a liquid instrument, but we haven't.

So what is that cost at the of the end of the day introducing into the system, where a small business person, like yourself in your previous life, would sit here, and you would walk in, and you would say, "I am going to do something to protect my business. I am going to take a very safe instrument, the U.S. Treasury, and I am going to introduce that as collateral into a clearing house, run by any one of us who are under the CFTC rule." And someone says, "Yes, but that is not good enough." That is a problem.

That is an uncertainty that we have in the system today that, because of what I defined in my testimony as prescriptive rules, we are trying to work our way through. It has a massive impact on the constituents of Mr. O'Malia in his role.

Mr. AUSTIN SCOTT of Georgia. Yes.

Mr. EDMONDS. So let us take that another place that—there is a call for an expanded list of collateral. The Europeans, in some cases, in the most recent legislation, they have eliminated the uses of letters of credit. There has been some thought here in the United States that we should not use letters of credit as acceptable forms of collateral. Whether we do or we don't, we just can't have a difference in rules, or we have to at least know what we are taking in the form of collateral.

So as a small business user at that moment in time, you have to think very quickly if you are going to use these markets to protect the risk that you have on your books, and to make your ability to earn a living safer. How do you answer that question? I don't know that any of us can give you a declarative answer on that. We are stunned by some of it in the same way.

Mr. DUFFY. What is really fascinating, and what he is bringing up right now, is other clearing houses around the world will take U.S. Treasuries as good collateral, where our own government won't take them as good collateral.

Mr. AUSTIN SCOTT of Georgia. Dr. Parsons, how dire do you believe that the need for standardization of the form and format of swap data being collected is?

Dr. PARSONS. Well, it will be better if it gets standardized. We do want information to be crossing boundaries, but we need to understand that we don't even have good information inside our own island, let alone cross-border comparisons.

Mr. AUSTIN SCOTT of Georgia. Mr. Thompson, I have 30 seconds left, but could you provide an example of just how different the various reporting requirements can be in different jurisdictions?

Mr. THOMPSON. Sure, Representative Scott. In Europe you have two-sided reporting, and here in the U.S. you have one-sided reporting. That is just one. You also have different definitions as to what needs to be reported. Now, I used a very simple example. You have a definition now of what is a *date*. And, of course, you can write a date in Europe a number of different ways. You can start with the date, you can start with the month. There is no clear definition there.

If you are just using those as simple examples, you will get very different data information, and you will get breaks in the data, depending on which way the reporting party enters that data into it from the two-sided view that you are going to have.

Mr. AUSTIN SCOTT of Georgia. Thank you. And, gentlemen, thank you for being here.

The CHAIRMAN. The gentleman's time has expired. Ms. Adams, for 5 minutes.

Ms. ADAMS. Thank you, Mr. Chairman. Thank you, Ranking Member Peterson, and thank you gentlemen for your testimony. My district has more than 37,000 financial service employees, along with a host of end-users, many of which are directly impacted by Dodd-Frank. This law was a much needed conduit in bringing our nation's financial markets under greater, more supervised regulations. And while banks and non-banking firms play an important and necessary role in our economy, it is imperative that we have mechanisms to provide the checks and balances.

And having said that, Dr. Parsons, if Dodd-Frank had been passed prior to the financial crisis of 2008, what do you think might have played out differently?

Dr. PARSONS. Well, Dodd-Frank is a big law. Let me focus just on the derivatives piece. One of the most shocking experiences in the crisis was the experience with the insurance company AIG, and the credit default swaps it had sold. That accumulation of non-margined risk was a huge problem, which Dodd-Frank no longer makes possible.

But it was also a problem because the regulators were suddenly confronted with this big issue, and did not have information about the larger market, and AIG's place in it, to give them the ability to respond sensibly. So, like in other situations during the crisis, the regulators and the government authorities were presented with a disaster that needed resolution now, and foreclosed sensible solutions.

So the Dodd-Frank Act, in providing information and supervision, gives regulators and committees such as yours more ability to take control and respond to the situations in a sensible fashion.

Ms. ADAMS. Thank you, sir. Moving more specifically to the expanded role of CFTC oversight, particularly with regards to the swaps derivative market, Mr. O'Malia, what is your assessment of the handling of the swaps market, and what resources can Congress provide to help CFTC provide better oversight of this market?

Mr. O'MALIA. Thank you. We have recommended in our testimony, and my testimony, that the regulators engage with the industry to quickly adopt industry convention standards around data reporting. I think many of the firms at the table can provide solutions around specific data sets, and use, and symbology and terminology, and taxonomy is probably the appropriate term, but to utilize those that are already in the market today to get a globally consistent standard for data reporting. This could help move the needle quite fast, in terms of global standards.

We need endorsement from the regulators. Right now we don't know what the pathway is. We are ready to respond as called, but we think that, by having a seat at the table and engaging with the regulators, we can provide a very useful data set very quickly that have rapid uptake, because we will be more familiar with an industry standard that a separately developed standard. And, working through IOSCO and CPMI would be the appropriate venue further. These are the international coordinating bodies.

Ms. ADAMS. Thank you. Mr. O'Malia, how have costs for end-users of swaps, including small banks that use swaps to hedge interest rate risk changed as new requirements for swap transactions have come into effect?

Mr. O'MALIA. Well, the adjustments are subtle, but beginning to manifest themselves, and we are beginning to see some real significant changes. Many of the capital rules have not yet been put in place, and we are just now discovering kind of the cumulative impact these capital rules have. As Mr. Duffy talked about, the leverage ratio rule is very problematic, as it poorly characterizes the protection that SEC provides, and treats it as leverage, and that is inappropriate.

We are ready to talk and do the analysis around data to support the review that regulators can do, and to get into the data, and try to understand the ramifications of the increase in cost associated with the capital charges.

Ms. ADAMS. Thank you very much.

The CHAIRMAN. The gentlelady's yields back. Mr. Davis, 5 minutes.

Mr. DAVIS. Mr. Chairman, thank you, and thank you to the witnesses. The problem with going so late in the hearing is that the questions I initially had on clearing, and reporting, and others have really been asked. And I don't like to be redundant, and I do want to comment on my friend Mr. Duffy. I am glad you are here again, Terry. I joked with you earlier we are going to name that end of the witness table the Terry Duffy wing.

But it does show your willingness to talk about issues that are very important, and very intricate issues for many of us, as policymakers, to have to try and address. So all of your willingness to be here, even on a regular basis, is very helpful, and it shows the desire for more transparency within the swaps markets, within the issues, the derivatives that all of you are addressing today.

So let me focus instead today on some coordination issues. And I want to ask Mr. Duffy, Commissioner Giancarlo recently criticized the FSOC as an unmitigated disaster at its role at implementing hundreds of new rules and regulations mandated under Dodd-Frank. Do you share Commissioner Giancarlo's views on the work of FSOC, and if FSOC's not prepared to coordinate U.S. financial rulemakings, is there another body that should do so?

Mr. DUFFY. I don't know if I will say it is an unmitigated disaster. I will say that there are always issues when it comes to these type of things, Congressman. I am not quite sure that when the Commissioner's referring to all the different rules, if he has problems with certain ones, or he is just characterizing the whole thing as a disaster, is there another body that could be more helpful in doing this? I am not so certain that is true or not true. You would have to see what that body is, and I would not be the expert to say where it should go. So maybe somebody else on the panel could better answer that question for you.

Mr. DAVIS. Mr. O'Malia?

Mr. O'MALIA. FSOC could serve the public better if it was more transparent, and it had a more diversified participant base. As you may know, it is only the Chairmen of the various Commissions. It could probably be broadened. The CFTC, the SEC are a balanced Commission of three to two in favor of the President's party, and those work very well. They bring bipartisan solutions. I think the FSOC could benefit by that, and additional transparency.

We are obviously coordinating important rules that have gone through some APA reviews, and those are the appropriate steps, cost-benefit analysis, APA, notice and comment are essential to making good rules, and FSOC could benefit by pulling that page out of the playbook.

Mr. DAVIS. I see. Anybody else on the panel want to address this issues?

Mr. EDMONDS. I am going to echo Mr. O'Malia's comments about the transparency. Mr. Thompson, myself, Mr. Duffy, we all have organizations that have been deemed systemically important until Title VIII of Dodd-Frank. That designation in and of itself puts you right square in the FSOC world. I don't know that any of us can tell you exactly what that means at any moment in time on any given issue.

For us to better educate, impact that process for the betterment of the community as a whole is very difficult at the end of the day. That is not saying they are not doing very important, very hard work, but I couldn't tell you that the level of communication is something that you would find consistently acceptable.

Mr. DAVIS. Thank you. Mr. Thompson?

Mr. THOMPSON. Yes. I would say FSOC is a relatively young organization, and like other parts of Dodd-Frank that we have spoken about, it is probably a work in progress that can only get better. We at DTCC, well before we were designated as systemically important, knew our importance to the U.S. economy, and to the global economy. So we always viewed ourselves as systemically important, took that very seriously, as I am sure the other organizations did too, in terms of our risk management and resiliency efforts.

So we try to work very hard with the FSOC. Again, as I said, I think very much so it is a work in progress that needs to be continued.

Mr. DAVIS. Great. Dr. Parsons, I have about 30 seconds.

Dr. PARSONS. Yes. I would just like to give you one quick example. Securities and Exchange Commission found it very difficult to confront the systemic risk in mutual funds—money market funds, excuse me, and the FSOC gave them a kick in the pants, and that was very helpful, and we should appreciate that kind of thing.

Mr. DAVIS. Great. You did it in 20. Thank you. Thanks to the witnesses. I yield back.

The CHAIRMAN. The gentleman yields back. Mr. Abraham, for 5 minutes.

Mr. ABRAHAM. Thank you, Mr. Chairman, and thanks for the witnesses for being here. It has been, for me, very informative. I will address my first question to Mr. Duffy, and any of the panel can surely weigh in. I have heard that certain countries allow U.S. Treasuries for collateral, we don't. I have learned that some countries base security on 1 day's net compared to 2 days' gross. It seems like the rules are just all over the place. I don't see how anybody plays in this arena.

So take me back up to the 30,000′ view, so to speak. Why haven't countries in the G20 conformed to a common data standard? Is it a money issue? Some people have an advantage if they don't conform? Is it a technology issue, or is it just an attitude issue that, "Hey, we are not going to play because we don't have to play." Why doesn't everybody conform to these rules?

Mr. DUFFY. You would think in a global market that people would conform.

Mr. ABRAHAM. I do. I would.

Mr. DUFFY. And when we are talking about margin collections, there should never be a race to the bottom for margin. If you want to introduce more risk into the system, just have a race to the bottom on margin.

Mr. ABRAHAM. Right.

Mr. DUFFY. So when we show that 1 day gross is $38 billion higher in our clearing house than any clearing house in the EU under 2 day net, they should say, "Okay, from a risk standpoint, we think that is a better proposal, even though they tried to say that 2 day net was more." So you cannot draw any other conclusion, sir, other than there are competitive issues, there are lobbying issues going on through European clients to bring business to their different institutions that have a lower margin, because cost of capital is very intense.

Mr. ABRAHAM. So, as a lot of answers in life, it is all about the money, then?

Mr. DUFFY. It is all about the money. And as I said earlier in my testimony, sir, when I was sitting in front of this Committee testifying about Dodd-Frank, I did say multiple times, we are going to be the country that institutes a 2,300 page document before the rest of the world even decides what they are going to do. There is nothing wrong with being a good leader, but, at the same time, if you don't have coordination in a global market regulatory framework, you are going to have the problems that we have all outlined in our testimonies today.

Mr. ABRAHAM. Yes, well, our job in Congress is to herd the cats for you guys, and try to bring them in line. Go ahead. Yes, sir.

Mr. EDMONDS. I was taken back up to the 30,000′ level that you were talking about. The ultimate outcome, and Mr. Duffy and I are not going to argue on the math of it, we have all seen the same stuff, but it can't be different.

Mr. ABRAHAM. I agree.

Mr. EDMONDS. That is the issue. If you want to give someone advice and counsel, in order to increase the certainty in the market, it has to be the same. Otherwise, the goal from Pittsburgh about not creating regulatory arbitrage is no longer a goal.

Mr. ABRAHAM. Mr. O'Malia?

Mr. DUFFY. Can I jump in there?

Mr. ABRAHAM. Sure.

Mr. DUFFY. Because, what is important here is we have offered to the European Union, of which, Mr. Edmonds, is regulated in London, parts of it, we said, "We will tell you what we will do, we will take the higher of. Whatever you guys want to do, we will do the higher of, but it has to be the same for everybody." They absolutely threw that out the window. It goes to show you it is a competitive issue, sir.

Mr. ABRAHAM. Right.

Mr. O'MALIA. I would urge Congress to pay attention to the development of the OTC margin rules coming forward. The good news is this has been done from a global perspective. I first voted on these rules back in 2011. Since then there has been a global effort to harmonize the OTC margin rules, which are expected out this summer.

There are some differences between jurisdictions. One of them deals with inter-affiliate trades. The U.S. would have to apply initial margin on inter-affiliate trades. In Japan and in Europe, that is not the case. This puts U.S. firms at—it is a difference, right? It is a significant difference. There are other differences. European rules have hair cutting on collateral and foreign exchange.

This is a globally developed rule, right? This has been harmonized at the international level. If they can't come to agreement on this rule, where can they come to agreement on.

Mr. ABRAHAM. All right. Thank you. Dr. Parsons, real quick, I don't have a degree in quantitative analysis, but if I saw the $1.7 trillion figure 90 weeks in a row, I too would be suspect of its accuracy. You said something in your testimony about a swap trade, a central area to report it. Where, in your opinion, would be best to centrify this type of data so that everybody could access it at the same time, and it would be equalized?

Dr. PARSONS. So the data is being reported to data repositories that everybody can access. The problem is a lot of the data is true. It is not reported correctly.

Mr. ABRAHAM. How do you get rid of that difference?

Dr. PARSONS. Well, there are two ways. The regulators are making an effort to be more prescriptive, but it is also true that businesses are sometimes not being sensible in the way they report, and sometimes businesses choose to purposefully game the system, and not share all the information that they want.

They are asking for prescriptive direction as an excuse, when we should be holding them to a standard to be reporting the normal way, and the normal degree of refinement.

Mr. ABRAHAM. Thank you. I am out of time, Mr. Thompson. I will yield back, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired. Mr. Kelly, for 5 minutes.

Mr. KELLY. Thank you, Mr. Chairman, and thank you to the witnesses for being here. Mr. Thompson, and I will try to phrase this question in a way that you can understand, speaking to the cross-border application and risk, what practices can we, as Congress, do either to emplace or remove things to facilitate the reduction or mitigation of cross-border risk, or to increase transparency?

Mr. THOMPSON. I am glad you asked that question. First, as we have said in our testimony, both written and oral, we think having very clear standards and data sets would be extraordinarily helpful. The key thing there would be to encourage the regulator not to be prescriptive in that fashion, but to work with the industry. We have been working with ISDA and with CPMI/IOSCO coming up with a common data set, for instance, for systemic risks across all of it. And we have actually done that for credit default swaps. We are not looking forward to doing that with interest rate swaps, and we will go through each one of the asset classes. And we have been working with Scott's organization to do that very effectively.

The other thing that we need to do, though, is to make certain that we don't get that far head of all of the other regulators. One of the issues with Dodd-Frank was we, in fact, were trying to lead the rest of the world. Well, the rest of the world didn't want our leadership. What they wanted was our cooperation. And so what we want to try to do is make certain that we are cooperating with the rest of the world in a group that you can actually sit down and have discussions with. We think that is CPMI/IOSCO. We think that is the right place where you can have a discussion about what these issues are, come up with common standards, and then drive that process forward on the local levels as you go back to each jurisdiction. Thank you.

Mr. KELLY. Thank you for your response. And if any other member at the table would like to respond to that, I would also be interested to hear your views.

Mr. O'MALIA. On the data question, I have kind of an interesting anecdote, the Europeans are developing their method to review. This is their Dodd-Frank implementation, and they were developing a liquidity test, and they were using European data. And the data they put forward was completely different than the data we have seen about U.S. markets in the U.S. data.

And we had to develop our comment letter on the European data rules—or on the trading rules—liquidity rules using U.S. data because we don't have access to European data. And they mischaracterized the differences between the U.S. dollar market significantly, two to three times larger than what it actually was.

Without having solid data, and accurate data, you are going to continue to find and develop rules based on misinformation, and that is kind of what we are facing right now. And you are going to come up with some radically different rules between the U.S. and Europe if you can't reconcile that data.

Mr. KELLY. And just very briefly, Dr. Parsons, how significant is the reporting of the $1.7 trillion commodity markets being the same over that period of time, and who or what body, or can this body, as the United States Congress, who can fix that?

Dr. PARSONS. Well, I purposefully chose it—first of all, that it is, as I said, something that I stumbled upon, so it is just very directly how I felt the problem. But I also thought it was just something that is so transparently clear that there is a problem. I think this whole conversation about data can be very confusing to many people. The fact that we are—I don't even understand why we are trying to report a number that we know is not right. That just seems really wrong. It really tells us the state of the situation, and helps to draw people in to what is not being done.

You have heard from many of us here. There is a common appreciation that the data has a lot of problems, and needs some attention.

Mr. KELLY. And this is more—I am about out of time, but this is more in comment, as opposed to a question. But data is very important, but what is important is turning data into information that this body can use. So just in the future, maybe in writing, you can tell us how can the CFTC turn data into information that both you and this body, this Congress, this nation can use. And with that I yield back, Mr. Chairman.

The CHAIRMAN. The gentleman yields back. Thank you. Mr. Allen, for 5 minutes.

Mr. ALLEN. Yes, sir. Thank you, Mr. Chairman, and I have been very interested in what we are talking about today. And just to clear up just a few things, of course, as a small business owner, It has been quite a disconnect between the business community and the government on how to regulate.

Is that a problem here in what we are trying to accomplish with this? Are we getting feedback from our business community on, okay, this is the way to do that, and are the regulatory people listening to you about how to fix these issues?

Mr. EDMONDS. I will take a shot at that. The way I would want to answer that question is what has happened is that conversation has created uncertainty, because there are so many different moving parts around the globe that impact what the final outcome of any one of these implementations might be. For anyone to give a declarative answer that is going to be held as sacrosanct, that you have the certainty of how to operate your small business, it is a bit dangerous. Because we may be coming back to you in a few months, and we know we told you it was "X" 3 months ago——

Mr. ALLEN. Yes.

Mr. EDMONDS.—but now, because of the implementation of this next phase of this global regulatory reform, it is really going to be "X" plus some variable that we don't know. That uncertainty does find its way into the business community. They want to come ask questions. They ask questions of all of our different respective groups represented here. They ask questions of the regulators. Sometimes they get different answers, sometime we get different answers.

I said in my oral testimony we spend a lot of time around unnecessary cost, both the time of the regulators of the business community, and those of us who operate infrastructure within that marketplace. So it is never going to be perfect. We live in a world where there is always going to be some level of missed information, but we have a stated goal. And if we are all talking about the stated goal, let us figure out a way to——

Mr. ALLEN. But it is good if we understand each other. Mr. Duffy?

Mr. DUFFY. Can I just give you a quick example, sir——

Mr. ALLEN. Yes, sir.

Mr. DUFFY.—of how the government is bumping heads with some of the business community? This is the Agriculture Committee. This is a critically important marketplace to this country because of the food that we supply to not only our country, but to the rest of world.

There is a rule at the CFTC where, on the hedge exemptions for *bona fide* users, such as the biggest producers of food in this country, whether it is Cargill, ADM, Bungie, any one of the big producers that you want to talk about, they could—they need to get anticipatory hedge exemptions. They should get anticipatory hedge exemptions so they can do the needs of the risk management so we can all afford the food that they are producing, with the ebbs and flows of it.

These are little rules that agribusinesses are bumping against, and every Member of Congress has some agribusiness in their district. They should be very focused on this particular hedge exemption role for the users. This is not a speculator issue. This is a *bona fide* agribusiness issue.

Mr. ALLEN. Yes?

Mr. O'MALIA. Mr. Allen, the testimony we have submitted is the cumulative work of the industry and users, banks and buy side, working together, trying to articulate specific solutions and recommendations, going forward. We appreciate the opportunity to come here and testify today to present kind of the compendium of recommendations. It is imperative, and our frustration is we are making good headway. We are clearing trades, we are on exchanges, we are supplying data. We are moving towards a harmonized OTC rule. We are working very hard to implement all of these, and quite successfully we have done so.

But there is some uncertainly, both have pointed out, that the Commission won't give us answers. The no action relief that is uncertain. What is the status of the cross-border rule? When does it end? When we have staffs that have been temporarily registered for almost 2 years. Trade data repositories 3 years. When do they get their final registration? We are tired of waiting.

Mr. ALLEN. Yes.

Mr. O'MALIA. We know that reforms need to be made. And we brought this to you, and hopefully you can, through your oversight responsibilities, ask the same questions of the regulators, and ask for specific results, time tables, and action.

Mr. ALLEN. Good. Well, as I learned in business, just let us know what the rules are, and give us certainty, and we will figure out how to get it done. And I hear what you are saying, and agree with you wholeheartedly.

I do want to ask one—I am about out of time, but, during the crisis we had an intense focus on market liquidity. Do you believe that those liquidity concerns still pose a real risk for our economy today?

Mr. DUFFY. I will take a shot at it. Liquidity has been a big issue, especially as it relates to the U.S. Treasury debt. As you know, one of the biggest participants in the marketplace is now at Janus, Bill Gross, and he has said that the liquidity has been at its all-time worst in the Treasury fixed income market today. So that is not a good sign, but that is a function of the macro events that we are looking at today. We have basically rates sitting at zero. Nobody is playing into the game. Nobody believes they need to hedge that up anymore.

So those are different types of issues where the liquidity has become a problem. I am concerned that this could affect our government and our country dramatically if those rates rise from zero to three or four percent overnight. And I am not saying they will, but that is where you can really affect this country. And then we will have too much liquidity, and a big problem.

Mr. EDMONDS. And just to add on that, the one place you could look at it from your seat and see where if you look at their repo market that is there. And I am sure Mr. O'Malia has some thoughts on that, given his constituency and things of that nature, Mr. Duffy, and I am certain we do. I won't take any more time. You can look at that——

Mr. ALLEN. Yes, well——

Mr. EDMONDS.—and see that impact——

Mr. ALLEN.—please get that information to us, so we can deal with it. Thank you. Mr. Chairman, sorry about the time.

[The information referred to is located on p. 67.]

The CHAIRMAN. The gentleman's time has expired. I want to thank our witnesses for coming today, and thank the Members for being a part of this hearing. Mr. Duffy, I appreciate you pointing out that it is not really notion of value that is the issue, it is trades, and the number of trades, as we all try to properly resource the CFTC. They have gotten some pretty good increases recently, and one of the things we would like to be able to do is try to understand what they have done with those increases that they have gotten, and how that has been implemented, where the technology is or isn't. We have some language in our bill that would help address the understanding on the technology side.

Dodd-Frank is a law. It is not a covenant. It is not a relationship between us and God. It is a law, and it was written by people, many of whom had biases and agendas. Some of which could get worked out. Others had biases in the implementation of it, and we are struggling to make it better. I didn't hear one witness, I didn't hear one Member today talk about throwing it out, or repealing, or anything like that. Those days are behind us. We are now in the coping phase, and trying to make it work phase. And to hold it sacrosanct, and to argue that any change at all somehow threatens the world is misplaced. Because there has never been a law, in my view, that has been written perfectly. Every one of them should be looked at periodically to see what is working and what is not working.

Unfortunately, with this one, we are not all the way to what is working yet, because there are additional rules that have to get implemented, and proposed, and written, and I am hopeful that the CFTC, as they have learned with respect to the cross-border things that are going on with the rules that have been put in place, that, as we look at those new rules moving forward, that there is some accommodation given, or some appreciation given to the fact that these are global markets, and we intend them to be global markets.

I am an American, and I am unapologetically American, but that doesn't make us perfect, and that doesn't make us the best at every single thing. There are some other folks in the world who might have good ideas from time to time, and we ought to have the strength of self-confidence to be able to look at other people's ideas to say, what one might be just a little better than ours, or, at a minimum say, that is close enough to ours that we can live with it, and they can live with it moving forward.

I appreciate our panel for helping point out some of those today. There are others that we couldn't get in the testimony that—looking forward to working with you. But the things we can agree on is that we ought be to be trying to make it better, make it work better, protect the public the way it needs to get protected. But that transaction cost didn't make sense, and continue to provide the services that are out there.

One of the unintended consequences that we came across was that the Amish can no longer trade, because we have moved the swaps to the electronic market, and they can't trade in electronic markets. So every time we do something we really think is good, there is always another side to the story as we move along. So I want to appreciate the panel. I suspect we will see some of you again in the future as we, again, have a common purpose of trying to create a functioning regulatory scheme that does, in fact, work for as many people as possible.

The Ranking Member had something else he had to go do, he couldn't stay until the end. Under the rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member. This hearing on the Committee of Agriculture is adjourned.

[Whereupon, at 11:29 a.m., the Committee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUPPLEMENTARY MATERIAL SUBMITTED BY CHRISTOPHER S. EDMONDS, SENIOR VICE PRESIDENT, FINANCIAL MARKETS, INTERCONTINENTALEXCHANGE, INC.

Insert

Mr. ALLEN. Good. Well, as I learned in business, just let us know what the rules are, and give us certainty, and we will figure out how to get it done. And I hear what you are saying, and agree with you wholeheartedly.

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Barclays

The Decline in Financial Market Liquidity

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- **Banking regulation has intensified since the financial and sovereign crises in a global effort to improve the safety and stability of the financial system. Regulators have forced banks to change their capital structures and their business models to enhance the safety of the banking system and make future financial crises less likely.**
- **These new regulations have materially improved the stability of the financial system. However, in an effort to reduce the risk of future fire-sales financed by short-term debt, they have also reduced the supply of safe, short-term, liquid assets such as repurchase agreements, causing them to trade at lower yields (and, by extension, higher prices).**
- **The reduction in the supply of short-dated safe assets and associated fall in the liquidity of fixed income markets has created incentives for investors to look to non-traditional sources of liquidity, such as ETFs and mutual funds. In turn, this may result in a transfer of fire-sale risk into assets such as leveraged loans and investment grade and high yield bonds, as liquidity in the underlying investments of these funds deteriorates, exposing end-investors to run risk.**

A Changing Landscape

Before the crisis that erupted in 2007, many banks operated with too little equity and were overly reliant on short-term wholesale financing, such as "repo", or repurchase agreements, to fund illiquid investments. When the crisis began, these banks did not have the capacity to absorb losses, given their limited capital base. Regulators have addressed this by forcing all banks to significantly increase their capital ratios, which are now higher than at any time since World War II. Excessive reliance on short-term financing exposed some banks to destabilizing runs when investors pulled their financing as the crisis began to mount, contributing to failures. More important from a systemic point of view, this precipitated the fire-sale of assets financed by short-term debt, driving down the prices of specific assets. This contributed to system-wide funding issues, even for banks with relatively strong balance sheets. To reduce the risk of future fire-sales, several of the new initiatives have targeted repo and other short-term liabilities, resulting in a more than 50% reduction in repo balances relative to their peak. In particular, the Volcker Rule was introduced to address illiquid and riskier investments that had burgeoned in the banking sector before the crisis.

The best evidence of the effect of new regulations probably comes from the credit market, where the spreads of bonds issued by the largest banks have narrowed significantly . . .

Whether these steps will be sufficient to curb future crises remains an open question. But it is clear that the new regulatory environment has materially improved the stability of the system. The best evidence of the effect of new regulations on banks probably comes from the credit market, where the spreads of bonds issued by the largest banks have narrowed significantly and, in many cases, are now tighter than industrial spreads. In other words, bond investors believe bank safety has improved so much that they are once again willing to accept low spreads for bank risk.[1]

Less well understood are the broader effects of improved stability on investors and the economy. Last year, we wrote that decreased bank lending was one potential implication (see *The cost of evolving bank regulation,* (*https://live.barcap.com/go/publications/content?contentPubID=FC2008788*) 13 February 2014). This year, we focus on the implications of two separate, but related, changes in financial markets.

- **The reduced size of the repo market.** This large, but relatively esoteric, part of the financial market is used by hedge funds and banks to finance securities and by money market funds to invest cash.
- **The fall in liquidity in fixed income markets, demonstrated by a decrease in turnover and an increase in bid-offer spreads.** This is related to the changes in repo, which is an important financing tool for banks' market-making operations, but is also driven by other changes that have made banks less willing to warehouse risk on behalf of investors.

These changes have important consequences for financial market participants, including hedge funds and insurance companies, which are having a harder time financing securities and positioning their portfolios and are paying higher transaction costs. Retail investors are also paying higher transaction costs in their mutual funds, and there is evidence that poor liquidity is affecting the behavior of active managers. However, these seem like relatively small prices to pay for a material decrease in the likelihood and magnitude of future financial crises.

The decline in repo has reduced the supply of safe, short-term assets . . .

We believe there are two broader implications that are more likely to be disruptive, particularly once (if) interest rates begin rising. First, the decline in repo has reduced the supply of safe, short-term assets. Relatively few assets fit this description: Treasury bills, bank deposits, and repo. The reduction in repo is happening as Treasury bill supply is shrinking and banks are less willing recipients of deposits, given lackluster loan demand. As overall supply of such assets declines, we believe investor demand for them is relatively inelastic and a function of financial wealth, which has been rising. We expect excess demand for short-dated safe assets to cause them to trade at lower yields (*i.e.,* higher prices), even as and when interest rates begin to normalize. This applies to deposit rates, which we believe will lag any rate hikes, such as we expect in the U.S. later this year, as investors remain willing to accept low interest rates to maintain a base of liquid assets. Similarly, money market funds may need to accept lower rates to remain invested.

. . . creating incentives for investors to look to nontraditional sources of liquidity . . .

Second, reducing the supply of these safe, short-dated assets creates incentives for investors to look to non-traditional sources of liquidity. Migration to seemingly liquid alternatives has happened before: in the pre-crisis period, safe short-dated assets were in limited supply (relative to financial wealth) because of the tremendous

[1] This argument is bolstered by the fact that banks arguably benefited from implicit government support (*i.e.,* bail-outs in the event of a disruption) pre-crisis, causing their credit spreads to be artificially low. Subsequent changes to regulation have likely reduced or eliminated the extent to which banks will benefit from bail-outs in any future crisis, which would bias bank spreads wider absent the improvements in credit quality that we cite.

run-up in equity prices. The result was a massive spike in CP, repo on structured assets such as ABS and CDOs, and auction rate securities, all of which purported to offer the daily liquidity investors were seeking. But this liquidity dried up once the crisis began.

For various reasons, the same alternatives will not be chosen this time around: the changes in regulations, investors' collective experiences with those investments, and the simple fact that many of them no longer exist. However, there have been increased flows in other vehicles that offer daily liquidity, such as ETFs and mutual funds. The desire for liquidity may also be limiting demand for closed-end fixed income funds, which would seem a natural response to the decline in fixed income liquidity.

The inflows into ETFs and mutual funds are happening just as liquidity in the underlying investments that these funds purchase is deteriorating. This has raised new concerns about "retail runs" and fire-sale risks in such assets as leveraged loans and investment grade and high yield bonds, where either liquidity has dropped most severely and/or where the funds offering daily liquidity have grown the most. Ironically, these new fire-sale risks have arisen in part because the risks of a repo-driven fire-sale have fallen. The well intentioned and arguably successful efforts to make the banking system more robust and less susceptible to runs have transferred fire-sale risk out of the banking system and into the hands of end-investors.

Repo 101

A repurchase transaction (repo) is effectively a collateralized short-term (often overnight) loan. For example, an investor looking to borrow money pledges a security (*e.g.,* a Treasury) as collateral, and receives cash. The next day, the investor pays back the cash plus interest, and receives his or her collateral back in return. A "reverse repo" is the same transaction but viewed through the lens of the lender.

Repurchase transactions have several important aspects. First, although much of the repo market is overnight, "term" repo, which can be measured in weeks or even months, is also possible. The structure is the same, but the collateral is not returned (and the loan paid off) until the end of the term. The second aspect is the interest rate of the transaction, which depends on the term and the specific collateral involved. For various reasons, some collateral may be specifically desirable to lenders and thus command lower interest rates. The final key dimension is the "haircut"—which defines just how much cash the borrower gets for the collateral. This is quoted in terms of a percentage of market value. Higher-quality collateral, such as Treasuries or agency debt, typically requires the lowest haircuts, *e.g.,* 2%. This means that it is possible to borrow $98 for every $100 of Treasuries that the borrower pledges as collateral. Lower-quality collateral (*e.g.,* corporate bonds) typically requires higher haircuts.

Banks engage in repo transactions for two related reasons. First, repos match cash-rich investors (such as money market funds) with investors (such as hedge funds) who own securities but need financing. This is done via a "matched book"—banks engage in reverse repo transactions with hedge funds, lending them money collateralized by securities. Banks then borrow from money market funds via repo transactions, collateralized by the same securities. The banks effectively act as middlemen, with the cash flowing from the money funds to the hedge funds, and the collateral moving in the opposite direction. The second reason banks engage in repo is to finance their own portfolio of securities, essentially playing the role of the hedge funds in the matched book example above.

Anatomy of a Repo Run

Although the repo market is large (measured in trillions of dollars; more on this below), it also seems, at first, fairly innocuous. Short-dated, collateralized loans sound safe, particularly relative to equities or the highly structured assets that featured so prominently in the credit crisis. In fact, these are safe investments for lenders. The short-term nature of the transaction means that if any concerns arise, the lender need not sell or unwind the transaction—it is closed out the next day, in the case of overnight repo. In case of default, the lender can sell the collateral and recoup his or her money. It is precisely the safety of repo that makes it an attractive investment for money market funds. They invest in safe, highly liquid short-term assets because their end-investors use these funds as cash substitutes.

> *The same features that make reverse repo a safe asset for money funds make repo a risky liability for leveraged investors and banks . . .*

However, the same features that make reverse repo a safe asset for money funds make repo a risky *liability* for leveraged investors and banks. At the slightest hint of trouble with either the collateral or the borrower, the funding can be withdrawn, which is as simple as not renewing an expiring contract. For example, if the collateral is downgraded, it may become harder to borrow against. Similarly, if the borrower (*e.g.,* hedge fund or bank) deteriorates in some way such that money funds or other lenders question its credit quality, borrowers may have a harder time securing funds regardless of the quality of their collateral. Essentially, borrowers reliant on repo need to continually roll over their financing, and are exposed to the risk of a run as a result, similar in concept to a deposit run.

This presents two concerns for regulators. First, banks finance significant securities portfolios via repo, and thus there is risk that an individual bank would need to liquidate assets in response to being locked out of the repo market—a pre-default fire-sale. This is problematic because the highest-quality assets are the easiest to sell—Treasuries, agencies, *etc.* A bank that was overly reliant on repo financing of lower quality securities and faced a repo run could be forced to sell assets quickly to raise liquidity, potentially driving down their market valuations and leading to asset write-downs that would impair capital, and increase the bank's risk of default or downgrade. It might also need to sell assets or draw down on its cash holdings to meet increases in haircuts on the collateral it is pledging.

Such a run could affect multiple (or even all) banks at once if bank credit quality deteriorated across the board, or if the entire repo market experienced a disruption. This could be caused by a systemic shock leading to a crisis of confidence in the broader financial system. In this scenario, with multiple borrowers trying to liquidate assets, the market could experience a fire-sale—the prices of certain assets could plummet because of a large number of forced sellers trying to liquidate at once. This could be exacerbated by money market funds, which are often legally prohibited from owning the types of collateral underpinning their repo trades and would be forced to sell quickly if their counterparty defaulted and the fund took possession of the collateral. The solvency of an individual bank could deteriorate much faster in this scenario because it would be forced to sell assets at a loss, thereby eroding its capital. In fact, solvency concerns could spread through the financial system.

Academic studies have described this phenomenon as a "funding and liquidity spiral".[2] Asset price shocks in a particular market create funding problems for cash borrowers who pledged the same or similar collateral. Borrowers reduce their positions by selling some of their holdings, while their ability to borrow against their remaining assets shrinks as haircuts increase and the value of these holdings falls in response to selling pressure. This exacerbates the funding problems and forces more de-leveraging and asset fire-sales—the process becomes self-reinforcing.

Lessons from the Credit Crisis

> *Concerns about repo runs are not theoretical. The failure of Lehman Brothers serves as a real world case study . . .*

Concerns about repo runs are not merely theoretical. Lehman Brothers' failure in September 2008 serves as a real world case study. Lehman's repo book accounted for 34% of total liabilities at 2Q08, a cursory measure of the firm's dependence on short-term funding. During normal times, this was an effective strategy for leveraging returns, but as the firm's crisis reached a climax, repo funding providers suddenly fled. Between September 9, 2008, and September 15, 2008 (the day of its bankruptcy filing), the number of tri-party counterparties providing Lehman Brothers with cash in exchange for securities fell from 63 to 16. Given that Lehman Brothers had used repo to fund a material volume of lower-quality, non-governmental securities—the prices of which had fallen sharply—the firm was left with assets it could no longer fund in overnight markets or sell without destroying capital, eventually contributing to the firm's bankruptcy filing.

Although the Lehman experience is an important, cautionary tale, it also delineates where the true "run risk" lies within the repo market. Interestingly, the financial crisis did not cause a waterfall of repo runs across the rest of the system. Instead, the deterioration in repo markets was more focused.

- **Higher-quality assets were still funded at modest haircuts:** Repo haircuts did rise during the crisis across many asset classes; however, this was generally concentrated in funding for lower-quality ABS structures.[3] Treasuries, agencies, and even investment grade corporate bonds showed modest—if any—increases

[2] See "Market Liquidity and Funding Liquidity", M. Brunnermeier and L. Pedersen, National Bureau of Economic Research working paper, December 2008.

[3] See "Repo Runs: Evidence from the Tri-Party Market", A. Copeland, A. Martin, and M. Walker, Federal Reserve Bank of New York, July 2011.

in margin requirements over this period. For example, a Federal Reserve staff report indicated that U.S. Treasuries and agencies continued to be funded in the repo market throughout this period at haircuts of only 3% or less (*i.e.,* 97% loan to value).

- **Evaporation of repo funding was concentrated in lower-quality issuers:** Evidence from the same Federal Reserve study suggests that the repo funding flight was highly idiosyncratic to Lehman Brothers. Certain investors chose to cease providing Lehman with repo funding but nonetheless continued to fund other financial market participants.

Overall, this suggests to us that repo is less flight-prone than might be imagined. Funding terms were not markedly increased and were not in themselves the transmission mechanism for forced sales. Furthermore, the markets for higher-quality assets that typically serve as repo collateral were able to absorb the liquidation of Lehman's large Treasury and agencies books, which had been funded by repo. This can be naturally linked to the strong performance of these safe haven assets during times of turbulence, minimizing the risk of needing to take a loss as positions are closed.

However, we must be careful not to draw too much comfort from the experience of the crisis, given the unprecedented intervention in markets by the Federal Reserve and other central banks, which may have helped stem further contagion. The core issues around funding long-term, price-sensitive assets remain—entities using short-term funding (such as repo) need to mark their assets to market and obtain new funding every day. A temporary price decline has the potential to wipe out a firm's margin and force it to sell its assets. This could in turn push asset prices lower, forcing other participants to sell and perpetuating the cycle. We believe that it is this risk—of a waterfall of forced sellers destabilizing the broader system—that regulators are attempting to address via repo-targeted reform.

Regulators Have Responded With Significant Changes

Global standards for bank balance sheet size were fairly lax prior to the financial crisis. Basel I and II capital standards were largely based on risk-weighted assets, as opposed to total assets. This facilitated inflated balance sheets and more active proprietary risk taking in trading businesses. Regulators have made a series of changes to the bank regulatory framework to address perceived balance sheet structure and business model risks. These include:

- Volcker Rule.
- The introduction of leverage ratios.
- SIFI buffers.
- Haircuts.

Volcker Rule

Banks' trading operations historically served two main purposes: (1) providing liquidity to market participants wanting to buy or sell securities in exchange for a bid-ask spread; and (2) using the bank's balance sheet to generate profit from price movements. Bank regulators grew concerned that proprietary trading positions created undue risks on banks' balance sheets. In response, the Dodd-Frank Act created the Volcker Rule, which prohibits proprietary trading. Among other things, the rule limits banks' ability to take trading positions—capped at demonstrated market demand. In a market where demand from clients, customers or counterparties is expected to diminish, this limits a bank's ability to intermediate the market. Notably, regulators chose to exempt Treasury and municipal securities from these restrictions.

Leverage Ratios

Pre-crisis, the most important (and binding) regulatory capital ratios banks needed to meet were based on risk-weighted assets. Safe assets, such as repo, were assigned low risk weights, and thus banks were required to allocate very limited capital to those types of positions. As a result, there were few practical limitations on the size of bank balance sheets, which expand as banks increase the size of their matched-book repo positions.

This has changed in both the U.S. and Europe. Regulators in the U.S. have adopted a 5% supplementary leverage ratio for the holding companies of the systemically important U.S. banks.[4] This represents a materially stricter requirement than the old U.S. standard, as it raises the hurdle from 4% and expands the scope to capture some off-balance sheet assets. This rule complements existing risk-weighted capital measures by ensuring that even low-risk assets and certain off-balance-sheet exposures are backed by material equity capital if exposures are large enough (see *Leverage ratio: An attack on repo?* (*https://live.barcap.com/go/publications/content?contentPubID=FC1953464*)).

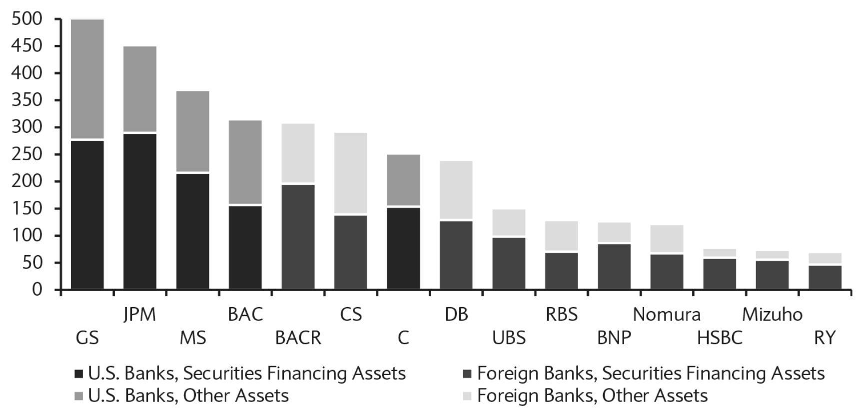
> *Before the crisis, European banks were not subject to any restrictions on balance sheet; thus, they naturally gravitated toward lower risk-weighted assets—this has now changed . . .*

Prior to the crisis, European banks were not subject to any restrictions on balance sheet. Thus, they naturally gravitated toward lower risk-weighted assets (*e.g.,* repo). This has now changed for two reasons. First, European regulators have adopted a 3% leverage ratio and several are moving toward an even higher standard. Second, new regulations on U.S. subsidiaries of foreign banks will push these banks to manage the balance sheets of their U.S. operations more conservatively. Previously, foreign banks' U.S. intermediate holding companies were not required to meet U.S. capital standards independently. However, beginning in July 2015, Section 165 of the Dodd-Frank Act will require foreign-domiciled banks to roll up all their U.S. broker/dealers and bank branches into a single intermediate holding company (IHC). The IHC will then need to meet risk-based capital requirements, maintain minimum liquidity buffers, and meet the minimum leverage ratio. The challenge of establishing an IHC is particularly acute for foreign banks that mainly conduct broker-dealer business in the U.S., with limited lending capabilities, because their balance sheets would be naturally skewed toward lower risk-weight business (*Figure 1*). Based on recent data, these institutions will be under similar pressure as their U.S. peers to reduce size and/or increase equity.

Figure 1

Foreign banks account for a significant share of U.S. broker-dealer activity

Assets of U.S. broker-dealers ($bn)



Note: Data as of YE 2013. Source: Company reports, Barclays Research.

SIFI Buffer for Short-Term Wholesale Funding Reliance

In December 2014, the Federal Reserve released its notice of proposed rulemaking (NPR) outlining the U.S. implementation of additional capital buffers at systemically important banks. This highly anticipated release outlined the rules for determining how much more Tier 1 common capital the largest banks will hold above the Basel III minimums.

Most elements of the rule were taken directly from the Basel/Financial Stability Board guidelines; however, the Fed also shifted critical elements. In one key change,

[4] Technically, the proposed higher supplementary leverage ratio requirement would apply to all banks in the U.S. with at least $700bn in assets and/or $10trn in assets under custody, which at present captures the eight U.S. G–SIBs: Bank of America, Bank of New York, Citigroup, Goldman Sachs, JP Morgan, Morgan Stanley, State Street, and Wells Fargo.

the Federal Reserve decided to vary capital requirements based on the amount of short-term wholesale funding used by a given bank. Although we do not believe this change in itself generates higher capital requirements *versus* the FSB rules (based on current balance sheets), it does establish a link, for the first time, between capital requirements and wholesale funding structure. For a more detailed discussion of the proposal, see *We're Gonna Need a Bigger Buffer: Fed Proposes SIFI Capital Surcharge,* (*https://live.barcap.com/go/publications/content?contentPubID=FC2095719*) 11 December 2014.

Haircuts Up Next

Though somewhat less certain, we expect further rulemaking to address haircuts for repo transactions. These would likely be designed to cap leverage within the repo market to levels appropriate for the quality of the underlying collateral, see *Squeezing the leverage out,* (*https://live.barcap.com/go/publications/content?contentPubID=FC2080857*) October 24, 2014. Federal Reserve Governor Daniel Tarullo has repeatedly expressed a desire to add regulation along these lines over the past year. Most recently, in a speech at an Office of Financial Research conference (excerpted below), he highlighted his intention that such rules also apply outside the traditional banking sector to mitigate the risk of non-banks building up repo leverage as banks pull back.

Federal Reserve Governor Daniel Tarullo, January 30, 2015

"I have on past occasions described at some length my concerns with short-term wholesale funding—especially, though not exclusively, funding associated with assets thought to be cash equivalents . . . . One policy response that the Federal Reserve has advocated and that has now been proposed by the Financial Stability Board (FSB), is for minimum margins to be required for certain forms of securities financing transactions (SFTs) that involve extensions of credit to parties that are not prudentially regulated financial institutions. This system of margins is intended to serve the macro-prudential aim of moderating the build-up of leverage in the use of these securities in less regulated parts of the financial system and to mitigate the risk of pro-cyclical margin calls by preventing their decline to unsustainable levels during credit booms."

These Changes Have Reduced Repo Volumes and Liquidity

The Repo Market Has Shrunk

Repo balances have fallen from a peak of more than $5trn pre-crisis to about $2.5trn currently. We believe this market will decline by an additional ~20%, or roughly $500bn. The total amount of outstanding repo has contracted twice since 2008 (*Figure 2*). During the first episode (March 2008–December 2009), total repo outstanding shrank by almost 47%, driven by asset price fears and bank and investor de-leveraging. Although repo against corporate bonds accounted for less than 10% of overall collateral pledged in March 2008, this market had the biggest reduction in activity, with volumes plunging by more than 63% during the financial crisis. We interpret this decline as a response to the use of non-traditional collateral.

The second repo contraction, which occurred between November 2012 and February 2014, has been focused on higher quality collateral, and in our view has been a result of new regulations. In this episode, overall repo volume fell by 22%, led by agency MBS collateral, which plunged by 43%—more than it fell during the financial crisis.

This is clearly visible in the repo balances of the large U.S. banks, which have declined by 28% over the past 4 years (*Figure 3*). Notably, the only U.S. global systemically important bank (G–SIB) to grow its repo balances over the past few years has been Wells Fargo, which we estimate has a significant surplus to its required supplementary leverage ratio requirement. That is because Wells Fargo predominantly focuses on traditional banking businesses of taking deposits and making loans (higher RWA), with lower exposure to repo and trading (lower RWA).

Figure 2

Aggregate Repo Volumes Have Contracted Sharply From Pre-Crisis Levels

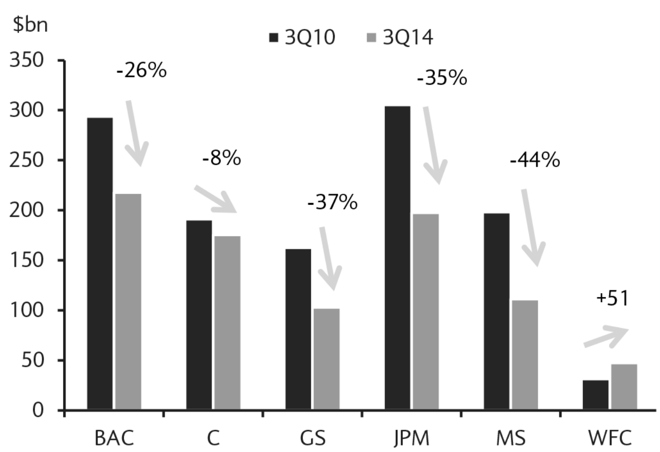
Repo outstanding ($trn)

Source: Federal Reserve, Barclays Research.

Figure 3

Most Large U.S. Banks Have Responded to SLR Requirements by Reducing Repo Balances

Repo borrowings ($bn)



Source: Company reports, Barclays Research.

Although the pace of the reaction to new rules has varied, all bank management teams that face balance sheet size pressure have taken steps to reduce their low RWA exposures. Most recently, Goldman Sachs CFO Harvey Schwartz highlighted the company's focus on reducing its balance sheet in response to increased regulatory clarity.

Goldman Sachs CFO Harvey Schwartz, July 15, 2014

"Over the past few months, we have received greater clarity on the role of the balance sheet across a variety of regulatory requirements, most notably the Comprehensive Capital Analysis and Review (CCAR) and the supplementary leverage ratio. During the quarter, we undertook a comprehensive analysis of our balance sheet. We began the process by examining the return on asset characteristics associated with different businesses. Through that analysis, we identified opportunities to reduce balance sheet with a *de minimis* impact to our client franchise and earnings potential. As you would expect, the quarterly reduction largely impacted lower return asset activities within our matchbook and other secured financing transactions."

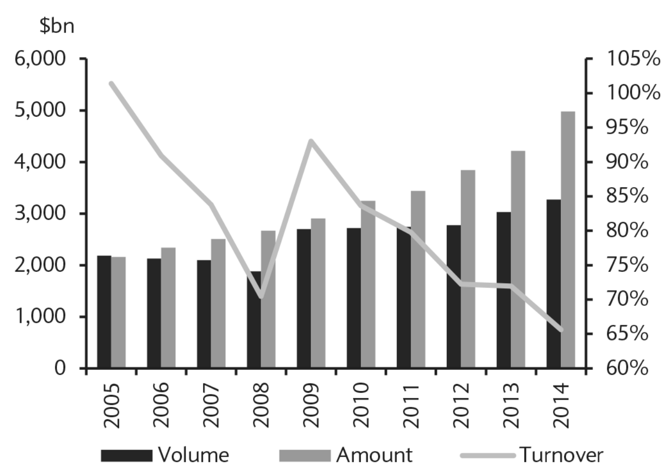
Liquidity in Fixed Income Markets Has Contracted

The decline in liquidity in fixed income markets is another consequence of the changes in bank regulation for financial markets. For illustrative purposes, we focus on the U.S. credit market, for which we have accurate volume and transaction cost data, but we believe the results shown below are indicative of how trading patterns have evolved generally.

Beginning with volume data (from the TRACE reporting system, which captures all corporate bond trades in the U.S.), we compute turnover metrics for both the U.S. investment grade and high yield bond markets. Turnover has clearly been on a declining trend—in both markets, it is at or close to the lowest levels on record (high yield experienced a small bounce in late 2014 as a result of the volatility of energy credits). In high yield, turnover has steadily made its way down from 177% in 2005 to 98% in 2014 (*Figure 5*). Notwithstanding a genuine spike in investment grade corporate turnover in 2009, as the market recovered from the credit crisis, volumes in that market have also failed to keep pace with growth in par outstanding, and turnover is down from 101% to 66% over the same period (*Figure 4*).

Figure 4

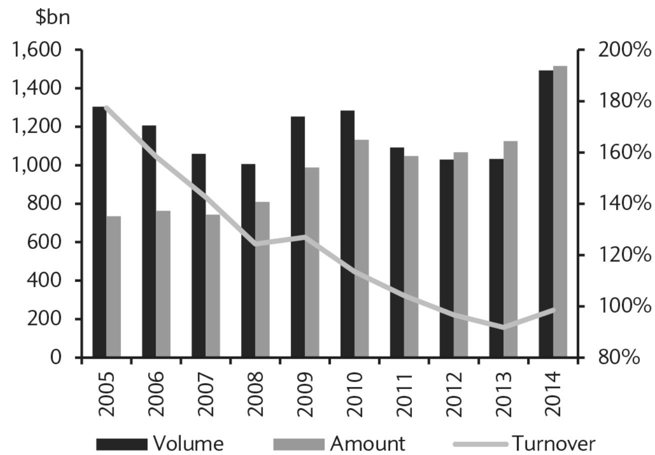
Volume, Market Size, and Turnover in High Grade Credit



Source: MarketAxess, Barclays Research.

Figure 5

Volume, Market Size, and Turnover in High Yield Credit



Source: MarketAxess, Barclays Research.

Transaction costs have risen at the same time. *Figure 6* contains pre- and post-crisis transaction costs in the IG and HY markets, estimated using our Liquidity Cost Score (LCS) methodology.[5] Transaction costs have increased in both markets. Although the change in HY is notable, at more than 20%, the change in IG is more marked. We think this is the result of the substantial strength of pre-crisis liquidity in that market. Note that the change in LCS is more severe than that in bid-offer—this is driven by an increase in the average duration of the IG market over the past several years. The same average bid-offer spread corresponds to a higher transaction cost for a longer-duration bond.

Figure 6

Transaction Costs, Today *Versus* the Pre-Crisis Period

	1/31/2007		1/31/2015		Change	
	LCS (%)	Bid-Offer	LCS	Bid-Offer	LCS	Bid-Offer
U.S. Credit Corporate	0.531	8.5 bp	0.951	13.2 bp	+79%	+55%
U.S. High Yield Corporate	1.276	1.28 pts	1.550	1.56 pts	+21%	+21%

Source: Barclays Research.

Changes in the drivers of volumes and turnover at the individual bond level provide further evidence of the decline in liquidity . . .

The changes in the drivers of volumes and turnover at the individual bond level provide further evidence of the decline in liquidity. In *Figure 7,* we present regressions of turnover in high yield bonds against size, age, and volatility in 2006 and 2014. In 2006, the two main determinants of turnover were the age of a bond and its volatility. We interpret the relevance of age as a halo effect around new issue—bonds tend to trade in meaningful size in the months immediately after issuance. Turnover increases with volatility because price changes force investors to re-evaluate their holdings in a particular bond. Corporate actions, earnings, upgrades and downgrades are all possible sources of volatility that could lead credit investors to reposition their portfolios.

By 2014, a few things had changed. First, the coefficients on age and volatility were both sharply lower. The "new issue effect" was much reduced, and it took much more volatility to drive the same level of turnover. More interesting, size became a much more important determinant of turnover. This suggests to us that investors "pooled" liquidity in the largest bonds, which became proxy trading vehicles

[5] *Liquidity Cost Scores for U.S. Credit Bonds,* (*https://live.barcap.com/go/publications/content?contentPubID=FC1484108*) October 2009.

for the market. This is exactly the type of reaction we would expect from investors struggling to position portfolios in a lower-liquidity environment—the little liquidity that does exist is concentrated in a smaller number of issues, rather than dispersed across the market.

Figure 7

Cross-Sectional Regressions of Annual Turnover on Size ($bn), Age (yrs), and Volatility (%)

	2014 (R^2 18%)				2006 (R^2 20%)			
	Size	Age	Vol	Alpha	Size	Age	Vol	Alpha
Beta	0.15	−0.06	3.80	0.89	0.08	−0.17	11.40 1	.20
Standard Error	0.03	0.01	0.11	0.02	0.04	0.01	0.34	0.04
t-statistic	*6.10*	*−9.13*	*35.62*	*38.36*	*1.82*	*−14.82*	*33.16*	*32.30*

Source: Barclays Research

The Short-Term Safe Asset Conundrum

Much repo funding is intra-sector—*i.e.,* financial intermediaries lending to one another—but ultimately, a portion of this funding is indirectly provided by households and non-financial corporates through investments in money market funds. From the perspective of non-financial entities, repo is an asset and just one of a number of short-term, safe—even "cash-like"—investment alternatives. Households and corporates have a natural need for these types of funds as a cash management vehicle and store of liquidity.

This natural need for liquidity grows as financial wealth grows, which results in the share of safe, short-term assets remaining in a relatively tight range for households and corporates. To demonstrate, we create a measure of short-term assets, which includes currency, deposits, and money market fund shares. For corporates, we also include a *de minimis* amount of direct repo lending and commercial paper owned. Although the direct repo holdings of households and corporates are not significant, the funding that households and corporates provide to money market funds is then reinvested by these funds in repo. Similarly—but on a smaller scale—a proportion of individual and corporate deposits is also reinvested by the bank in repo.

Households have consistently allocated 12–18% of financial assets into cash and short-term securities in every quarter since the early 1990s (*Figure 8*). Likewise, non-financial corporates' allocation has remained at 10–14% (*Figure 9*).

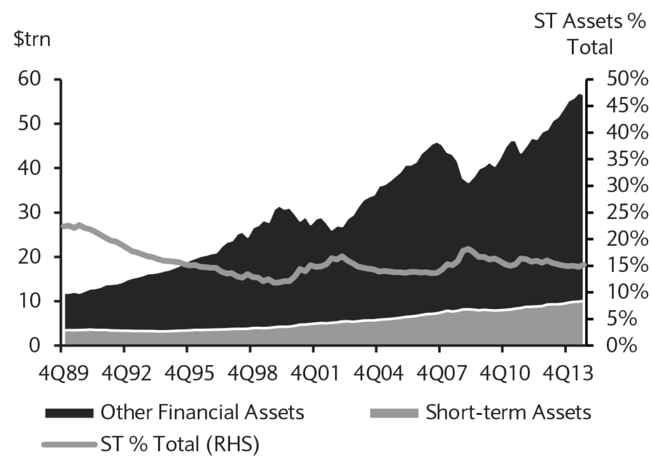
We think demand for short-term safe assets is even more stable than these ranges imply. Short-term assets as a percentage of total financial assets troughed three times: in 2000, 2007, and today—each period one of strong equity market performance inflating exposure to stocks (*Figure 10*). Similarly, relative exposure to short-term assets peaked in 2001 and 2008, when sharp equity market declines reduced the value of stocks. In fact, absolute holdings of short-term assets have increased in 19 of the past 20 years, by an average of 6.2%. In other words, the pace of growth in short-term assets has steadily tracked the long-term growth rate of household and corporate accounts. Indeed, Gorton, *et al.,* report that their "safe asset" share of all U.S. assets has remained steady at around 33% since 1952.[6]

[6] See "The Safe-Asset Share", G. Gorton, S. Lewellen, A. Metrick, NBER working paper, January 2012.

Figure 8

Short-Term Assets Have Accounted for a Stable Proportion of Household Financial Assets

Household Financial Assets

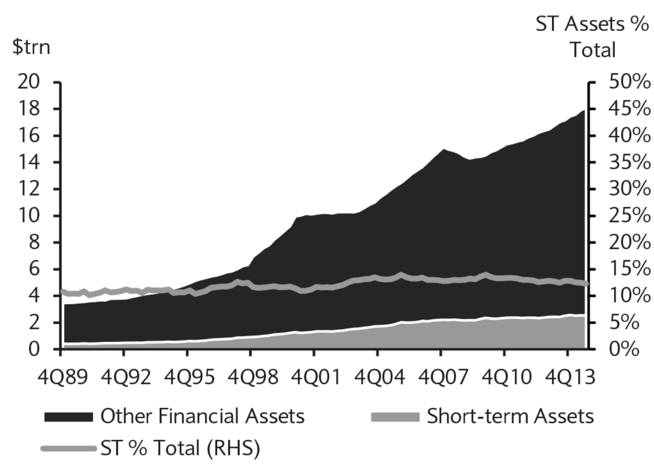


Source: Federal Reserve Flow-of-Funds data, Barclays Research.

Figure 9

Non-Financial Corporates Have Also Maintained a Steady Proportion of Assets in Short-Term Funds

Non-Financial Corporate Financial Assets

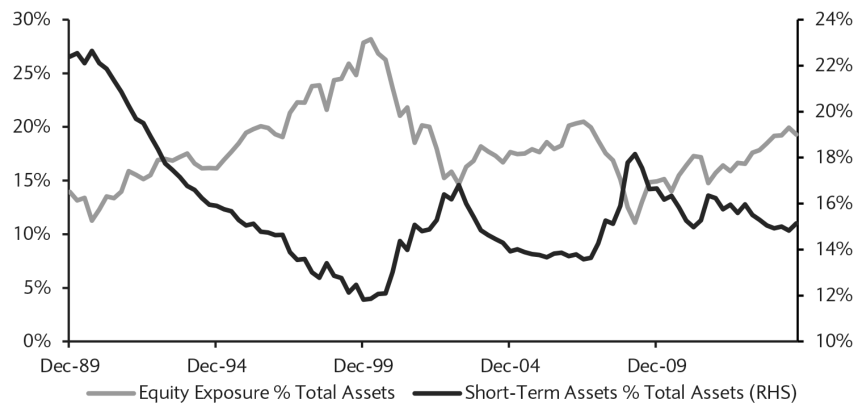


Source: Federal Reserve Flow-of-Funds data, Barclays Research.

Figure 10

Following Periods of Strong Equities Performance, Household Exposure to Equities Peaks and Short-Term Assets Reach a Local Low As a Percentage of Total Assets

U.S. Household Exposure to Equities and Short-term Assets



Source: Federal Reserve, Bloomberg.

How will the demand for safe, short-term assets be met?

Treasury bills, bank deposits, and the Federal Reserve's new reverse repo program (RRP) all have their limitations as short-duration liquid assets . . .

Faced with the prospect of shrinking bank-provided repo, what alternatives are available to investors seeking short-duration liquid assets? A survey of similar low-risk, short-term options suggests investors may struggle to deploy their growing allocation to this category. The main low-risk alternatives—Treasury bills, bank deposits, and the Federal Reserve's new reverse repo program (RRP)—all have their limitations.

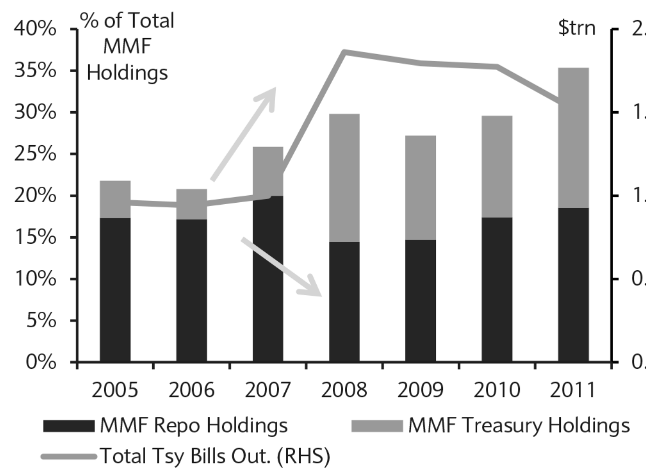
Bills Insufficient and Declining

Short-dated Treasury debt is probably the closest substitute for repo—and probably the most plentiful alternative—with $1.5trn in bills and $1.5trn in coupon Treasuries under 400 days to maturity outstanding. Moreover, given the limitations on what some investors can own, short-dated Treasury debt is one of the easiest substitutes. In fact, when repo balances contracted during the financial crisis, there was a marked increase in money market funds' Treasury bill holdings, supported by the increased bill supply in 2008 (*Figure 11*).

However, as the budget deficit shrinks and the Treasury moves to lengthen the average maturity of the outstanding debt, it has steadily trimmed bill issuance. Since peaking in 2009, the outstanding bill supply has contracted by more than 20% (>$500bn) (*Figure 12*). Demand is so strong that at bill auctions—of any maturity—bids exceed the offering amount four-fold. And given the buy-and-hold nature of the investor base, once the paper is purchased into a portfolio it almost never returns to the market. Thus, even though $1.5trn in absolute terms is larger than the aggregate debt outstanding of some G7 countries, the Treasury bill market—even supplementing the supply with coupons out to 13 months—is probably too small to absorb demand diverted from the private sector repo market.

Figure 11

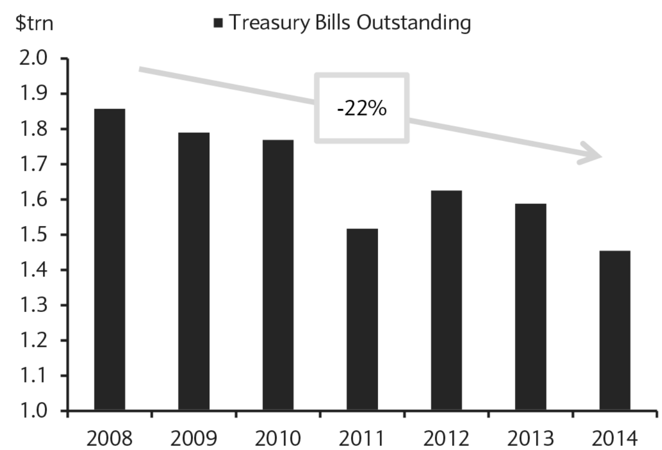
Upon the Contraction of the Repo Market in 2008, MMFs Redeployed Capital into Treasury Bills



Source: Federal Reserve, SIFMA, Barclays Research.

Figure 12

However, Bill Volume Has Since Declined and Is Unlikely To Be Able To Absorb Incremental Demand from Declining Repo



Source: Federal Reserve Flow-of-Funds, Barclays Research.

Deposits Are a Natural Alternative, But Rates Could Lag if Demand Increases Out of Step With Lending Opportunities

Deposits are clearly a safe, liquid asset and are one of the main areas where households and corporates deploy short-term funds. Uninsured bank deposits (above the $250k insurance maximum) do represent incremental credit risk *versus* government obligations; however, money market funds already deploy roughly 20% of their holdings into wholesale bank deposits, suggesting that deposits form a reasonable investment avenue for these entities.

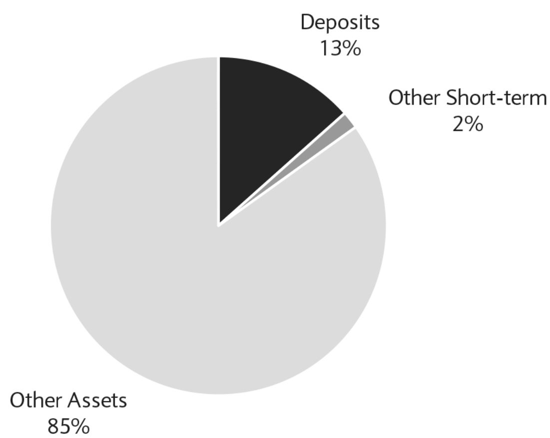
However, we do not see much demand from banks for this incremental funding. Banks are already awash in deposits, as demonstrated by an average loan-to-deposit ratio of roughly 70%. Although banks will continue to take deposits, away from pockets of demand for retail deposits driven by the new Liquidity Coverage Rule (LCR), we believe banks' interest in further inflating their balance sheets is limited.

Their appetite is constrained both by the new SLR rule and limited lending opportunities. Thus, if money market funds boost the supply of deposits to banks, banks in turn may be less inclined to raise the interest paid on deposits.

Figure 13

Deposits Already Form the Core of Households' Safe, Short-Term Assets and a Material Share of Money Market Holdings, Suggesting They Are a Likely Alternative Investment Avenue

Mix of Household Financial Assets (% of Total)



Source: Federal Reserve, Barclays Research.

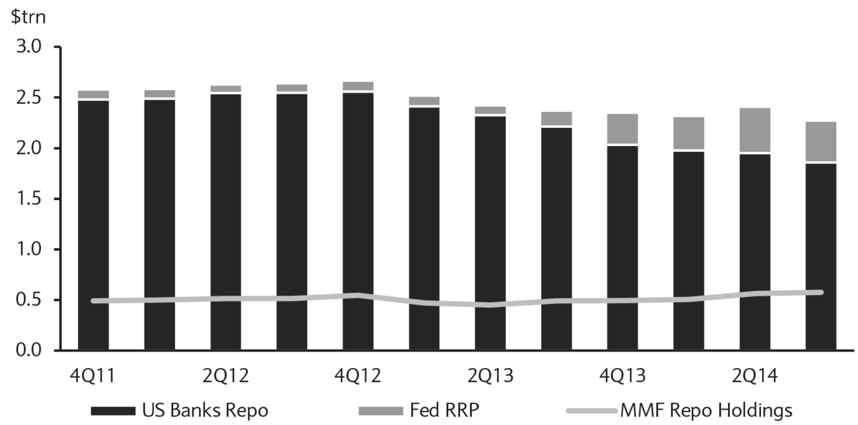
Federal Reserve's RRP Capped, Limiting Capacity To Absorb Incremental Demand

The RRP is a close substitute for shrinking private sector repo . . .

The Fed's reverse repo program (RRP) is a close substitute for shrinking private sector repo and is available to a wider range of counterparties, including large money market funds and the GSEs. For these investors, Treasury repo from the Fed supplements what is available to them from the private sector. Since program testing began in September 2013, average daily balances in the RRP have been roughly $125bn (and considerably higher at quarter-ends, when bank and dealer balance sheet scarcity increases and few private sector repo assets are available for money market funds to invest in). This has largely offset the decline in private sector repo volume in recent years (*Figure 14*). In turn, mutual fund repo holdings have remained relatively stable in aggregate (actually increasing as a % of total holdings) as they have redeployed funds into the RRP.

Figure 14

Fed RRP Has Offset Much of the Fall in Private-Sector Repo Volume, Helping MMFs Keep Total Repo Holdings Fairly Constant



Source: Federal Reserve Flow-of-Funds, Barclays Research.

However, the Fed's stated concerns about the program have led it to put a hard cap of $300bn on the RRP; thus, we expect its capacity to replace shrinking private sector collateral supply to be limited. The Fed's concern stems from its discomfort with directly funding money market funds and the fact that even with the $300bn cap, its market presence in the repo market is nearly as large as the top three dealers *combined.* Moreover, it worries about the potential for the program to dis-intermediate bank funding during a financial crisis. Notably, in the January FOMC minutes, most participants accepted that the Fed might have to temporarily increase the cap on the overnight RRP program to strengthen its control over the fed funds rate. Officials are concerned, however, that the market might attach more significance and permanence to the RRP program if the size was increased so it is far from certain the Fed will provide money funds with extra repo.

Limited Supply of Alternatives Could Inhibit Higher Short-Term Rates

> *We expect deposits to exhibit a lower beta to short-term rates once the Fed begins hiking rates . . .*

In aggregate, we expect demand for safe, short-term assets to grow steadily. However, the supply of these assets from the avenues listed above will likely be constrained. When we factor in an expected decline in repo, we project an increased imbalance between supply and demand. This imbalance—more investors looking to deploy cash in the short end than safe borrowers needing that cash—should lower the relevant interest rates paid. For example, the available data suggest that bank deposits have historically had a 60–80% beta to short-term interest rate changes. We expect deposits to exhibit a lower beta once the Federal Reserve begins hiking rates, as funds that short-term investors previously allocated to repo assets flow into bank deposits. Through this indirect mechanism, forced declines in repo volumes could keep the interest earned by deposits or government-focused money market funds closer to the zero bound, even as other rates rise. In fact, it is exactly the concern about substantial demand for short-dated assets that is leading the Fed to question whether the RRP program may need to be increased. Otherwise, the actual front-end rates used in the economy may not track Fed funds as closely, limiting Fed's control of interest rates.

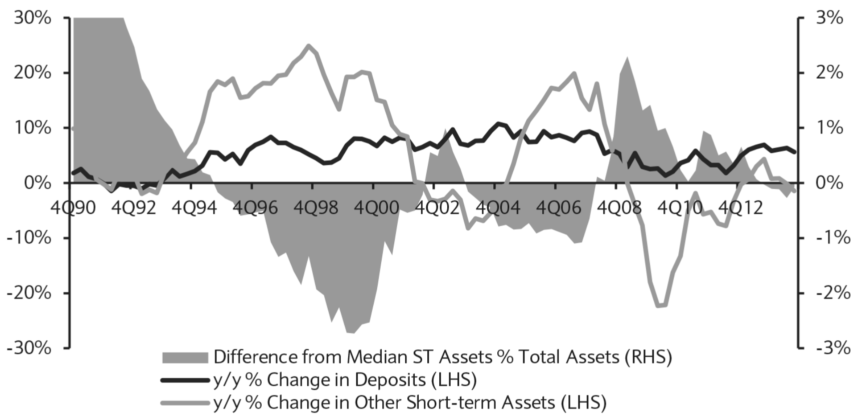
Private-Sector Alternatives Add Incremental Risk

Where investment avenues backed by the government, both directly (Federal Reserve RRP, Treasuries) and indirectly (government collateral repo, FDIC), are less available, we expect private sector alternatives to become more prominent. However, their degree of substitutability with repo is lower and could introduce new risks.

Figure 15

When Short-Term Assets Are Scarce, Non-Traditional Alternatives Step In To Fill the Void

Y/Y Change in Deposits and Other Short-Term Assets (LHS) and Difference from Median Short-Term Asset Holdings % Total Assets (RHS)



Note: Short-term assets and deposit assets for all entities. Median short-term asset rate represents aggregate of household and non-financial corporate data. Source: Federal Reserve Flow-of-Funds data, Barclays Research.

History Suggests Less Standard Alternatives Are Likely To Rise

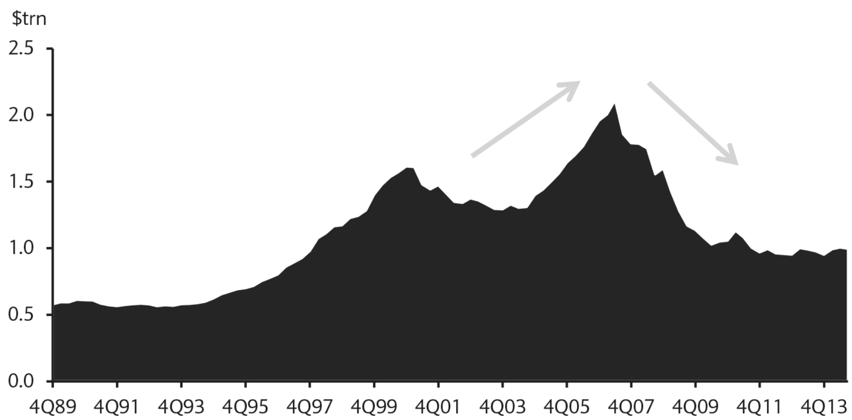
The Federal Reserve's Flow of Funds data suggest that growth in less traditional cash-like products may be particularly responsive to a shortfall in traditional safe, short-term investment opportunities. Deposits have generally grown steadily over the past 2 decades, with relatively limited responsiveness to economic conditions. On the other hand, other short-term assets, such as CP vehicles and money market funds, have had a more volatile growth pattern, responding to the relative demand for incremental safe assets in any given period. *Figure 15* suggests that when households and corporates have a low percentage of total assets in short-term investments, the growth rate of short-term alternatives picks up sharply. In other words, when there is a shortage of traditional short-term safe assets, alternative assets have historically stepped in to fill the void.

The last trough of short-term assets as a percentage of total financial assets coincided with a large rise in the use of what were deemed to be near-safe short-term asset substitutes. CP and ABCP balances surged as investors stretched to find additional safe assets and pick up incremental yield and banks sought cheaper sources of funding (*Figure 16*). When market sentiment turned in 2008, these non-traditional sources of liquidity proved to be less liquid and stable than expected. The decline in bank commercial paper has not reversed due to increased regulation and lower ratings at banks, while more esoteric products such as auction rate securities and asset backed—CP proved to bear much higher liquidity and credit risk than expected and are thus unlikely to return any time soon.

Figure 16

Holdings of Cash-Like Substitutes Grew Dramatically Pre-Crisis and Have Shrunk Since

Commercial Paper and Bankers Acceptances Outstanding ($trn)



Source: Federal Reserve Flow-of-Funds, Barclays Research.

Investors Now Appear To Be Seeking Liquidity in Mutual Funds and ETFs

Evidence suggests that investors have settled on fixed income mutual funds and ETFs as stores of liquidity. These funds offer daily liquidity such that investors can, in principle, redeem their money as quickly as in a money market fund. The influx into these types of funds has been heavy. Since 2009, taxable bond funds have received a massive $1.2trn in inflows, excluding the effect of significant market appreciation. Investment grade corporate funds have been the biggest beneficiaries (+$588bn), followed by flexible funds that can typically roam freely across the credit spectrum (+$311bn) and high yield funds (+$70bn), according to Lipper data (*Figure 17*).

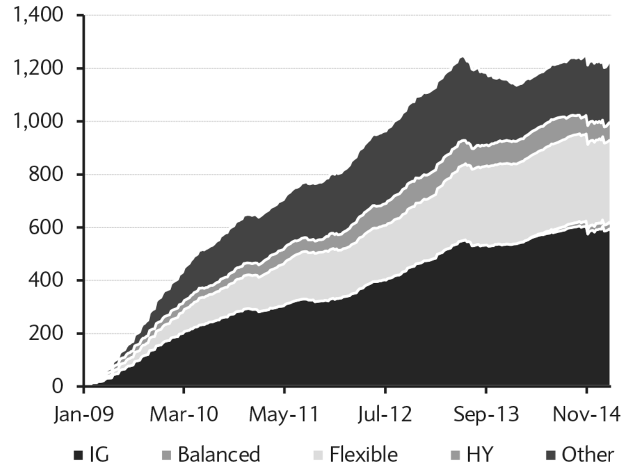
Similarly, ETFs are growing rapidly in fixed income. For example, although virtually nonexistent before the crisis, credit ETFs have grown to account for *c.*2.5% of the investment grade corporate debt market and nearly 3% of the high yield corporate market (*Figure 18*).

Despite their passive nature and management fees, ETFs appear to be gaining traction not only for retail end users and hedge funds, but also among institutional investors. In effect, ETFs are being used not only by end investors looking for instruments with daily liquidity, but also by mutual funds seeking to mitigate the differences between the liquidity their investors expect *versus* the (poor) liquidity available in the underlying bonds. ETFs function as a trading vehicle, aided by their increasing liquidity, such that portfolio managers can meet daily inflows and redemptions without actually needing to trade bonds.[7]

[7] *Institutional Investors Turning to Fixed-Income ETFs in Evolving Bond Market,* Greenwich Associates, 2014.

Figure 17

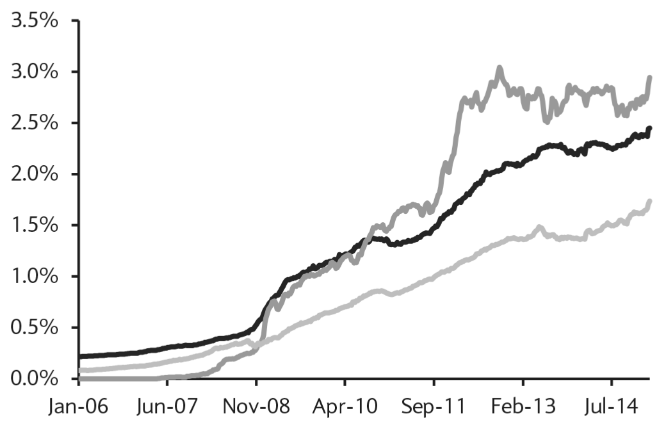
Cumulative Retail Flows By Fixed Income Asset Class ($bn)



Source: Lipper.

Figure 18

ETFs Have Gained a Significant Foothold in the Management of Fixed Income Assets



Source: Lipper, Barclays Research.

Investors are increasingly using the ultra-liquid CDX indices to satisfy their daily liquidity needs . . .

Similarly, portfolio managers have increased their trading in other related products. For example, investors are increasingly using the ultra-liquid CDX indices to satisfy their daily liquidity needs. In the high yield market, where the on-the-run CDX index trades nearly as much as all TRACE bonds combined, the correlation between large fund flow events and positioning data shows that portfolio managers use the derivatives index as a source of liquidity in periods of high fund flow volatility (*Figure 19*).

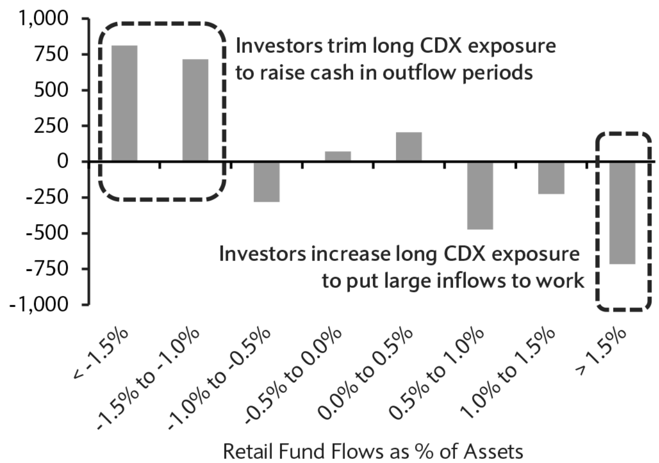
However, these alternative sources of liquidity come at a cost, even if such cost is not immediately apparent in bid-offer prices. With CDX, the price of liquidity comes in the form of basis risk, which can be very significant in times of market stress (*Figure 20*). This risk comes as a result of mismatches in rates exposure (CDX has virtually none) and differing credit exposure, among other potential mismatches. With the ETFs, the costs include non-trivial management fees and a market that can dislocate significantly from its underlying asset value. Holding more cash to fund potential liquidity events is an alternative whose risks are better understood, but the consequent performance drag can make this the least appealing option to managers.

The increased use of these tools to manage the disparity between the provision of daily liquidity to end-investors and poor liquidity in the underlying fixed income assets is itself evidence of the tension that the influx into mutual funds has caused. Fund managers have found that they need to use these tools already, in relatively calm markets. In the event of a market disruption, these tools may no longer be effective—if outflows exceed the extent to which fund managers have built in flexibility to meet them, they would have no choice but to turn to the underlying markets to meet their liquidity needs. This could become self-perpetuating if the corresponding price declines in the underlying led to further outflows.

Thus, regulations aimed at bolstering stability at the core of the financial system, combined with a growing demand for liquidity, may eventually lead to increased instability and fire-sale risk in the periphery (*e.g.,* the secondary markets for investment grade, high yield, leveraged loans, and emerging markets). The fragile new equilibrium comes not only from the reduced tradability of these asset classes, but also from deep liquidity mismatches between the assets themselves and the instruments being used to manage daily liquidity needs.

Figure 19

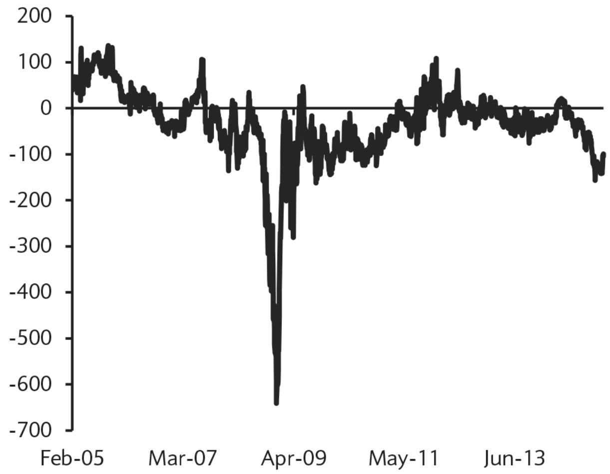
Changes in Investor Positioning in HYCDX (OTR) Are Consistent With Liquidity Needs ($mn)



Source: DTCC, EPFR, Barclays Research.

Figure 20

Basis Between the HYCDX Index and the Barclays U.S. High Yield Very Liquid Index (bp)



Source: Barclays Research.

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SUBMITTED REPORTS BY CHRISTOPHER S. EDMONDS, SENIOR VICE PRESIDENT, FINANCIAL MARKETS, INTERCONTINENTALEXCHANGE, INC.

Barclays

Repo Reform

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Interest Rates Research

U.S. Money Markets

12 March 2015

This is an excerpt from *Regulatory reform: Repo-cussions,* (*https://live.barcap.com/go/publications/content?contentPubID=FC2120226*) March 12, 2015.

Following up on an article prepared for the *Equity Gilt Study 2015,* (*https://live.barcap.com/go/publications/content?contentPubID=FC2115179*) we take a closer look at how recent bank reforms have changed the size, scope, and nature of the $2.5trn repo market. We also explore how these challenges are likely to intensify in coming years.

- **The effect of tougher bank regulation on the repo market extends beyond trading volumes.**
- **Capital requirements appear to have the most significant effect on repo volumes. Net stable funding requirements will amplify the effect.**
- **As regulatory deadlines approach, we expect these mix and volume effects to intensify. Non-Fed tri-party repo may contract 20% in the next year or so.**

While further volume reduction and collateral shifts will likely produce market "winners" and "losers," they will also spur market changes and alter the way banks and dealers think about the business.

Evidence of Regulatory Effects

In regulators' minds, the behavior of the repo market during the financial crisis as it helped to spread contagion and amplified systemic risk makes it a prime target for reforming. Nearly every post-crisis financial industry reform has in some way zeroed in on repo activity. *In The decline in financial market liquidity,* (*https://live.barcap.com/go/publications/content?contentPubID=FC2115196*) we detail several of these new regulations.

Among the ones with the most direct consequence for the market are leverage ratios (including supplemental capital buffers), net stable funding requirements, and the liquidity coverage ratio. And although QE and the RRP account for some of the post-crisis decline in repo trading volumes, we expect regulatory pressures to begin taking a more prominent role in the market this year. Below, we present some key regulations and how they have begun to influence behavior in the repo market.

Leverage Ratio

> *The leverage ratio has probably had the most significant regulatory effect on repo . . .*

Perhaps the most significant regulatory change affecting the repo market since the crisis has been the leverage ratio. Since leverage is calculated off of total assets rather than risk-weighted assets, low-risk (and consequently, low-return) activities that consume a large portion of bank balance sheets have become far less attractive. Repo—and, more generally, running a match book—is the poster child for a low return balance sheet-intensive business. As we detailed in *Leverage Ratio—An Attack on Repo?* (*https://live.barcap.com/go/publications/content?contentPubID=FC1953529*) (August 2, 2013), this has led banks to reconsider how they operate in the repo market. Although obscured by the Fed's programs, accounting rule changes, and efforts to strengthen their balance sheets, we suspect the tightening of balance sheet flexibility caused by the leverage ratio has led to three specific post-crisis changes.

> *. . . producing sharp, recurrent plunges in volume . . .*

First, although banks and dealers have always shrunk their balance sheets on quarter-ends, "window dressing" seems to have intensified since 2012. The short-term nature of repo—on both the asset and liability sides of a bank's balance sheet—makes it an ideal candidate for end-of-period balance sheet adjustment. This makes it easy to switch on and off—curtailing balances as quarter-end approaches and then ramping them up again once the reporting period has passed. Indeed, this "on/off" propensity is most evidence in data on money fund repo holdings, as money funds provide about ⅓ of the cash in the repo market. Not only has their overall level of non-Fed repo declined over time, but their repo holdings plunge an average of 13% in the final month of a quarter—and quickly recover (*Figure 1*). In 2014, the average quarter-end decline was 17%, compared with 10% in 2013. These declines and their clockwork repetitiveness point to intensifying bank and dealer balance sheet rationing.

. . . and a reduced willingness to intermediate between smaller dealers and cash providers . . .

Second, there is also evidence of balance sheet rationing in other areas of the repo market, such as the inter-dealer GCF market. Higher capital requirements have reduced the incentive for larger dealers to "supplement" their pool of repo collateral by reversing in Treasuries (lending cash) in the inter-dealer GCF market to then pass this collateral on to money funds. Volumes in the GCF market are falling (*Figure 2*). Larger dealers have traditionally been able to take advantage of an arb in the GCF market that reflects the fact that smaller or weaker institutions may be unable to raise cash directly from money funds and the GSEs. Instead, the larger dealer acts as an intermediary—effectively renting its balance sheet—exchanging cash and collateral between the smaller dealers and cash providers. Larger banks appear increasingly reluctant to expand their balance sheets through these types of trades and have begun demanding wider spreads.

In addition to the volume effect, we look at the spread widening in GCF repo rates compared with the rates that money funds earn on their repo holdings (recall that their repo collateral is provided by stronger and generally larger banks).[1] This spread has averaged 6bp since late 2011, although late last year, as balance sheet pressures intensified, the spread widened to 18bp.

Net Stable Funding

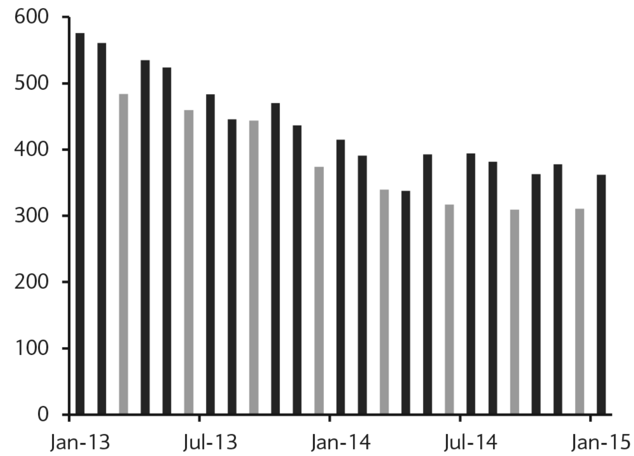
Leverage ratios are not the only reason for banks to reduce their repo footprint or widen spreads. Recall that large institutions are subject to net stable funding requirements (NSFR) under Basel III. At its simplest, the NSFR compares the asset and liability sides of a bank balance sheet assuming normal, business-as-usual conditions, to judge the risk of the institution's funding model. The NSFR compares the amount of available stable funding (based on the bank's liability mix) with the amount of required funding that regulators judge the bank should have given the composition of its assets.

Most repo and other forms of wholesale funding are not considered available stable funding sources because of their short tenors (generally under 1 year) and their behavior during the financial crisis. Moreover, *who* provides the funding is almost as important as its type. Generally, regardless of the type and tenor of the funding they provide to banks, *most* cash lent from money funds generally adds nothing to a bank's stock of available stable funding. This, along with the leverage ratio, may be contributing to the decline in (non-Fed) money fund repo holdings. While capital and leverage effects may already be pushing large banks and dealers to reduce and re-price their repo activity, the NSFR will add additional pressure as these institutions move to get compliant before 2018.

[1] Since detailed industry-wide money fund rates are available only at month-end, we are comparing market rates at a time of month when dealer balance sheet is particularly scarce and, correspondingly, money market repo rates are low.

Figure 1

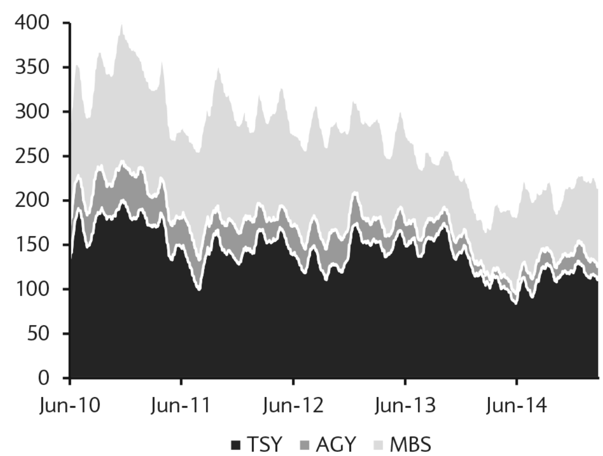
Money Fund Repo Holdings ($bn)



Note: Excludes repo from the Fed's RRP program.
Source: Crane's Data, Barclays Research.

Figure 2

GCF Repo Volume ($bn)



Note: 20 day average. Source: DTCC.

Shifting Collateral Mix

The collateral mix is shifting toward non-government securities . . .

Declining repo volumes and GCF repo spread widening, however, are not the only manifestations of regulatory pressure on the repo market. In addition, the mix of collateral in the tri-party market seems to be shifting away from government securities: Treasuries, agencies, and MBS. With RRP collateral netted out, government-only collateral has shrunk to 70% of tri-party repo outstanding, down from nearly 80% in December 2012. Moreover, the amount of non-government financed collateral has increased 10% since December 2012 and is roughly the same volume as in late 2010.

Although there has been growth in other types of securities, such as structured products and corporate bonds, the primary driver of the non-government collateral share increase has been equities (*Figure 3*). Pledged equity collateral has risen 50% since December 2012 and has grown to 10% of the private sector (that is, non-RRP) tri-party repo market. The $160bn in pledged equities now accounts for about $1 of each $3 in non-government collateral.

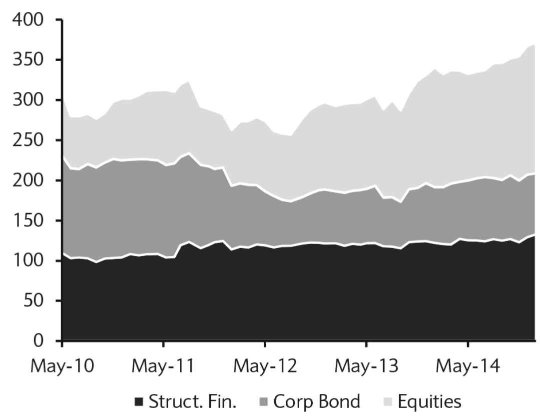
Our sense is that the liquidity coverage ratio (LCR) may be encouraging banks to swap equity collateral for Treasuries given the different haircuts regulators apply to holdings of high-quality liquid assets. Recall that Treasuries have no haircut or discount in the numerator of the LCR. By contrast, the haircut applied to equities used as HQLA is 50%. Given this differential, as well as the traditional role that repo markets play in collateral substitution, banks may be more willing to repo out their equity holdings while simultaneously reversing in Treasuries to be applied to the bank's HQLA.

The Future of Repo

In addition to increasing regulatory pressures, the repo market faces a number of other cross-currents. While it is difficult to identify and quantify all these forces, we outline some of the more important ones below.

Figure 3

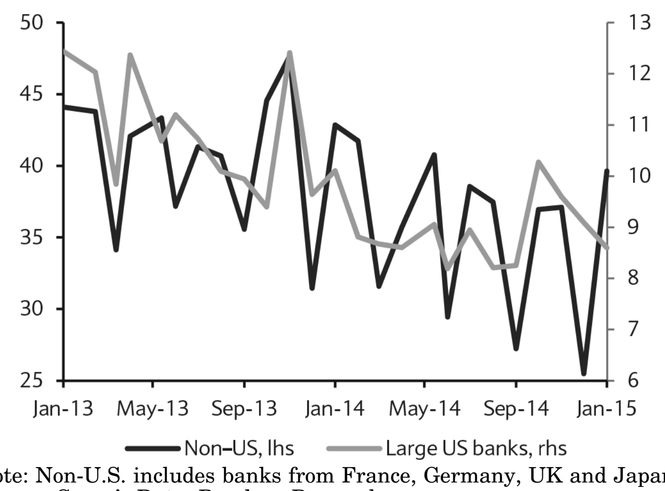
Non-Government Collateral Mix ($bn)



Source: Federal Reserve.

Figure 4

Money Fund Repo Holdings by Region ($bn)



Note: Non-U.S. includes banks from France, Germany, UK and Japan.
Source: Crane's Data, Barclays Research.

Regulation—and more specifically, the tightening of dealer balance sheets—points to further reduction in repo volumes. But banks are at different stages in their adjustments to regulation. Generally, U.S. institutions are further along in adapting to a new world of leverage limits and net stable funding and liquidity requirements than their European colleagues. This is most apparent in the intra-quarterly pattern of repo activity, which largely reflects the fact that many (non-U.S.) institutions have yet to migrate to quarterly average balance sheet reporting (*Figure 4*). The Basel Committee on Bank Supervision, however, recommends that all banks move to calculating their leverage ratios based on quarterly averages within the next few years.

Repo volumes could fall another 20% . . .

Since the intra-quarterly pattern—and, most importantly, the size of these quarter-end declines in primary dealer repo activity—is a direct consequence of balance sheet reporting, we reckon that it can provide useful insight on the future size of the repo market once all banks are required to report leverage on a quarterly average basis. We expect this to flatten out the calendar peaks and troughs in repo. But it effectively means that every day will be a quarter-end, so while the provision of repo from large global banks may become more constant and predictable, there will be less of it. Based on the current peak-to-quarter-end declines, we see Treasury repo volumes falling another 20% from their current level. However, whether this decline will be concentrated in 2015 or spread out over the next few years as global banks move into Basel compliance is unclear.

Smaller Is Better, But Less Speculative Is Best

If asked, most regulators would probably feel more comfortable with a smaller repo market. But while an additional 20% reduction—on top of the 50% reduction since 2008—will likely further reduce systemic risk, it is not clear how much safer the market will become. More important, we doubt that regulators are targeting a specific size for the repo market—say, based on the volume of cash trading. Instead, our sense is that they are more interested in changing market behavior—reducing the propensity for investors to run, cause asset fire sales, or increase leverage in the shadow banking sector.

More than reducing size, regulators probably seek to change behavior in repo . . .

Along these lines, regulators probably have two goals in mind: to shift much of repo trading back to its former infrastructure role while moving more volume onto centrally cleared platforms. Prior to 2005, dealer repo businesses were structured primarily to finance firms' holdings of securities, along with a limited role in providing customer leverage. But, by 2006, repo trading became more speculative, with more emphasis on large trading volumes involving extensive maturity and collateral transformation. Returning repo to its former role, however, could entail significant externalities. For example, the reduction in repo volumes will change the capacity of banks and dealers to act as intermediaries between securities buyers and sellers. And, as we outline in the *Equity Gilt Study 2015,* (*https://live.barcap.com/go/publications/content?contentPubID=FC2115179*) this has implications for market liquidity.

Revenge of the Plumbing

Most people pay little attention to plumbing, provided it works properly. The repo market has long been considered a dull part of the financial market plumbing, largely overlooked by many until it stops working, as it did during the financial crisis. However, just as plumbing attracts considerable focus when the taps run dry (or otherwise), this mundane market is about to get significantly more attention. Regulatory reform is likely to shrink the market further and reduce the role of banks and dealers as intermediaries in the exchange of collateral and cash. Similarly, balance sheet scarcity is likely to lead to further spread widening with clear winners (banks) and losers (long-only investors who cannot net trades). At the same time, the Fed's efforts to put a floor under short-term interest rates is likely to increase the central bank's presence in the repo market despite its discomfort with the RRP program.

Stay tuned.

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Barclays

Central Clearing and the Repo Market

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Interest Rates Research

U.S. Money Markets

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Balance sheet reporting pressures are intensifying and have reduced liquidity in the market for Treasury collateral. An expansion of the current GCF framework or the development of a new centrally cleared repo product might significantly improve liquidity.

- **In a central counterparty (CCP), the central agent is the buyer to every seller and the seller for every buyer. In effect, the agent is counterparty to every repo transaction.**
- **In addition to balance sheet netting capacity, a repo CCP would set collateral eligibility requirements and determine minimum haircuts while increasing market transparency. The CCP structure also minimizes post-default asset fire sales.**
- **Although generally supportive, Fed officials have recently expressed concern about the ability of CCPs to withstand shocks.**

We think the current GCF framework will eventually be expanded to include limited "buy side" participation, but this is likely to take several years and much regulatory scrutiny.

Signs of Repo Illiquidity

Another month-end has come and gone. And although repo rates did not become as disjointed as at the end of March, the market is clearly showing signs of strain. In particular, rates on Treasury collateral are trading considerably above the Fed's overnight RRP rate while program usage is above its long-term average on the last day of the month. The strain also shows up as a widening of the spread between the rate money funds earn on their Treasury repo and what lower-rated or smaller banks pay to borrow cash against Treasuries (*Figure 1*).

Moreover, based on foreign bank cash holdings, this tendency for banks to step away from the repo market at quarter-ends appears to have intensified since 2012. However, as all banks move to daily average balance sheet reporting, these seasonal dips in repo availability will eventually be smoothed out, with every day effectively a quarter-end. We expect this to lead to a permanent gap between where some large, highly rated banks raise cash and where their smaller, lower-rated counterparties are able to borrow against Treasury collateral. Moreover, we expect volume in the Treasury repo market to be at least 20% smaller.[1]

Not All Repo Is Equal

The balance sheet wedge reflects a shortage of collateral from the top-tier banks . . .

Essentially, this balance sheet wedge at the largest banks, which is driving spreads wider and keeping RRP usage high, partly reflects the fact that even in the overnight market for borrowed cash collateralized with Treasuries there is still an element of counterparty risk. Counterparty risk is influenced by the cash lender's assessment of the borrower's default probability and the resulting likelihood that he/she will need to liquidate collateral to get his/her cash back.[2] As a result, and also because of counterparty ratings restrictions, money funds and some other cash lenders are able to lend only to top-tier banks. Smaller institutions or those with lower credit ratings are able access cash from these lenders only through the *intermediation* of a larger, more highly rated bank. But since this intermediation boosts the larger bank's balance sheet and increases its leverage ratio, these institutions are reluctant to trade, creating the balance sheet wedge in the market. As a result, the larger banks step away from the repo market on key reporting dates, including quarter-ends.[3]

In the absence of counterparty credit issues (or balance sheet limits), our sense is that the repo market would adjust: as collateral flows from the largest institutions retreat, those flows from the smaller institutions might rise to make up the difference. In effect, the current decline in repo volume and the widening in the spread between those banks with access to money fund cash and those without is a "locational shortage"—the largest, capital-constrained banks are not providing enough repo to meet market demand from money funds who cannot find replacement supply since repo from smaller, lower rated banks is not a substitute.

In an ideal world, this locational shortage would be arbed away if the smaller banks could borrow *directly* from the same lenders as the largest institutions without having to rely on the larger banks to act as intermediaries. Another solution would be to increase the balance sheet capacity of the largest banks—expanding their ability to act as repo market intermediaries—through the creation of a repo CCP.[4]

CCP Basics

The CCP is the counterparty to every transaction . . .

At the most basic level, the CCP is a network in which the central agent is the buyer to every seller and the seller to every buyer. The central agent is thus the counterparty to every transaction—and, correspondingly, each member's credit exposure is to the CCP rather than to the party on the other side of the transaction. Members are required to contribute to the CCP's guarantee fund and the CCP is capitalized. Members must also post an initial margin on their trades. This is meant to protect the CCP from losses associated with having to find other members willing to take over a defaulting dealer's trades or to liquidate those trades outright. The size of the initial margin should, in theory, cover the potential risk to the CCP that it might not be able to immediately liquidate or transfer a defaulting dealer's trades.

In the event that a member defaults, there is a mandated loss waterfall. Initially, losses are absorbed by the defaulting dealer's margin on the trade. If this is insufficient, losses move to the defaulting dealer's guarantee fund and, if this, too, is insufficient, the CCP's capital is charged. Beyond this point, the remaining members of

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[1] See, *Regulatory reform: Repo-cussions,* (*https://live.barcap.com/go/publications/content?contentPubID=FC2120226*) March 12, 2015.

[2] Repo is bankruptcy remote—the collateral can be liquidated immediately without having to wait for a judge's decision. Some lenders are not legally able to own the underlying collateral or they don't have the expertise to sell it.

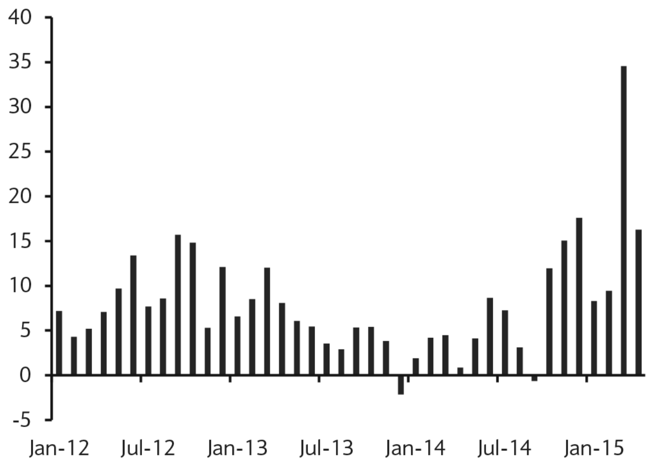
[3] See, *Repo and fed funds inversion,* April 9, 2015.

[4] Another solution, which we leave for a later date, would be a relaxation on counterparty credit requirements on rated money funds. It can reasonably be argued that counterparty credit restrictions applied to overnight Treasury repo transactions are extreme and all rated funds should be able to "look through" to the underlying collateral.

the CCP face charges to their own guarantee funds (loss mutualization). The CCP's ability to absorb losses in this waterfall is based on a balanced mixture of pre-funded resources from participating members as well as pre-determined "cash calls" that are triggered under certain conditions.

Figure 1

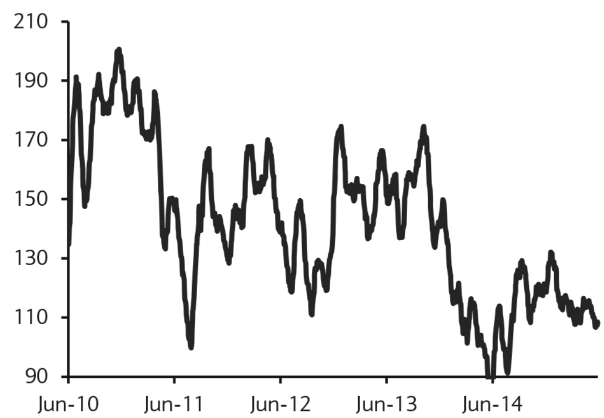
TSY GC Less TSY Repo Rate Earned by MMFs (bp)



Note: Weighted average rate on money fund Treasury repo at month-end. Source: DTCC, Crane's Data.

Figure 2

Treasury GCF Repo Volume ($bn)



Note: 20d average. Source: DTCC.

General Benefits

There are several generalized benefits to the CCP structure. First, members are insulated against another member's default.[5] Second, the CCP establishes eligibility and other membership requirements which, in the case of repo, could include the type of collateral that can be traded on the platform as well as the corresponding haircuts. Moreover, since members are subject to loss mutualization, they all have a strong incentive to see that these standards are rigidly maintained.

[5] Assuming the CCP has collected sufficient initial margin and the defaulter has a sufficiently deep guarantee fund.

Most important, in today's world of constrained balance sheets, the CCP increases market efficiency via netting. Since all transactions are with the *same* counterparty, longs and shorts can be netted. Recall that, under existing accounting rules, repo balance sheet netting outside the CCP requires that trades have the same counterparty, same maturity date and be of the same collateral type. Unsurprisingly, given these accounting limits, trade coordination across multiple customers is much more difficult outside the CCP.

The CCP returns cash to the lender in the event of a member default . . .

Additionally, in the event of a member default, lenders receive cash rather than the underlying collateral as they would in a standard (uncleared) repo trade. The CCP agent either transfers the defaulting dealer's transaction to another CCP member willing to take over the trade or the CCP liquidates it. In theory, and depending on the strength of the CCP, this should prevent post-default asset fire sales. Unsurprisingly given these benefits, and particularly given the intense balance sheet pressure in the repo market, there is strong support for a repo CCP.

Magic Balance Sheet Bullet

Of course, there already exists a repo CCP—the GCF interdealer market. The GCF repo market is a blind, brokered market, sponsored by DTCC, where Treasury, Agency, and MBS collateral is traded. In this market, roughly $115bn/day in Treasury collateral is traded. This market is made up of dealers as legal restrictions on money funds and their capacity to participate in loss mutualization schemes prohibits their participation.

GCF could be expanded to include limited RIC participation . . .

However, last October, the DTCC submitted a proposal to the SEC to expand this market to include members from the buy-side ("registered investment companies or RICs") in a limited capacity. Technically, they and the current GCF membership would participate in a new program called "institutional tri-party." In this program, a member can be either a cash lender or a cash borrower; the RICs would always be cash lenders. Cash lenders in "institutional tri-party" would have different membership status than dealers who borrow cash. Their "membership-lite" status is justified by the fact that the RICs do not pose the same credit risk to the platform as, say, a dealer, who could default while owing money to the other members.

Our understanding is that a typical trade between a RIC and a dealer would be similar to current bilateral arrangements. RIC A and dealer X would agree to exchange cash and collateral at a fixed rate for a set term. But both would agree to novate the trade to the GCF. Although RICs would not face loss mutualization in the event of a member default (and would receive cash instead of the underlying collateral), it is still possible for the RIC to experience a loss. For example, if dealer X defaults on a repo with RIC A, the latter might face a loss if the margin it collects on the transaction is insufficient.

Although the repo is novated by the GCF, the RIC still faces counterparty risk—and, importantly, these risk-averse cash lenders are likely to limit their loans to the largest banks and dealers. Consequently, we do not expect that an expansion in GCF membership will necessarily increase smaller dealers' ability to raise repo funding at lower rates.

GCF dealers could expand their balance sheet capacity by netting more transactions . . .

However, expanding GCF membership could boost the balance sheet capacity of the larger banks and dealers. Bilateral trades with RICs that previously consumed balance sheet could now be moved (novated) to the GCF. And these transactions could be netted against the large bank/dealer's collateral borrowings on the platform. In effect, the more that dealers can net down via this shift, the more trading capacity they can create for themselves.

. . . and RICs could earn more from lending their cash in repo . . .

All else equal, we would expect this to boost the return that RICs earn from lending their cash. But, as noted above, RICs are likely to remain fairly risk averse, so they might continue to avoid lending to smaller dealers and lower-rated institutions on GCF. Thus, although the balance sheet premium illustrated in *Figure 1* might narrow, smaller dealers' funding costs might not change at all. Of course, increasing the scope for netting could increase trading volume on the GCF market, which has been falling for several years (*Figure 2*).

GCF expansion is not the only current repo market proposal. Others include the creation of cleared repo on an exchange. Clearinghouse operators CME and

LCH.Clearnet Group are working on proposals, but no details have been released yet.[6]

CCP Conundrum

The most efficient CCP structure is large, with many members across different assets . . .

A CCP for repo, however, creates a conundrum for regulators. On the one hand, it reduces counterparty risk, increases market transparency and establishes strict trading and membership guidelines. On the other, some regulators worry that these platforms could themselves become "too big to fail".

Recent academic work notes that the most efficient CCP structure is one that has many participating members, accounts for a large share of market volume, and, ideally, spans multiple asset classes.[7] But a single, enormous multi-asset CCP that, for example, clears repo, as well as interest rate and credit derivatives might create a substantial concentration risk. Within the CCP, regulators worry about membership concentration and the risk that default by a single, large member could overwhelm the CCP and bring the whole platform down.[8] Capponi, *et al.,* illustrate the risks of membership concentration by examining a model where an increasingly concentrated banking industry uses CCPs to hedge loan book risks.

CCPs need to collect sufficient initial margin . . .

The alternative—of several loosely connected CCPs with largely the same membership—might also pose some risk. Glasserman, *et al.,* focus on liquidity risks to the CCPs arising from uncoordinated initial margin requirements across multiple CCPs.[9] Recall that the CCP collects initial margin to cover the cost of finding another member to take over a defaulting dealer's trades or for the CCP to liquidate them. Because the liquidity cost increases more than proportionally with the size of the transaction, it is possible for the CCP to under-collect initial margin. This under-collection risk is compounded by the fact that CCP members have an incentive to minimize their transaction costs by shopping around for the platform with the lowest margin costs and spreading their transactions over multiple platforms, where possible. Naturally, those platforms with the lowest margins will attract a bigger share of total trading volumes. Thus, at any point, a CCP could be under-collecting initial margin, leaving it and its participating members more exposed to a member default. In addition, a single member defaulting across multiple CCPs could trigger asset fire sales—similar to the post-default fire sales in the bilateral (uncleared) repo market.

Repo-Centric Risk

Although this issue has not been studied academically, we wonder about risks specific to a repo-centric CCP. Ahead of each of the recent debt ceiling crises, activity in the Treasury GCF market dried up and rates shot up. Cash lenders stepped away from the market, fearful that they could receive "payment-delayed" collateral as they had no way to prevent this collateral from being pledged to them in the GCF market. Operationally, this might be solved by enabling lenders in the GCF market to exclude certain CUSIPs. But, given the similarity in risk tolerance and asset allocation across RICs, it is possible to imagine other, non-debt ceiling-scenarios where these members pull back *en masse* from providing cash to the repo market.

Adding RICs to GCF might reduce repo volume and rate spikes at quarter-ends . . .

More generally, as larger banks continue to step away from their role as principal cash providers in the GCF market, (GCF) repo market dynamics could change in unpredictable ways. First, since the RICs are not governed by the balance sheet reporting issues as the capital-constrained large banks, their lending of cash into this market should theoretically be more stable and not prone to the sharp—but predictable—quarter-end contractions that frequently shrink trading volume by more than 15% and push funding rates sharply higher. As a result, adding RICs to GCF could remove some of the spikiness in repo rates.

[6] See, "Large Banks Backing New Safeguards in Short-term Lending Markets", K. Burne, October 9, 2014.
[7] See "Does a Central Clearing Counterparty Reduce Counterparty Risk?", D. Duffie and H. Zhu, Stanford University, July 2010.
[8] See, "Systemic Risk: The Dynamics under Central Clearing", A. Capponi, W.A. Cheng, S. Rajan, Office of Financial Research, U.S. Treasury May 7, 2015.
[9] See, "Hidden Illiquidity with Multiple Central Counterparties", P. Glasserman, C. Moallemi, K. Yuan, Office of Financial Research, U.S. Treasury, May 7, 2015.

Federal Reserve Reservations

Regulators generally support the creation of repo CCPs . . .

Financial regulators have long favored the creation of central clearing in the repo market—at least since the formation of the Tri-party Repo Reform Task Force in 2009. More recently, Fed Governor Powell observed that "central clearing holds the promise of enhancing financial stability through the netting of counterparty risks, creating greater transparency, and applying stronger and more consistent risk-management practices."[10] However, in the same speech, he expressed concern about designing CCPs to be strong enough to sustain a significant financial shock, including a simultaneous default by multiple members.

Earlier this year, Fed Governor Daniel Tarullo was more explicit in voicing his concerns about CCPs, noting for example that "more attention must be paid" to some of the assumptions underlying the structure of CCPs.[11] Although systemically important CCPs are required to hold sufficient funds to cover defaults by their two largest members, it is not clear if this "coverage ratio" would be adequate in a financial crisis. Of course, like other precautionary liquidity buffers it is unclear a priori what the optimal size is. More significantly, CCPs assume that they can draw liquidity from their members, but during a systemic shock, their members might also be suffering redemptions and liquidity withdrawals, reducing their capacity to support the CCP. Dodd-Frank gives systemically important financial market utilities access to the Fed's discount window, but it is not clear how the Fed might interpret this with respect to, say, an expanded GCF market.

The DTCC recently published a study on the mechanics of strengthening CCPs' loss absorption capacity.[12] Although the DTCC supports regular stress-testing, it notes that given the various products traded on these platforms these stress tests may need to be customized for each platform. Similarly, they note that this loss absorption capacity should be sized (with pre-funded member contributions and future cash calls) to an "extreme event". We suspect, however, that defining an "extreme event" will be difficult.

We expect the structure and mechanics of stress testing a repo CCP will be debated for some time. And although we expect that the GCF market will ultimately be expanded, it will likely face tough regulatory scrutiny from the Fed.

Analyst Certification:

I, Joseph Abate, hereby certify (1) that the views expressed in this research report accurately reflect my personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of my compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

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[10] See, "Financial Institutions, Financial Markets, and Financial Stability", J. Powell, NYU, February 18, 2015.

[11] See, "Advancing Macro-prudential Policy Objectives", D. Tarullo, Office of Financial Research, January 30, 2015.

[12] See, "CCP Resiliency and Resources", DTCC, June 1, 2015.

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