UNITED STATES OF AMERICA

COMMODITY FUTURES TRADING COMMISSION

MARKET RISK ADVISORY COMMITTEE MEETING

Washington, D.C.

Tuesday, April 25, 2017

PARTICIPANTS:

Commissioners:

ACTING CHAIRMAN J. CHRISTOPHER GIANCARLO

COMMISSIONER PETAL WALKER

COMMISSIONER SHARON Y. BOWEN

Other Participants:

SUSAN O'FLYNN (Morgan Stanley)

DENNIS McLAUGHLIN (LCH Clearnet)

JOHN NIXON (NEX)

STEVE CHABINSKY (White & Chase)

JOHN LAWTON (DCR Acting Director, CFTC)

SAYEE SRINIVASAN (Chief Economist, CFTC)

KARL SCHIMMECK (Morgan Stanley)

ROBERT WASSERMAN (DCR Chief Counsel, CFTC)

SCOTT MIXON (OCE Associate Director, CFTC)

GIL VEGA (CME Group)

KATE MEYER (Risk Analyst, DCR)

NHAN NGUYEN (DMO Special Counsel, CFTC)

ANAT ADMATI (Better Markets)

BISWARUP CHATTERJEE (Citigroup)

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JERRY JESKE (Commodity Markets Council)

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P R O C E E D I N G S

(10:01 a.m.)

MS. WALKER: Good morning. As the MRAC designated federal officer, it is my pleasure to call this meeting to order. Before we begin this morning's panels, I would like to turn to Commissioner Sharon Bowen, the MRAC sponsor, for the welcome. Acting Chairman Giancarlo and Commissioner Bowen will then give their opening remarks.

COMMISSIONER BOWEN: Good morning, everyone. I'm going to try to keep us on schedule. It's a pretty long agenda this morning, so I'm going to turn it over to the Acting Chairman.

CHAIRMAN GIANCARLO: Thank you, Commissioner Bowen. Thank you all for being here today, coming to

drizzly Washington for three hours of your very important, very valuable time.

Today's meeting has three of the most important ingredients I think for a great meeting.

It has a really terrific and well-prepared agenda, compliments to Commissioner Bowen and her team. It has a great program, important topics to discuss, and then, most importantly, it has really great participants -- all of you who have put in the time to be prepared for this presentation today. So, thank you all for coming, and I'll hand it back to Commissioner Bowen.

COMMISSIONER BOWEN: Great. It's a great pleasure to welcome you guys here to our first meeting of the Market Risk Advisory Committee of 2017.

I would first like to thank Acting Chairman Giancarlo for being here today and for his longstanding support for the work of this committee. Acting Chairman Giancarlo and I were confirmed together, and we've always worked well together. So, I look forward to continuing in our shared endeavor to provide for a safer, stronger financial system for the American people.

Thank you as well to the staffs of the Office of the Chief Economist, the Division of

Clearing and Risk Management, and the Division of Market Oversight for providing technical support for this meeting.

And last but not least, thank you to the logistical staff who worked behind the scenes to put everything together today.

Before turning to today's meeting, I have the happy task of welcoming three new members. I never tire of praising this committee, which has worked with passionate diligence to provide excellent advice and insight. I'm confident that these three new members, who are well known and respected in the industry, will only augment the effectiveness of our committee. They are Biz Chatterjee, Global Head of Electronics Trading and New Business Development and Credit Market, Citigroup; Dale Michaels, Executive Vice President of Financial Risk Management at the Options Clearing Corporation; and Marnie Rosenberg, Global Head of Clearing House Risk and Strategy at J.P. Morgan.

Welcome, Biz, Dale, and Marnie. Now,

turning to today's topics, I'm greatly looking forward to our first panel, in which DCR staff will discuss their reaction to the MRAC's CCP risk management recommendations that were voted on last November. I personally believe that these are incredibly helpful recommendations, and I want to thank the members of the committee who worked so hard in developing and preparing these recommendations.

I've heard that market participants have similarly found these recommendations to be helpful, and given the importance that CCPs play in our markets, it is imperative that we stay ever vigilant on CCP risk management. Thus, I look forward to the staff's presentation.

I think our other two topics -- Cybersecurity and the Evolving Market Structure -- are also of great importance. In fact cybersecurity is probably the most important market risk issue of our decade. I look forward to hearing from our experienced panel on the current trends in this ever-changing threat to our markets.

Now, I'm eager to get market intelligence from our MRAC members on our last panel. It's become an MRAC tradition to start the year by first looking at the state of the market. Our diverse markets are changing at such a rapid pace that it is invaluable to hear about that evolution, and in fact sometimes revolution, from a broad cross-section of market participants. It really informs our oversight as an agency. To that end, this panel will focus on how well our derivatives markets are functioning, including discussions on volatility, liquidity, the impact of the leverage ratio, the repo market, and the impact of rising interest rates.

I think this will prove to be one of the most substantive and informative meetings yet, which is a very high bar to set. So, thank you all, and with that I'll now turn over the proceedings to our designated federal officer, Petal Walker.

MS. WALKER: Thank you for your opening

remarks. As noted in today's agenda, our first panel

discussion will be on the staff response to the CCP Risk Management Subcommittee's recommendations for CCP default management. I would like to introduce Ms. Susan O'Flynn, Managing Director and Global Head of CCP Strategy, Governance and Optimization at Morgan Stanley, who will facilitate and help shape the discussions during this first panel.

Ms. O'Flynn: Good morning. Firstly, thanks to Commissioner Bowen for sponsoring the MRAC and getting this group -- the same group together. And also welcome to our new members. Also, thanks to Commissioner Giancarlo for being here today and presiding over the proceedings. And last but definitely not least, thanks to Petal Walker for working tirelessly to get us to where we are today.

We, the industry participants, look forward to hearing the CFTC's responses to our recommendations on CCP default management and the roles and the responsibilities that market participants, from both a client and clearing member perspective, may play in the future.

The timing of today's meeting is very interesting. Yesterday we saw the commencement of the largest coordination drill globally from both a product scope -- rates, FX, repo and listed derivatives, among others -- and number of CCPs involved -- LCH, Eurex, and CME -- that I have seen in the last several years at a time of increased market volumes and potential volatility following Sunday's votes in France. This clearly addresses and acknowledges some of the final recommendations and will test both CCPs and market participants' capacity in a more realistic environment -- maybe one for the next MRAC for review.

With that, I'm going to hand it over to Kate, Bob, and John for their responses.

Just from a logistical perspective, Kate, Bob, and John will speak for roughly 10 minutes. There will be a Q&A session afterwards.

If you would like to speak, raise your card, and press the button to speak.

With that, I turn it over to Kate Myer, who's going to make the introductions. Thank you.

MS. MEYER: Thank you. Good morning, all. I'm here with my colleagues Bob Wasserman and John Lawton, and we have reviewed the recommendations from the CCP Risk Management Subcommittee, and we'd like to provide a few comments. We have a very short deck here, a PowerPoint that kind of highlights each of the recommendations, and we'll discuss them in turn.

So, as most of you are aware, the CCP Risk Management Subcommittee developed recommendations related to CCP default management. DCR staff has reviewed the recommendations. We find the recommendations to be thoughtful and useful and consistent in large part with CFTC regulations. DCR staff supports the recommendations, and we are ready to work with the community to the extent that further progress needs to be made in some of the recommendations.

I think we can say some of them have already been achieved, and so we'll go over them.

At a high level, there were two broad categories of recommendations, the first related to coordination, harmonization, and enhancement. There were five topics under that broad category, which we will go through in the slide presentation. And then the second broad category is porting. Key issues have been identified and, as I think everyone is aware, that is probably the stickiest wicket. The most difficult task still remaining is how best to manage porting, particularly since -- you know, credit to all the CCPs -- there have been very few defaults in the history of our industry, So, there has not been a lot of practice with this. The last one that we all know of -- at least the most significant, one on October 31st of 2011 was MF Global. And so the CCPs have done a fine job -- as well as the clearing members themselves -- to ensure that we do not end up with systemic risk problems.

And with that, I'll turn it over to the

first -- well, first I'm going to describe how it is that these recommendations are consistent with the CFTC regulations.

The CEA -- Part 39 of the Commodity Exchange Act has two regulations related to default. There's 39.16 in subpart B and then 39.35 in subpart C. The 39.16 default regulations have been part of DCR's examination program for the past five years. So, as some of the CCPs can attest to those that are here, we have gone in and we have evaluated CCPs' compliance with this regulation.

Now, keep in mind that the core principles do allow for reasonable discretion. The CCPs have reasonable discretion in how they implement and comply with these regulations. So, with that being considered, each CCP may have procedures that are somewhat different from another CCP. They're not required to have identical procedures. But the rules and the procedures right now require all of these, that the CCPs' written default management plan incorporates all of these concepts.

The first is that they conduct an annual test, a fire drill, a simulation. We require also that they vary the scenarios that they use in their default management drills each year so that they're not just testing one aspect of it -- for example, the auction process. We have found that the CCPs have the auction process down pretty well, particularly with respect to swaps, but there are a lot more things to consider in a default, including the magnitude of the default and liquidity issues and things like that.

So, our CCPs now do vary their default management script each year. The scenarios do include testing all the procedures that affect clearing members and customers. It's not a requirement every year, but we do ask that the CCPs default. If last year they didn't include a shortfall or a default in customer origin, then next year they should consider that.

The rules must be disclosed. The CCP must disclose to the public its rules in terms of how it will manage a default, including its default waterfall and any obligations imposed on the clearing members.

The first recommendation is related to communication. As we saw during the MF global situation, there was a lot of good communication that took place, but also some people, I think, felt communication could have been better, particularly at the customer's side. At times it wasn't exactly clear which positions had been transferred or were going to be transferred, or where they were going to be transferred to, and Bob will be addressing that concept a little bit later.

But the subcommittee did a great job, and the very first, I think, significant accomplishment is they created this -- am I skipping ahead of myself? -- they created a contact -- a list of global -- no, that's it, the directory of contacts has been created. I'm not sure how widely circulated it has been, because I don't have a copy of it, but apparently if it's confidential information and it's the key decision- makers at each of the CCPs, so each CCP knows who -- has the phone number and the name of who to contact in the event that there is a default of a significant clearing member that has clearing relationships at multiple CCPs.

Anyway, the minutes of the recommendations say that this directory has been created. So, presumably the CCPs do have it, which was a great idea, and the fact that they've already achieved it is also an excellent accomplishment. So, that directory does contain this detailed information that CCPs would need to enhance communication as they're managing a default.

The other recommendation is a great idea, and this has to do with establishing a mechanism so that CCPs can communicate to clearing members and customers of clearing members the exact status of their positions for nondefaulting customers, whether they're being transferred, whether they have to be liquidated. I am not certain what the status is of that initiative, so maybe someone on the subcommittee that's worked on it could provide the group a status, but we wholeheartedly support that initiative and think it's a great idea.

Okay, next -- the next recommendation is related to the Default Management Committees. All CCPs have Default Management Committees. They have a variety of responsibilities, again given that CCPs have reasonable discretion in how they plan to manage a default.

The first responsibility, and what many consider to be the most important, is the seconded trader's aspect, that CCP regulations in many cases require that clearing members have traders available to participate, to go off in a secure room, and assist the CCP in managing a defaulted portfolio or a defaulted situation, which, depending on whether it's customer or house, whether it's futures or swaps, you know, the requirements and the things that these seconded traders have to do may vary. But the concern that's been highlighted over time is that if there was to be a default of a major clearing member who clears at eight different CCPs and they happen to have the same trader names on each CCP's seconded trader list, well, then, there's going to be a shortfall in terms of traders available. So, the recommendation is that, first of all, the CCPs need to communicate amongst each other to try and avoid having overlap.

Most CCPs will change out the names of the seconded traders quarterly or semiannually -- and so the recommendation, which we support and think is a good idea that the CCPs communicate with each other about which names are on their list to be seconded at which period of time. Furthermore, there is an obligation on the part of the clearing members to notify the CCP if any of those traders leave the firm or may otherwise not be available. So, we thought that that was a great recommendation as well.

Okay, next I'm going to turn it over to John Lawton, who's going to talk about -- fire drill was the next recommendation.

MR. LAWTON: Thanks, Kate. Good morning. As Susan mentioned, this is very timely, because in

fact a fire drill was commenced yesterday, so I'm going to give you a little bit -- in the middle of it -- a little bit of an update.

So, the MRAC did recommend that the CCPs conduct coordinated exercises. The one that's going on right now includes three very big clearing organizations -- CME, Eurex, and LCH -- hitting a number of markets including IRS and Equity Index and repos. The regulators that have been participating include the CFTC, the Bank of England, BaFin, and Bundesbank.

I can't give a lessons learned yet, because the auction portion actually hasn't been completed, but I can provide some flavor of how things have progressed so far in the exercise.

Our staff was onsite at the CME offices in New York yesterday. Similarly, Bank of England staff was onsite at LCH, my understanding is, and Bundesbank and Bafin staff were onsite at Eurex in Germany.

At the CME the default that was declared yesterday was in a large interest rate swap portfolio. CME had eight traders from seven firms seconded at the CME office. The exercise started about 8 a.m. yesterday. The traders were divided up by currency, so there were two for dollars, two for pounds, two for euros, and two for pesos.

Our staff observed and asked questions as the traders designed a series of trades that would hedge the defaulted portfolio. Essentially, they divided it into two steps: macrohedge and then later microhedge. And so they would send out the requests for bids to clearing member firms.

The clearing member firms responded. The traders in consultation with the CME chose which bids to accept. They basically got the positions hedged by approximately -- shortly after noon yesterday. Then in the afternoon, there was valuation done of what is the value of -- well, what is the new position once you incorporate into it the hedged positions that were executed as part of the exercise. And there was valuation; there was mark to market -- what's the current value of this hedged position now? Later in the day the CME then sent out the position to firms for bidding. The firms will have two days to analyze the position. The actual auction will take place on Thursday.

Our staff has received written reports of -- again, they're marking the position to market in the meantime as they would in a real default situation and then checking what is the margin erosion of the position against the margin that they're holding. Again, I can't go into the details of how the LCH and Eurex auctions are proceeding, but essentially they're very similar. The procedures aren't precisely the same, but they're very similar. Our staff has a conference call for later this morning, in fact, with the Bank of England and German regulators to compare notes on what we've observed so far and what we're expecting for the later part of the exercise on Thursday. We will do that again after the auction once we see what's happened with the auctions on Thursday and possibly going into Friday at the other clearinghouses. We'll again speak with the representatives of the other regulators.

We also plan to have discussions with each of the CCPs and with the clearing firms that participated in the exercise. We're going to try to get everybody's views on what worked well, what didn't work so well, what suggestions for improvement there might be -- for example, along the lines of setting up portfolios in similar formats or additional coordination among the CCPs or among the regulators in the course of such an event.

After we've gone through sort of our due diligence with the various participants, we will prepare a briefing for the Commission. I'm expecting we'll probably have some recommendations. I can't say what they are at this moment, but our staff is already thinking about stuff that they've observed. And, again, we want to consult with our other regulatory colleagues and with the participants to get everybody's ideas before we put together a briefing and be probably some recommendations.

Thank you.

COMMISSIONER BOWEN: So, John, just a quick question on the fire drill. Was it just limited to the clearing members, or did we try to include non-clearing members?

MR. LAWTON: I think that it's sort of broken up into a couple of pieces, and with regard to the auction of the CME equity index positions, I think there are some non- clearing members if they would like to participate in the auction. That was put off for a day, because there was some concern, as everyone knows, about the French elections. So, it ended up not -- that part of the exercise didn't take place yesterday. But, yes, so there will be some participation, because that's, again, something people are interested in: How well will it work? There are complications if you have end users, but again there is an interest in ensuring as much liquidity as possible in an auction process.

MR. LAWTON: I think -- is it back to Bob or back to Kate?

MS. MEYER: Okay, with that the next recommendation is related to the auction process. The two key themes here are communication and harmonization consistency. We applaud these recommendations. In large part, they're on the CCPs to engage in the communication, and to the extent that they can and choose to harmonize their procedures and their plans and then publicly communicate them, you know, that would be a laudable goal.

Also, applause should go out to the Default Risk Management Working Group, who developed this document, "The Uniform CCP Terminology for Default Management Auctions." I don't know if the author wants to stand up and take a bow, but it's very well written. It's a primer on how auctions work, and there's a lot of good information in this, so this is in the public domain. This is on the CFTC website.

And with that, I'll turn it over to Bob Wasserman.

MR. WASSERMAN: Thanks. I'm going to talk very briefly about customer

participation in auctions. At bottom as Kate and Don were saying, we very much want auctions to succeed. It's much better to have a voluntary market-based tool, because the alternatives are very unpalatable things like mandatory tools such as partial tear-up. And so to enhance the likelihood that the auction succeeds, it's, frankly, other things equal, better to have additional participants in the auction and having qualified non-clearing members participate than increases in the likelihood of success by expanding the scope of bids. So, I think the recommendation, which I think is a very good one, is that CCP should be encouraged to consider permitting non-clearing members to bid.

Obviously, you need to have appropriate

policies and procedures around that. You need to make sure that all of this participation is supported by a clearing member in good standing, because they have to ultimately guarantee those bids if the bids are winning ones. And, as well, there are some interesting issues around front running and confidentiality that need to be taken into account.

Turning to porting, which was discussed before, this is something that personally is very near and dear to my heart, because when we have a failure of an FCM, it is critical to take the clients -- and particularly if it's a client-led default -- the non-defaulting clients and port them to safe harbor. And that has always been a goal of the Commission and staff and indeed 764(b) of the Bankruptcy Code protects this. It is directly encouraged in the Commission's part 190 regulations as well. Doing that, a successful port protects both the customers, who do not have to reestablish their positions, but as well the markets, because if you cannot successfully port, the alternative is all of these customers are going to get liquidated, and that is just simply not good for the markets and it's most assuredly not good for the clients.

Historically, we have in fact taken a very practical approach towards fostering transfers both for bankruptcy when clearing members get into trouble and for looking at certain possibilities under our Part 1 regulations. But, as well, staff have basically spent quite a few all-nighters trying,

and along of course with folks at the clearinghouses and the SROs, trying to find ways to successfully port customers as quickly as possible, again, to avoid having to liquidate all of those customer positions.

I can also say -- I know there was some mention, some concerns around bankruptcy court approval -- my experience has been that bankruptcy court approval has been quite prompt, quite reliable. You have bankruptcy court judges scheduling hearings on hours' notice. You have hearings being held outside of normal court hours. I think, again, bankruptcy court judges I've appeared before have been very, very practical in their approaches. So, we've been very successful to this point. Indeed, I recall -- but the trend line is not necessarily good. I recall in the case of Refco the privilege of being the transferee was auctioned off, and indeed the bids went from 80 to 200 million dollars. So, basically $200 million was paid for the privilege of taking those customer positions.

In the case of Lehman, you had one entity, and really I don't think they paid anything for it. And in the case of MF Global I think there were ultimately 10 transferees that were -- and homes were found for all the customers. But now of course, remember, in order to have transfer, in order to have porting, you need to have willing and able transferees. As we see, the trend line's been going in, I think, the wrong direction. Now you have FCMs who are not looking for customer business but who are, because of the leverage ratio, pushing it away during normal times. So, I will say that I am personally quite concerned that during a crisis time, during a time of market stress, the ability to find homes for these customers, to find firms that are willing and able to take these customer positions on, is much less sure, frankly much less likely than I personally would like, and that concerns me a great deal.

And I know you're going to be talking more about the arbitration later. Thank you very much.

MS. O'FLYNN: Okay, so I'm going open it to the -- for the group for any questions, observations, or comments.

Marnie.

MS. ROSENBERG: Thanks, Susan. The first thing I would say is congratulations to

the subcommittee on putting these together, you know, led by Susan. I think these are really excellent, and J.P. Morgan has been really supportive of all of these recommendations and obviously, as both a dealer and a clearing member, very involved in all of the fire drills and the work that's been done in the market.

More questions for the clearinghouses in terms of implementation on some of these recommendations, so one question I have is on the harmonization of auction procedures and for specific asset classes, meaning those that obviously clear interest rate swaps, is there work being done to harmonize some of those procedures? I think that would really work to reduce potential operational risk in a crisis and cause less confusion in the markets.

And then the second point I can't emphasize enough is the coordination and sort of standards on frequency and rotation on trader secondment. You know, we continue to see in the market, with more and more electronic trading, less traders. So, I think there's a careful balance between members being able to have sufficient resources on the desks to manage our own internal risks, obviously, as our own regulators need us and as from an internal risk management we need to do. So, I think the more we can kind of streamline the dependency across the market on the secondment would be a really good outcome, and I think having a sort of more structured process in terms of rotations would be very helpful.

And the final point I would make to what Bob was just saying is, you know, we are very supportive of broader participation at auctions, and I think it really is about how to implement that, because there are different ways of doing that, and so I'm very happy to see that there's a lot of support across the clearing member community on that.

Thank you.

MS. O'FLYNN: Sunil, do you want to respond?

MR. CUTINHO: Yes, definitely. Thank you very much, Susan.

A few things, though. First is: I echo Marnie's comments. We CCPs appreciate that. We really want to establish a system where we coordinate, you know, the resources that we tap into during a default, because this is a time of stress and our goal is not to deplete our members or resources that they need to manage their own risk.

So, we're working towards that. I think this coordinated drill is actually a test of that, and we'll see how it worked out. But as a group we've been working on that.

On the second item, in terms of auction harmonization for like products -- I think that's what you were pointing to -- I think the CCPs work together to put that framework together so that we could get to a good place, to a good starting point. Of course we have different mechanisms for communicating right now. We do share with OCC an infrastructure for auction participants. Dale, when he was at CME, started that process, so we have taken that to the next level, so we continue to use that. We'd like to invite other CCPs to also participate in that same infrastructure so it makes it simpler. I think the objective is to reduce as much operational risk as possible. So, we agree with that.

I think the last thing I was going to point out is there was some question from Kate and others on progress in communication in relation to porting. So, here what we've done is -- you know, especially for the futures world, a CCP doesn't have end customer information as a matter of a normal course of business. So, what we have done is we passed a rule requiring information about end customers from firms to be used exactly in the instance that we pointed out. This is one of the biggest lessons that we learned from 2011, and MF Global is having access to end customers so we can communicate with them when their clearing firm has an issue during the porting process.

So, that process is underway. There are firms already submitting information. We still have some work to do. We have to complete that. For the over-the-counter markets customers register with us directly, so we do have contact information. But for futures markets we are going through that process. That is step one.

Step two is coming up with a harmonized process to actually communicate. Here, too, importing -- it makes sense to coordinate. We CCPs agree that it makes sense to coordinate amongst ourselves, because customers typically use a single firm across CCPs and they net settle. So, we would - - when you port these customers to another clearing firm, you know, you don't want to break that netting set for them, so that will result in a liquidity demand on them. We are very cognizant of that, and that's an important part of our coordination exercise. But for this exercise we avoided porting. We avoided customer porting as one of the scenarios in order to further develop this process.

So, I thought it would be useful for everybody to hear where we are so far.

MS. O'FLYNN: Richard?

MR. MILLER: Thank you, Susan. I think that we're on a good course here, and I had a couple of follow-up questions maybe for you, John, concerning the coordinated fire drill that you're engaging in. You know, as end users, we're, you know, very -- everyone here is concerned, end users are of course concerned and don't have as much transparency as other market participants have -- you know, the clearing members and the CCPs -- so, just a couple of follow-up questions.

In the current fire drill that you're doing, what's the severity that you're assuming of the default? Are you assuming two largest clearing members? I'm curious.

And I guess on looking forward, what kind of transparency can we expect in the way of feedback to the market participants in the market in general as to the results of the fire drill and what we can expect and when?

MR. LAWTON: On the first one, it's just a single firm at each CCP in this exercise.

Feedback -- I guess we haven't really focused on that, but I think we're very open. I think that's a very good suggestion that, as I mentioned earlier, we're going to talk to people who participated in it. I think it probably would make sense to, after we've sort of pulled together those thoughts, talked to people who didn't participate, and talk to them about what do you think, sort of explain how it went and some of the lessons learned that we thought and perhaps get some feedback from other market participants who are not participants. I think that's a very good suggestion.

MS. O'FLYNN: Dale.

MR. MICHAELS: Thanks, Susan. Just to echo a little bit what Sunil mentioned about the standardization of the member auction process. This has been something that's been going on for quite a while. It was several years ago where OCC first started using a third-party platform, showed it to the colleagues at CME. They started using the same platform, so they were using one infrastructure. Members bid in that same platform, so they don't have to learn the different procedures for the different CCPs. When we do joint drills with CME, which we've done for several years now on the exchange trade products, it's used with the platform and able to have folks bid fairly aggressively. Since they already know what that platform looks like, they don't have to ask questions. It basically fills some of the operational holes that could come up.

As far as the broader participation, having gone through a number of real-life events, one thing we have found out is that we very much endeavor to have more than just clearing members participate. We want to see the end users participate in a drill. They tend to be very aggressive when they are participating in the auction process. For some career members, when we have gone to them for certain portfolios, a lot of times it takes -- they have to get approval to take in certain products, and getting that approval in a very short period of time for some very large broker dealers is just not possible. When you're having end users, prop shops, and other types of end users, they could react very quickly. They could look at the portfolio and come up with bids and come up with their assessment of where their portfolio might be going very quickly and come up with some very aggressive bids. So, one thing we found out is that we very much want to bring other folks into the business of doing the auction process. In fact, at OCC we now put in our rules that all members are required to test with us so that we know that we have a full bench of possible participants in our auction process.

The last thing I want to address is Bob's comments and concerns on portability. We very much share those as well. With the leverage ratio, what has happened is that even in peacetime, what we are seeing with members is that there're asking business to -- there's no longer a theoretical issue. I just received some information from a member this week that said they had to let two members -- two clients, I should say -- go to another firm.

They asked them to leave because of the leverage ratio, not because of the credit concerns, not because of their risk at a portfolio, just because of the size of the option port fill as compared to the risk. It was impacting the leverage ratios. So, this is, again, no longer theoretical, and this is in peace time. We go into a stressful situation, one thing that does concern us -- and I think the CFTC, Bob mentioned has been very practical in their approach during those stress times, and I could not agree more. But we would like to see other regulators also take that type of approach so that we have some type of temporary restraint and things such as leverage ratio or other capital issue so that we could ensure that we have portability of your clients in these stress times. If we're seeing clients being pushed away now in a peacetime because of the leverage ratio, I think you're going to see even more of that come. When it's a stress time, we won't be able to have clients move over very successfully. The last one with MF Global -- it was not easy to move them over to more than 10 clearing members. It was a struggle to find the 10 clearing members, but eventually it worked out during that week. But that was without the regulatory issues that we have now with the leverage ratio and other concerns.

Thanks.

MS. O'FLYNN: Dennis.

MR. McLAUGHLIN: Yes, thanks, Susan. I just wanted to respond to Richard's question about the fire drill that's going on at the moment -- some more color if you like, and to John's comments about it.

The proof of the pudding is in the eating, in my view, and here we wanted to be a little bit more extreme. So, yes, we're assuming that one member goes into default. But in our CCP, that member was not put in default until afternoon, so that late-in-the-day problem for investing cash really comes up. It was a member with significant PPS relationships. So then we were testing the pipes, if you like, for how money gets to the CCP through intermediary means. It also provided a settlement function, and it was also a large counterparty for our treasury function. So, we were hitting a lot of points here. It wasn't just the normal test the auction, so to speak.

It also -- the market stress was Brexit-like, so it was fairly significant stress, and this member also had a lot of client positions so that we're in the process now of porting them. It was of the order of 400 client positions that we needed to figure out how to port.

MS. O'FLYNN: Okay, before we wrap this up, I just think I want to make a comment. So far in the drill, yesterday was a very busy day, and I think what I really appreciate is the clearing members -- the cross-product nature of this. I think we have been so much -- too focused on looking at OTC IRS in kind of -- without looking at the broader, overall impact in communication to clearing members when you're talking about multi-products. Some clearing houses clear, you know, three to seven different types of product ranges, and the communication that comes from, you know, those clearing houses can be quite different, depending on the product side. So, I think it's going to be a great asset test for both clearing members' participation on a cross-product basis but also the CCP communication and coordination around all of those products. But, you know, we're only into day two, and we have another eight days to go. So, with that, I'm just going to wrap it up and turn it to Petal.

MS. WALKER: Thank you, Susan. We'll have a five-minute break before we start

Panel 2. Thank you.

(Recess)

MS. WALKER: It is a pleasure to call this meeting back to order. As noted in today's agenda, our second panel discussion will be on cybersecurity. I would like to introduce Mr. Dennis McLaughlin, Group Chief, Chief Risk Officer, at LCH, who will facilitate and help shape the discussions during this second panel.

MR. McLAUGHLIN: Thank you, Petal. And thanks to the commissioners for facilitating what promises to be a very, very interesting discussion on cyber risk.

We are privileged to have three well-known industry experts in this area. Steve Chabinsky is a partner at White and Case; Karl Schimmeck is the global head of vulnerability management at Morgan Stanley; and Gil Vega is the chief information security officer at CME Group.

So, to begin this, as a CRO it was quite useful to me when I first read the paper, the framework written by the National Institute of Standards and Technology, NIST, on how to think about cyber risk, because it's an issue which is very concerning to risk officers all over the world, and the framework basically has four components.

The first thing you have to do is identify the key assets in your organization, so be it data, be it money, be it securities wherever it is, but you have to know where they are. You then have to, of course, put in strategies to protect such key assets. You must have a strategy to detect any threats to those key assets, and you must be able to respond and recover to any threats that you perceive.

So, there are lots of interesting questions around this. Having assumed that we've identified the key assets, the Commission has laid down three very important questions, which fall into the other three categories: so, around protection, protecting the assets, and responding and recovery.

I'll just ask the first key question, which is: What are the current cybersecurity considerations in the application of emerging technologies in the swaps and futures market -- for example, cloud computing, FinTech, distributed ledger technology, automated algorithmic trading. I'll start with -- Gill, if you wouldn't mind responding to that.

MR. VEGA: Sure. I'll respond briefly

and allow my fellow panelists to jump in as well. Thank you for having me here today.

I would categorize these into truly emerging technologies, such as internet of things, such as distributed ledger, such as digital currencies, and technologies that have been around a while that actually started to make an impact in the financial sector including things like cloud security, cloud applications, and the security implications around that.

I would say that some of the things -- some of the considerations that we take into account in partnership with our peer firms and our competitors, because we talk to them all the time, are making sure that not only do we have the staff available that have the requisite knowledge of these new technologies, but we also make sure that we do a lot of research into potential vulnerabilities around these emerging technologies but also try to understand how the vulnerabilities will be leveraged from a threat actor perspective.

The CME group is not unique in our

ability to really understand our threat landscape and understand some of the actors that focus on our industry but also our company, and having the ability to do that can help us anticipate some of the threat actors and their motivations as they target some of these new technologies.

MR. McLAUGHLIN: Thank you.

MR. SCHIMMECK: Just to add, I think, a couple of points to that one.

MR. McLAUGHLIN: Sorry.

MR. SCHIMMECK: For a third party, I think it's a really large consideration and very much just trying to go hand in hand when we talk about cybersecurity, talk about third-party risk management. When you look at cloud vendors, you know, you look at distributed ledger, you're talking about pushing a lot of your key technology points outside of your, you know, your four walls. And then how do you gain transparency and have oversight to that and doing it in a controlled way that will allow you to make sure you're managing the risks and you're also -- you've outsourced those things for a reason. So, making sure that those firms in many cases that are concentrated as we look at our client service providers -- you know, how are they managing the risks and what is the oversight that is being put on those, because in many cases those are not financial services firms; they are pure technology providers.

I think one other piece under consideration as you look at some of the emerging tech is just, you know, kind of what the -- we want to promote innovation. I think that's a really core component to financial services, and it helps us, you know, from a business sense. But how do we do that in a controlled way? How do we do that with, you know, making sure security is baked in from the beginning, doesn't become a bolt on afterwards.

But that is that key consideration, because, you know, the evolution the last 20-30 years -- we've gotten to a point now where technology is not something that's -- you know, it's not an enabler to our business, it's actually a key component. There is no ability to go manual anymore; there's no ability to do anything without technology. So, how do we make sure that anything that we're bringing in is being brought in, in a safe way; it's being thoughtful, the incentives are in the right place and security is baked in; and then, you know, how do we make sure we do those for those firms that may not ever have mandatory oversight.

MR. CHABINSKY: I wanted to first start by thanking the Commission for having us here, and the members as well. This is an extremely important topic to all of us.

And I think I would start by briefly discussing the NIST framework that you mentioned, because I think it has added a lot of clarity and harmony to cybersecurity, at least the way we talk about it, and also to commend the Commission and, in fact, other federal regulators for seeking the harmonization of cybersecurity rules that we spoke about earlier today, which is extremely important.

That said, I think it's extremely

important for us to realize that cybersecurity frameworks are perhaps more easily said than accomplished. And the NIST framework -- before you get to the appendix, it's only 17 pages long. If someone here has not read it, I recommend it. At least for me -- I confess to being a geek or a nerd or whatever -- I found it to be a good read. But in very many ways, because it's so easy to read, it belies the difficulty underneath the hood, and when you get to the appendix in the back, you recognize that these five simple functions break down into a group of almost two dozen categories, which further break down into almost a hundred subcategories, each of which would give any professional a battle behind it.

And that's not even to mention all of the third parties that we're discussing now that we've grown reliant upon both directly and indirectly. Directly -- when I say directly, there are the products and services that we ourselves run in our businesses and those that we contract for, and I consider both of those direct.

We have some sort of control, whether it's through audit or understanding certifications or, more directly, actually providing the security features that we need in order to contract.

But indirectly we are relying upon an ecosystem now that impacts all of our businesses in ways I think best demonstrated by the recent DDoSattack where we see simple IOT devices already mentioned at least in the hundreds of thousands that were taken over in people's houses turn into a massive attack that included what I would say is the underlying infrastructure for the Internet that all businesses rely upon and then become victims of.

To put that in perspective as we talk today, we all remember the DDoS attacks that harmed the financial services industry over four years ago, widely attributed to Iran. The attack at that time was claimed to be in the nature of

billion bits per second flooding computers. That sounds like a lot, and it is a lot, and it was massively larger at the time than other attacks before it. The IOT attack that we just witnessed that affected this DNS service was reported to have been at 1.2 trillion bits per second. So, that's my way of saying that the Internet that we have grown reliant upon and that we regulate and that we try internally to control has become increasingly out of any individual organization's control, and it fundamentally relies upon frameworks that may appear simpler than they actually are to achieve.

That said, the increase in technologies that we're discussing today are steps in the right direction. Mr. Vega mentioned cloud security as one example when we talk about cost systems, oftentimes we forget to talk about how the cloud has actually been used to advance security in ways that otherwise we really would not be able to achieve security objectives. This includes, for example, DDoS mitigation which without cloud resources would not be possible. It includes end point detection monitoring where each end point is providing information in a cloud environment that's sharing information automatically with one another and, in fact, able now to update and operate systems and reporting in a way that almost starts to look like a self-healing network.

So, I think a closing comment for just this part when we talk about the cloud is to recognize that cloud resources are being used both as an innovator and as a security measure.

MR. McLAUGHLIN: Thanks, Steve. You're actually talking a little bit -- beginning to speak to question two as well, which is the emerging threat environment. So, if I could move on, it's a good segue.

What do you think -- the current cybersecurity threat environment risk exposure to the financial sector, ransomware, and other cyber crime, recent attacks on financial institutions and networks? So, what are your thoughts on that current "evolution," if you like? So, maybe Gil?

MR. VEGA: Sure. We've seen this evolve very rapidly over the last decade or so, and it continues to evolve to the point that major financial services companies like CME and the large banks have teams dedicated to really getting an understanding of what that current threat is, which could change very dynamically. It could change in days based on a new vulnerability, based on a change in geopolitical situation globally; and it could change based on the capabilities of these actors that seek to do us some harm.

Going back to the CSF -- the Cyber Security Framework -- I just want to say that, you know, we'll get to this a bit later as we talk about some of the interactions we've had as a community, but those last two components of the CSF, which are respondent and recover, that's been a key focus for us, because as a community, as a financial services community, we know we're going to be attacked.

There was a British study of businesses that was released last week that said 46 percent of all businesses in the UK had been attacked, which left me wondering what the other 54 percent were thinking about, quite frankly.

So, having the awareness and the recognition that you're going to be attacked as a company we're attacked hundreds of thousands of times per month. That equates to about a couple of dozen incidents per month. Understanding that you're going to be attacked, there's heavy motivation to attack companies like CME and Morgan Stanley, but having the ability to quickly detect those attacks at a very granular level, being able to respond effectively to those attacks, and then making sure that you have resiliency programs built in so that you can recover from those, what I call inevitable attacks.

MR. SCHIMMECK: Sure, and I think the one thing we wanted to add when we talk about the threat, and this goes to what we're seeing in these studies and such as that, it's becoming a more dangerous landscape out there. We're already a target. There are increasing, I think, situations where we are becoming more of a target. You know, we've always been one because of, naturally, the criminal element. The banks are where the money is, that's where theft occurs. But then you also see the evolution of geopolitical means in regards to, you know, is the financial services sector a proxy because of critical infrastructure? You know, where do we stand on that? And this goes into a lot of discussions we've had with the current administration, with DHS, with FBI in regards to protection of critical infrastructure and the need for kind of, you know, U.S. government as well as other world governance to really look at this and say, you know, how do you protect those critical assets that really underlie the entire global economy, their ability to operate, and safety soundness, all those sorts of things.

So, this is -- you know, we're seeing the firms are taking this very, very seriously. This is a board- level issue at almost every firm out there. Firms are spending money, adding teams, adding technology in order to make sure that they're taking risk mitigation very seriously. Also looking at the underlying infrastructure to ensure that we're looking at what vulnerabilities we have and how do we make sure we are not providing any kind of easy targets out there for attackers. So, you have that combination --

MR. McLAUGHLIN: Karl, could you move closer to the microphone.

MR. SCHIMMECK: Sorry, it goes back to the framework of looking at it across the whole spectrum of, you know, looking at our infrastructure; how do we protect, detect; and then if something were to happen how do we make sure we mitigate the impacts.

MR. CHABINSKY: The typical way we consider harms in our cybersecurity world for any industry is breaking it down into harms against confidentiality, integrity, and availability. And I think there has been a change in the dynamics of what we're seeing from the threat landscape. Initially, we saw much more in terms of harms to confidentiality -- credentials, for example, being stolen in order to commit fraud. We still see that, of course. In fact, some of the more recent large-scale intrusions that have occurred in the financial services sector remain exactly for that reason, because that's where the money is, and credential harvesting still occurs and typically is focused against the consumer, not the better protected institution.

Integrity is an area of concern when records might be altered, and the institutions certainly have spent a lot of time and attention being able to what I would call roll back transactions, understanding log records, understanding how the money is moving, which is increasingly important.

I don't have to remind anybody here that our financial system is based on zeros and ones, but not zeros as in no money and ones as in dollar bills. I heard someone express it this way to a group that was not as sophisticated in finance. They said: We all know that there's no longer a gold standard for our financial system, meaning there's no bar of gold somewhere that represents all of our dollars. What most people don't recognize is there's no dollar that represents every one of our dollars. And that shows the issue of integrity that the institutions have taken quite seriously.

And the last is this notion of access and availability, the ability to bring down systems for a certain period of time. We see the bank and finance sector focused on each of these and each of these as a focus not merely of low-level hackers -- that's another area that I think has changed in the threat landscape.

At the beginning, we were always concerned about the single, individual hacker. I think to some extent that may have been fostered by movies like War Games where you think it's one person in a basement somewhere. But that quickly emerged that organized crime in this area became not only big business but logistically incredibly sophisticated. And I would point to the ATM hacks that we've seen on a number of occasions moving in excess of $40 million in a 24-hour period by breaking into banks; by altering fraud detection schemes; allowing transactions to occur in excess of otherwise controlled limits; making sure money still remains in accounts so that the limit of the amount of money that could be taken out in an ATM is really just the amount of money in the ATM. But seeing that take place in 12 countries and over a hundred cities at once with tens of thousands of transactions where individuals on the ground are reporting money backup, going through no fewer than 10 different organizational capability sets, right? This is big business.

And more recently when we're talking about Bangladesh and the SWIFT incident there and reports that that was nation state sponsored, that we have nations that are robbing banks is something I believe nobody in this room that represents the private sector ever signed up for, which does bring us to an important question, especially from a regulatory perspective, which I hope we can get more into today, which is whether the notion of regulating institutions to try to defend and protect themselves continuously against nation-level threats and organized crime groups is really ultimately a fool's errand that we could afford to continue with.

No doubt enterprises have to provide modest and reasonable protections, but we really do have to question our strategy whether a vulnerability mitigation scheme rather than the country itself protecting against advanced threat actors; rather than figuring out if we could mitigate some of these harms at a much higher level in the Internet ecosystem before they ever reach the banks; whether we can talk about the design of the equipment -- software, hardware, firmware -- that's more transparent in the security rules that they apply to make security easier; whether metrics can be driven across industry with the help of the government. These are areas that it would do well for us to look at so that we don't keep putting the burden of cybersecurity on the private sector and the end users.

MR. McLAUGHLIN: Very interesting comment, Steve. It brings us to the last question, because it's
obviously something that we all share regardless of who you are in the financial services. We all share a concern in this area. How is the industry collaborating in order to respond to cyber threats?

MR. SCHIMMECK: Sure. The industry's got a -- we have a long history of working with each other and working with the government to look at not only cyber security but physical risks to the sector. So, really, the two main entities that we've formed -- and they've been around for about 15 years -- is the FS-ISAC, which is the Financial Services Information Sharing and Analysis Center and the FSSCC, which is the Financial Services Sector Coordinating Council. So, those two entities working hand in hand with their government partners -- this would be the FIBBIC which the CFTC is a member of -- this is really kind of the underpinning of how we work and collaborate not only with each other but with the government.

We work, you know, we are in collaboration with our partners and with other firms on a daily basis sharing information, understanding what's going on, what sort of intelligence they're seeing, what is going on, like Steven had said, in an increasingly dangerous world out there.

We also collaborate extensively with FBI, Department of Homeland Security, Secret Service -- in our sector, a specific agency, the Treasury Department. So, kind of with that we find that the ability to share information rapidly is an absolute essential piece to understanding where we need to focus our energies, focus our resources, and make sure that we're protecting our friends and our clients as adequately as possible.

This is also an area that is a noncompetitive one. You know, every firm looks at it as, you know, this was an attack against the sector. It affects the trust that underlies financial services. Hence, we do everything in our powers to make sure that firms are protected overall and the sectors are protected overall, and, you know, that extends, obviously, into all of our financial utilities and all of our partners.

So, that's kind of been the history. Where we've gotten to more recently over the last couple of months is the standing up a new entity called the FSARC. This is the Financial Systemic Analysis and Resiliency Center. This is focused at critical infrastructure, so via Executive Order 13636, any firm -- we have a set of firms that have been designated by DHS and the U.S. government as critical infrastructure within financial services as well as other sectors, and we've been working together to make sure that kind of the entities that control the critical infrastructure of financial services or kind of going that extra mile to make sure they're protected, sharing information, and doing some advanced collaboration. So, that's an entity that's just kind of getting out of the gate here recently. We can expect much more of that in this coming year, but, you know, sharing is absolutely, again, the underpinning and essential to what we do.

MR. VEGA: If I could just jump in here about the FSARC, we're excited as a community to have the ability to collaborate but to collaborate in a way that brings those that have more skin in the game together. The FS-ISAC is an organization that allows I think it's more than 5,000 financial organizations globally to come together and share information sometimes in an automated way. The FSARC, the Financial Systemic Analysis and Resiliency Center, allows the eight global systemically important banks and the systemically important market financial utilities like CME and DTCC and ICE to come together in a smaller group to talk about cyber as it relates to systemic risk. And I think this is really kind of the leap forward in our community that allows us to start identifying those systemic vulnerabilities across finance, working with Treasury and other regulators to -- I'm an Army veteran, so I believe that you fight like you train, and our training is these national-level exercises, the Hamilton series of exercises that are continuing, that allow us to really examine what's vulnerable in our ecosystem and how we would collectively respond to it, not on a firm basis but on a community basis, and I think the FSARC is going to be key as that stands up to pushing our capabilities forward in that regard.

MR. CHABINSKY: I wanted to echo the view of the importance of the FSARC in light of the incredible work that the FS-ISAC has done to this point. There is no doubt in my mind -- based on my prior experience, which includes over

15 years of service with the FBI where I had actually built

and lead the FBI Cyber Intelligence Program and later served as deputy of the FBI Cyber Division -- financial services does information sharing better than any industry group out there. What I think the FSARC is bringing to this is an additional layer of strategy that otherwise can be eaten up by the day-to-day tactics that are involved in cyber security.

And to put a finer point on that, I think that a lot of times we talk about information sharing as though it were, in and of itself, a worthy goal: How's information sharing? What is information sharing? And I've spoken with other sector groups that I think are not as sophisticated as the financial services sector in this regard, some who require their members to provide information in order to get information, for example. And really at the end of the day we should be looking to see if there are any barriers to information sharing.

But ultimately we're trying to solve problems, and it's a lot better to say: What are the biggest problems that the industry is facing? And then: What is least amount of information and the fewest number of members that would be needed to be able to analyze and come up with an answer that could be used for the benefit of a sector as a whole? And to the extent there's a free rider problem in that, which I greatly admit there would be, then some people would just have to pay for the solution.

But the answer is not otherwise let's see how much information we could push around from one group to the other, and I find it discouraging when I hear groups -- including the government -- just ask for more information to be shared without, really, an understanding of what the end goal is of that. Information sharing is one means, and there are other means of course, as well, to understanding how to make the environment more secure, more resilient and to make sure that threat actors ultimately are deterred from trying these actions in the first place.

MR. McLAUGHLIN: Thank you, Steve. Well, there's a lot to digest here, so I'd like to

throw it open for questions. If you have a question, please move your card.

Well, I have one question. What would

you expect -- what would you look for from regulators like the CFTC to help in this effort?

MR. VEGA: A few things. We are very appreciative with regard to the new rulemaking and regulation that came out late last year with regard to system safeguard testing. We agree that, and we've commented on this heavily, we agree that the approach -- the principles-based approach to regulation is really the approach that supports true risk-managed and risk- informed success in this area. What we see globally is sort of a drifting away of those principles-based approaches to regulations. Some of the regulation that's pending is very prescriptive, which may not drive risk in the direction that we all want it to go. So, the continued focus on principles- based regulation in this area I think is going to be helpful for the quite different, large firms and financial services to manage the risk.

MR. SCHIMMECK: An item I'd add to that I think is, as we talk about information sharing, collaboration, you know, we do across the private side, I think having at least the U.S. regulators collaborate with each other I think is really important. You know, we have this notion and we're starting to champion out there through, again, FSIC and FS-ISAC of regulatory harmonization the idea that in many cases regulators are asking, not only in the U.S. but globally, for a lot of same things but just in slightly different ways. So, just finding ways that we can do that in a really efficient process would be incredibly helpful, because at the end of the day compliances is kind of table stakes here -- that's just for kind of getting in the game and our expectations. But risk management is ultimately where we want to get to, and so how do we, you know, going to Gil's point, using principles that underlie, allow really a one-size approach not to occur and then also working I think through bodies like IOSCO, from a global standpoint, that we can say, you know, kind of how do we pull together all of the -- you know, in that case, the security regulators to maybe take one or maybe a few approaches versus many, many, many approaches to this situation.

MR. CHABINSKY: Well, I would add one thing and echo a second. The point I would like to add is that it may in fact be time for the regulators to question whether the strategy is actually correct that the U.S. is pursuing, which was pursuant to my earlier comment. Ultimately, I think it is a fail strategy to believe that the end users, including critical infrastructure owners and operators in the financial institutions, have a sustainable plan, from a risk management point of view, that will protect our country and the bank and finance system included within that. I think we have to move this away from the end users, and I think that the regulators can actually step up and actually kind of look down on what we're all doing. This is not in any way a critique of what the regulators are doing. In fact, the CFTC and the federal regulators have done a better job regulating and looking towards risk management principles than many others.

Still, the question remains whether or not that approach, no matter how well pursued, is actually the right approach, and I would urge the Commission to become part of a larger debate of whether there is room for a greater threat deterrence and for more involvement by the Internet ecosystem to get rid of threats and vulnerabilities at a higher level; to move towards better metrics involved in what's working as against the threat; and to be involved in more transparency and the creation design of software and hardware that we are all reliant upon. So, I think there's actually another strategy, that the Commission can be part of another broader dialog that ultimately is important.

The second is although the federal regulators have actually done a very good job of looking towards harmonization, we now see New York State and the Department of Financial Services getting into the mix in a way that is not consistent with what is otherwise being done. And in fact, in recent comments by New York State, they actually said that in their view a risk assessment should not include a cost benefit analysis when it comes to accepting or mitigating cyber security risk. That does not seem to comport with basic concepts of enterprise risk management.

And the possibility that other states will take suit and will also become a federated view of cybersecurity similar to what we're seeing in the data breach notification realm would not be beneficial to consumers in the end run. Businesses need consistency and an understanding of where to focus their resources. We need to move forward in concept and in terms of tactics and strategies. So, I do believe that this Commission as well as other regulators need to, as has been discussed, think of harmonization unfortunately even broader than the federal regulators.

MR. McLAUGHLIN: Unfortunately, we only have time for one question, I've just been told.

So, Anat.

DR. ADMATI: DR. ADMATI: I find this a very interesting discussion, because I do think cybersecurity is an enormous risk, but I particularly found fascinating the question of who's problem exactly it is and whether it's through the private sector or public sector. So, a couple of comments.

First of all, there have been a lot of mergers in banking, and I hear from sources within that IT systems have not been really streamlined and that, you know, IT is kind of, in some of the ones that have had lots and lots of mergers over the years, vulcanized and hard to find information. So, those are things at that level. So, that's question one.

And question two, and comment, has to do with your comment, Steve, about how it's a broader problem, it's a public -- it's a sort of collective action problem and all these jurisdictions and all these public sector and private sector actors. And so I think it is ironic right here in CFTC -- which is probably the poorest of regulators -- to throw it at other people without all of us here lobbying for some federal government or somebody to take this on as opposed to passing it on from one party to the other. I would say that the private sector often has more resources than the public sector or somebodies in the public sector to do stuff. So, obviously collaboration is critical, but just that.

MR. CHABINSKY: I'd comment on your second point, although not the first, because I wouldn't be aware of the vulcanization issue that companies are seeing. I might agree with you entirely that if we're going to get this right, it's going to require the private sector and indeed an international effort to understand how best to resolve this, and I do think that with the resources that the private sector has, certainly in terms of strategy and will, that a lot could be advanced on where we should recommend our next steps in coordination with the government.

MR. McLAUGHLIN: I'm afraid we'll have to leave that very interesting discussion. Thank you, everybody.

MR. CHABINSKY: Thank you.

MS. WALKER: Thank you, Dennis. We'll take a 10- minute break and start again about 11:35.

(Recess)

MS. WALKER: It is my pleasure to call this meeting back to order. As noted in today's agenda, our third panel discussion will be on the state of the market. I would like to introduce Mr. John Nixon, Senior Advisor for NEX who will facilitate and help shape the discussions during this third panel.

MR NIXON: Thank you. Welcome all back. I'd also like to offer my thanks to Acting Chairman Giancarlo and Commissioner Bowen as well as to Petal, for all the work that they've done in putting this together and many thanks to all of the MRAC committee members who have taken the time to be here today. We don't have any speakers for the session today. We've asked a few people who are members to help initiate some of the discussion on each of the topics but obviously all of you are welcome to join and any of the topics just please raise your name card and we will call you out. We'll speak for probably about 15 minutes on each of the topics leaving some time for any closing remarks and any other topics that the MRAC members might want to bring up.

The questions today all of you have them. Just to let you know these are the questions that were submitted to the MRAC committee by the CFTC. They are their areas of interest. They are topics that they would like to hear from the MRAC committee so if you don't like any of the questions don't blame the facilitator because I didn't come up with them.

Let's start with the first question on volatility events. How did the markets cope with the recent volatility events particularly around Brexit and the U.S. election. What are some of the concerns that your organizations have about the potential short term and long term consequences of these volatility events. How are you preparing, how are we coping. If you don't mind I'd like to call on Kristen Walters to start us off and then we'll open it up to everybody else to join in on the discussion.

MS. WALTERS: Sure. Can everyone hear me okay? So, I would say from a short term perspective particularly with regard to liquidity, both recent events, the U.S. election as well as Brexit were addressed effectively by markets. We were surprised by the outcome but certainly markets were able to adapt and address. I would say more broadly, there has been a very significant change in market volatility and how it presents itself in financial markets. At least from my perspective for many, many years before the financial crisis, developed market behavior, economic policy in developed markets was highly homogenous. Unlike emerging markets where there was lots of heterogeneity and market shocks caused by economic policy, we just didn't see that in developed markets. In general, from a risk management perspective statistical models and stress testing could be used to reasonably estimate the impact on P&L and portfolios and alpha in adverse market conditions.

I think starting with the financial crisis, post financial crisis with very significant monetary policy intervention for many years, structurally the nature of markets has changed and they appear to be structurally much more susceptible to economic policy shocks. So, in today's markets particularly with the rise of populism in the UK, the U.S. and continental Europe, what you tend to see are economies and markets that are quite heterogeneous from an economic policy perspective which I think has resulted in the markets appearing to be benign for very long periods of time. So, you'll see situations where volatility has been very, very low. In fact, encouraged by monetary policy and real negative rates for a prolonged period of time, but the markets are very susceptible to economic policy shocks and large movements to the downsize on economic policy surprises.

So, as a risk manager, what I do and what my team does globally, is we spend a lot of time working with economists and investors across the firm talking about what events could potentially occur. Instead of defining a single event in a set of outcomes such as Brexit, what we'll do is we'll look at varying permutations of an event that could unfold. Currently, I think, recently it is looking more and more like a hard Brexit might occur but we run models against our portfolios to look at the impact of varying outcomes as the UK starts to separate from the European Union. What it means is it is more difficult to measure risk and there are a lot more surprises that are significant, multiple standard deviation moves that we've never seen in the past.

I guess the last comment on Brexit, in particular, is that appear that the market reacted quite significantly on the downside. UK equities, property and the currency itself, I think, potentially there could be more volatility on a hard Brexit but the real concern that we have is the long term impact on the UK economy. There have been some, I think, her Majesty's Treasury did a study before Brexit and there was a view that GDP could fall between 6 and 7.5 percent in the event of Brexit which would make the UK a poorer country in that event. So, I think, that is our concern specifically with regard to Brexit.

CHAIRMAN GIANCARLO: Kristen, traditionally, in the markets that we oversee at the CFTC, futures and swaps, there is a fair amount of correlation: heightened activity levels say in interest rate futures would also see heightened activity levels in swaps. We watched the Brexit event from our perspective here in Washington, very carefully. One of the things that was actually somewhat remarkable was the activity levels in futures, including interest rate futures which were heightened in the wake of Brexit, activities in the correlated swaps were actually fairly quiet. Does that activity cause us to question whether market participants, in the wake of the new information provided by the Brexit vote in reassessing their portfolios, perhaps may have been reluctant to engage in products that had been subject to reg reform, in particular, Dodd Frank, and chose to participate in markets that were subject to more longstanding traditional regulation like the futures market, or are unregulated, such as the currency markets. Is there something about the quietness we saw in the swaps markets following Brexit that may actually, say something about the markets' comfort level with some of the changes that have been made.

MS. WALTERS: I mean from my personal perspective, I don't think so, but you definitely raise an interesting point. We definitely see, in times of market stress, much more activity in the most liquid instruments. Certainly, you'll see lots of flows in ETF's, for instance, in adverse market environments on the equity and fixed income side and it's not surprising that you would see increased futures activity with many market participants taking views on the rate side via futures. Why the lack of activity in swaps, I don't know. From Black Rock's perspective, I think, we nearly at 97ish percent of any derivatives that we transacted on behalf of our clients' accounts are either in futures markets or centrally cleared. We have viewed clearing of swaps to be a very significant plus for financial markets and as a risk reduction tool overall. The only point I would make about liquidity is I certainly share Bob Wasserman's and other's concerns about liquidity issues and portability given regulatory capital requirements and leverage. So, I do view that particular issue as an added risk from a liquidity market perspective to markets. I guess I would leave it and see if others have comments on swaps versus futures post Brexit.

MR. NIXON: Jerry, do you have something you might want to add?

MR. BEESON: Well, I think in a similar comment in terms of thinking about the swaps versus futures point, from our vantage point, I think, one of the primary concerns have been, would you see iteration terms of the liquidity available across the different SEFs in a way either leading into Brexit or post Brexit. From our standpoint, I think we saw a very resilient liquidity available on the SEFs that for those that wanted to trade the swap market that they were able to do so very resiliently.

MR. NIXON: Sunil?

MR. CUTINHO: I think I wouldn't be answering the Chairman's question but I will just be acknowledging a few things. One is for both those events, what we noticed was very high liquidity during the Asian and the European time zones. These were well anticipated events. I think at least for Brexit, we were quite aware of the fact that a lot of traders, in even the European time zone, had positioned themselves to participate during the Asian time zone. Immediately post the results were published. So, that is one factor. The second is we saw significant volatility in the Asian time zone, especially in the Nikkei contract. We saw a lot of activity in safe assets, gold and treasury futures, FX especially the sterling and the Euro moving and then finally, treasuries rallying significantly.

So, as Kristen pointed out, I think, liquidity is basically an evolving thing throughout the 24 hour time zone and we noticed that a lot of traders were actively participating in the futures markets at that time.

From a risk perspective, that is a CCP's, that's how we look at things from a risk perspective, these were anticipated events that we could prepare for just like Kristen pointed out. I think, CCPs across the board were preparing for them well in advance. It holds true for this year as well. We have a lot of elections that can to Kristen's point, create or inject more volatility into the market. I think from a risk manager's perspective, you cannot bias your views on one or another outcome, you have to prepare yourself for any outcome. That has been the focus for us CCPs.

The second focus for us as CCPs is to make sure that we don't create unanticipated demands on our clearing members as well as our clients in terms of liquidity. That's a very important thing to keep in mind because a CCP cannot think of itself but it has to think of the entire ecosystem. I think the markets performed very well throughout both those events. I think the CCP actions were very measured throughout both those events. And as CCPs, we stand prepared for the events to come as well and that is what we have to look forward to for the rest of this year until September.

MR. NIXON: Dennis.

MR. MCLAUGHLIN: Thank you. I'd just like to add where do we go now from where we are. So, Brexit has happened. The CCPs all managed to get through it, the market got through it but there is increasing noise especially in Europe about clearing Euro products on the continent. From a risk management perspective, that raises a lot of concerns. The biggest concern I have is that once you artificially fracture a global liquidity pool, for example, as we have in swaps. You then have less members to bid on a defaulted members portfolio. You have less members to which you could actually port a client's portfolio. You have less members who are involved in the assessments that could happen. You have less members around which to share the losses from variation margin and gains haircutting and you have less members to basically at every step of the waterfall as you move down, you have a worse position than you had before. So, that increases the systemic risk and this is one of the big concerns that I have.

MR. NIXON: Before we go onto the next question can I open it up to a couple of the other members. Maybe one of the banks could give their view.

MR. CHATTERJEE: So, John, thank you. To kind of directly address the Acting Chair's question, I'd like to pick up on something that

Sunil was eluding to. Which is the fact that there are fragmentations in anticipated in futures while there is a whole lot between futures participants and interest rate swap participants. I think the timing of when the event occurs is very relevant as to who can react to it. For example, Brexit, the final news came out pretty much very late night during U.S. hours. Most of the market participants while they may have staff that is overnight which is usually a normal event, the markets in Asia were open. Because we do see a concentration of let's say swaps, trading based on regional and kind of SEF rules, the swap market wasn't really up and alive at like 2 a.m. New York time whereas the futures market was open for business in Asia. That being in the middle of the day, you kind of started seeing the activity.

The same thing happened with the U.S. election results. The results were coming around 3 a.m., 4 a.m., and while again desks were usually staffed to prepare for such an event. Markets in Asia and markets in Europe were already opening.

So, by the time the regional focus on the U.S. dollar swap markets starts to happen whether it is U.S. dollar swaps or CDX, the markets in Asia have already led the processing on the event and the volatilities kind of dampened as the market opened. So, these may be some of the reasons why sitting at a market maker or bank, we see these events already playing out and people's expectations or their concerns around these events dampened a little bit already.

MR. NIXON: Maybe we could use that as a segway into the second topic around which has already really been talked a little bit about, around liquidity. Liquidity on the SEF's or liquidity on any of the venues. I would just like to hear some comments from the MRAC members about the liquidity issues that they may have faced either during times of stress or are there any liquidity issues now that you are concerned about that you'd like to share with the CFTC. There is one thing that I think I would note that during the Brexit situation, the markets obviously, particularly the currency markets around sterling were extremely volatile for a day and then that volatility subsided pretty quickly. It seems to me that a lot of these liquidity stress events seemed to happen in a very short window and the markets have a tendency to calm down very quickly. But I'd just like to open that up and get some more views from the MRAC members on the state of liquidity in the marketplace both on a regular basis but also in times of stress. Bis, do you want to take one more crack at that?

MR. CHATTERJEE: Sure. So, John thank you again for the opportunity and thank you Acting Chair Commissioner and Petal for setting up the discussion. I think I wouldn't want to blame anyone. I think these are very excellent topics that have been chosen. As we at Citi look at the SEF market and the liquidity available, we approach the market as principle market makers looking to satisfy the risk needs and our end users, some of who are here around the table might have. In our experience over the last two to three years as we look at the SEF regime mostly across the interest rate swap and the credit default swap markets, we think it is working satisfactorily. When I mention satisfactorily, I think from a normal day to day functioning, people seem to be able to meet their needs around their liquidity, their risk whether that is standardized or non standardized.

We do see the SEF regime as a marketplace where many SEF options do exist but liquidity or the actual trading volume seems to call us around a few venues. It is a little more concentrated in the credit default swap market with one or two venues whereas in the interest rate swap market, that is probably spread out more over three to four venues. And that seems to be a consistent trend and not changing.

Why is it the fact that you see this kind of construct and this concentration of SEF's versus something like equities which is a much more widely traded product across multiple venues. I think that goes back to the comment I mentioned earlier on the Brexit is, the more concentration of participants in a product class the tendency for it to trade on fewer venues. So, for example, if you compare the asset classes of credit default swaps and interest rate swaps, you clearly see it is a smaller marketplace in terms of number of participants and the volume that has transacted. Hence, the fragmentation across venues is much lesser. And that number grows as you move from the least concentrated asset classes to the more concentrated asset classes.

We do acknowledge and accept and, I think, Kristen eluded to it, that stress market conditions will occur. Stress market conditions will occur and I think the market, looking at the SEF construct has been living with the comfort that these have been rare and when they're rare, as John mentioned, the volatility and the stress conditions seem to be dying out on their own fairly quickly. They're not lasting over multiple days or weeks. However, we do think that the SEF rules by themselves or the event that happens

--how soon the volatility dies out I don't think is aided by the SEF rules. That probably points more to the construct of who are the nature of the market participants and to the extent that there are people that can warehouse the risk and have the incentive to be the end user or the end provider risk. That seems to me more, in their capacity, seems to be the larger reason why some of these events die out much faster. So, that is our observations that the SEF construct and the rules said as itself, doesn't help or hurt to dampen the liquidity of the volatility.

As I said, we see flexibility in the availability of SEF regimes, we welcome that. However, we should understand that having multiple venues connected to multiple SDR's connected to multiple CCP's, does create kind of a complex web. If everybody's ability to access these markets, everybody's ability to have equal resources to be available to connect to these markets, if that were truly a level playing field, then you probably see more trading and flexibility across these venues. However, we know that every market participant is different and to the extent that market participants have varying amount of resources to be able to support all these platforms, all of these connectivity venues, you definitely see them focusing around fewer venues. Because there is a cost to be able to trade on every venue, to be able to connect it to every venue.

So, that kind of takes me down the path as we look at the SEF construct, is there room for improvement, can something be done. I think the first area we'd like to point to which is something, I think, the commission in the past has looked at, is to make sure we have certain basic guidelines for robustness and operational capabilities that the SEF support. One of the other areas of concern is that the SEF just has one method of connecting to a part of the chain which is a clearing house or maybe an SDR. We welcome SEF's and some of them are around the table to reflect on the fact that they do have backup systems of connectivity and processing and operational standards that would allow them in the case of a failure in one of these connectivity components to be able to process the trades and not bring the markets to a standstill.

The other area which is again, been a big area of focus is cross border harmonization and we welcome the commission's efforts to reach out to other jurisdictions. Case in point it was very evident when the SEF rules went into place a few years ago. We immediately saw bifurcation of the market between U.S. SEF's and non SEF's. It certainly is a concern for us and it is certainly a concern for our customers. To the extent that people don't have either the ability or the resources to immediately connect to different regimes and support regimes or there are political irregulatory boundaries that prevent and we certainly saw that. We had the experience that there were certain non SEF markets that prevented U.S. participants from joining them. I think the commission should definitely work to ensure that

that doesn't happen.

And finally, we do welcome a continuous evaluation of the SEF regime because it is not like these rules are set in stone. So, we welcome the opportunity for the market to be involved with the commission and looking at SEF rules expanding product requirements, bringing more products to it. But we think any changes or modifications certainly places a large burden on the market to adapt to new products and new rules should be done in the light of harming or helping liquidity and should definitely have a cost benefit analysis associated with it.

MR. NIXON: Jerry can I turn to you there?

MR. JESKE: For the sake of compartmentalizing, I'll defer to Richard because my comments relate to the commodities market as opposed to rates and CDS. So, it's up to you, John.

MR. NIXON: Go ahead.

MR. JESKE: All right. I prepared some

remarks which are my own remarks reflecting on it from a non-banking perspective and related specifically to the commodities market. That being eggs, energy and non-interest rate, non- CDS to give a little bit different vantage point.

From a liquidity standpoint, the market remains in a state of non SEF, still an OTC marketplace in the commodity space. And to that end, the number one item on the list that is impacting liquidity is the $8 billion de minimus ratchet down to the $3 billion. Continues to reduce liquidity in the commodity space. Lack of action on the part of the commission to affirm the $8 billion as an appropriate threshold level for non-bank dealers, is keeping market activity to a minimum and is hurting commercial end users. We continue to see the result through bankruptcies. Sighting the Westinghouse bankruptcy here, $8 billion bankruptcy as well as many of the bankruptcies occurring in the upstream oil area. Both due to lack of hedging in connection with lower prices in those commodity sectors.

The policy objectives of the commission is to participation and competition in the markets. It regulates without fear of participants occurring cost of registration and regulation, sighting the CFTC staff report from 2015 relating to the preliminary report on swap dealing threshold. There is a need for legal certainty and maintaining that $8 billon threshold according to that preliminary report would create some legal certainty. Moreover, the report refers to the registration goal has already been met. 80 percent of the commodity swaps markets already deal with a dealer on one side or another. The report goes on to state, over 3400 non financial, non registered entities traded swaps between Q2 '14 and Q1 '15. The vast majority of the dealers are financial entities. Only 12 unregistered entities traded over 5000 swaps in that same year. The commission in action and having a negative impact on the material percentage of that 3400 non financial swap users from transacting swaps of any size or frequency.

I ask the commission; does it make sense for the commission to continue to impose a ratchet down to capture nearly 12 non financial firms that traded in excess of 5000 swaps annually. Why not approach the 12 entities and simply ask them why they are not registered and save the other 3400 perspective swap end users, non-financial businesses, from the cost associated with being a dealer. Those costs are registration, business conduct compliance, recording, recordkeeping, risk management requirements, legal compliance requirements, legal disclosures, for CCO employment and material capital set asides, or face the prospect of leaving the commodities swap markets or artificially capping its activity.

Before this special entity threshold was fixed a few years ago, there was a special entity that testified at the APPA testimony in front of the House Ag Committee in March 2013 that two-thirds of it counterparties had diminished or had otherwise gone away mitigating any ability to hedge its risk. Commissioner Bowen recently gave a speech at the Euro High Level seminar in Amsterdam. Quoting from her speech quite eloquently here, "we can better achieve our purposes as regulators to incentivize the formation of efficient, transparent, well collateralized markets that are safe for counterparties. To do less is to fail to do our jobs". I assert that a failure to maintain the legal or regulatory certainty of an $8 billion threshold is a failure of the commission to do its jobs for the commodities swaps markets. I'm sure that the current commissioners and its staff have no interest in failing the commodity swaps markets.

However, just to maintain the $8 billion threshold is not enough. The commission has also proposed a capital rule for non swap bank dealers. So, those non-banks who might want to be a dealer that is due for comment in mid-May so, I think, this is a very timely panel to talk about liquidity which the number one issue is obviously capital set aside.

The former capital rule along with the regulatory threat of the $8 billion ratchet down, now have been the largest farce to entry in the commodity swap dealing space. New capital rules now that have been proposed are very welcomed additions. For those who haven't read them, it's a draft that has been out there for probably three or four months, but the former rule was from 2012. The new rule was introduced what has never been introduced before which is a tangible net worth test for non-bank dealers. Very insightful and welcomed addition but there are questions that remain. There is a three part test to the tangible net worth. $20 million plus market risk charges and/or credit risk charges. Or, 8 percent of uncleared swap margin plus initial margin for cleared futures. Or the deferment to the registered Futures Association which is the NFA.

The questions are as follows: Is it up to the industry to define the best practice or will the commission provide some type of guidance with regard to credit and market risk charges. The draft rule refers to a standard deduction under reg 1.17, however, that standard rule is not clear from an end user or commodity market participant standpoint. So, the process for approval of an internal capital model is another question. Will there be really a process or is that something that the firms can use their own business judgement to render. Alternatively, one can turn to 8 percent of swap margin calculation but is that determined off the gross notional of swaps or is it related to any letters of credit or parent guarantees. Many of the folks in the commodity space deal with LC's or PG's and is 8 percent calculation off of those posted letters of credit sufficient. Does the 8 percent have a subordinated debt sufficiency in it one way or another. Some of these questions aren't answered in the draft rule but hopefully over time we're able to get at them to get some legal clarity for those that might want to get involved in the swaps commodities market.

As also noted by Commissioner Bowen

earlier in her speech, financial stability by applying a capital penalty is counterproductive and risk driving transactions back into the darkness of the markets. Surely the new capital rule cannot be met to be a penalty or perspective non-bank commodity dealers. Presently, there's very few based on the study that staff has put forth. Without more clarity, the capital rule and the commodity firms that might choose to become dealers are unable to grow in a productive or create any sort of liquidity in what is otherwise a shrinking market.

One other point being is the 3400 non-bank commodity participants were in no way part of the making of the 2008 financial housing crisis and should not now be penalized by a forced regulatory cost or forced registration due to a failure of the commission to maintain the $8 billion threshold or establish clear capital rules for non-bank dealers. Thank you.

MR. NIXON: Thanks Jerry. Sebastian, can I call on you for a second.

MR. KOELING: Sure. I was focused more on answering the Chairman's question with regards to the liquidity in the markets especially during the distress events. So, I will confirm what I heard a couple of people say already. Indeed, we've prepared to provide liquidity throughout the night from our U.S. operations as well as from our Asian and European operations. And because of the fact that futures markets are open pretty much 24 hours, I feel the markets are able to absorb whatever the volatility is coming from these events pretty fast. We do, indeed, notice that the liquidity typically sits in the most liquid products so looking at the ten

year treasury and the S&P options if we look at the index options. Looking at the smaller says the liquidity there is a lot smaller. We try to provide liquidity but the necessity for that seems to be a lot lower during the first couple of hours after events with unexpected outcomes have happened.

So, looking at the liquidity, I actually think the markets work really well being able to get these volatile events priced in relatively fast. I know I will have some more things to say because it has already been mentioned a couple of times, one of the biggest problems that we see with regards to liquidity is the leverage ratio problem that keeps coming up more and more. It is actively impacting competitors. We have a lot of talk about that because it becomes harder and harder to actually provide liquidity. Not just from the bank side but also from propriety of trading firms and market makers like ourselves that use clearing at different banks because it is virtually impossible to get more room on their balance sheet which just means we either have to widen prices or we're less able to provide liquidity in all the months that are out there.

MR. NIXON: Thanks, Sebastian. We are going to come back to the leverage ratio and I'm sure that there will be a lot of comments in regards to that. Just moving for a second to the interest rate environment. The CFTC has asked what changes you guys might expect to see as the interest rates begin to rise. Do you have any particular concerns around stress in the marketplace as interest rates begin to take a direction that they haven't taken in a long period of time. I open that up. Ed, do you want to take a crack at that?

MR. PLA: No.

MR. NIXON: Bis:

MR. CHATTERJEE: Thank you, John. As we look at the interest rate environment that exists across the world, we like to break it up into three regions. The first being the U.S., then obviously the European zone and then Japan. We do see, in the marketplace, interactions of participants across these three regions. In the U.S., obviously our view is there is the monetary policy in effect. We do see, however, especially election and post-election, a counter effect coming from the proposed or the expected fiscal policy. An assessment currently where it exists in the U.S. right now, the interest rate and the yield curve is trying to balance out the counter effect. If I can elaborate, we see the effect of the monetary policy as laid out by the fed to kind of raising short term interest rates but overall keeping the yield curve on a flatter basis. However, the expectation from the fiscal policy and as the details begin to emerge from the new administration, we kind of see that as kind of steepening the yield curve as the focus seems to be on longer term growth. We've been seeing this effect starting November onwards where post-election and the kind of sudden expectation for fiscal policy jumps, seem to indicate that the yield curve would steepen. However, as details are emerging or have taken time to merge, we kind of see the market policy starting to dominate again. So, we expect this to continue. Overall our expectation from our economists is that the current monetary policy in the U.S. leads to a 4 to 6 kind of rate hikes, kind of topping out near the 2.5 percent regime. We think the current growth rate in the U.S. probably supports interest rates up to that level.

Moving on to Europe, our view is the ECB has probably reached the maximum of the QE that it was kind of expected. We do see signs of growth emerging from the European regime. However, the bigger issue in Europe seems to be the recent political kind of landscape that is emerging. We've slated for three large elections in Europe and we're in the middle of one right now. I think the policy in Europe will continue and the rate environment in Europe will continue to get effected by the political environment.

Moving on to Japan, we observed, obviously historically, very low interest rates there. Our expectation is that the focus on the policy continues to be more on maintaining the exchange rate and focusing on the exchange rate, rather than on the interest rate. As a result, if you are looking at interest rate flows, we do see borrowing in the end being getting converted to dollars and being invested in the U.S. rate market. That was a large trade in the prior couple of years and while there was a little slowing down in that rate, we think that it is picking up again. So, we expect the cycle of borrowing from Japan and investing in the U.S. dollar market to kind of dominate the flows going forward.

MR. MILLER: Thank you, John. In the context of interest rates and the yield curve, it is probably appropriate to jump in on the comments I have with respect to the life insurers industries ability to execute hedges in what are in its case, long duration products and the challenges that they're facing finding liquidity in those marketplaces. The aggravating extra factor of the 15 minute delay in reporting that is allowed, which we think is not sufficient because of the liquidity concerns we're facing. Just to be a little bit more specific, life insurers are using the interest rate markets to hedge their long dated risks, so they're often in the swaptions market and forward starting swaps. In the durations that they're trading, these are not very deep in liquid markets and they cannot complete their hedges within the 15 minute reporting period. So, after their trades are posted after 15 minutes, they still have more to do, these are complex hedge activities and the market dries up even further and prices widen.

And there is an extra aggravating factor that has become more evident is the ability of the dealers and other market participants to data mine the activity thathat is actually occurring in the market within the 15 minute period, to see and discern that there is a block being worked in the marketplace so that they know even within the 15 minutes that there is a big trade. The second aggravating factor is that life insurers, unlike many other market participants, have fairly transparent portfolios because they're required by state regulators, to disclose their derivatives positions. The banks can upload that data and with the ability to data mine again, they can see what is going on, perhaps after the fifteen

minutes, after the trades are reported.

They can actually see who is in the marketplace and that there's trades being done that are reflective of the activities of a particular insurance company.

So, you have these two aggravating elements to the situation. I'm mindful of the fact that under the CEA, we're supposed to have a block trading regime that accomplishes two things. The rules of the CFTC should accomplish two things which are to maintain anonymity of the block trader and be capable of maintaining a liquid market, not have a material adverse effect on the liquidity of the market. We question whether the 15 minute rule in the light of experience is accomplishing the objectives of the act and it is becoming a more apparent question and we're raising it as a matter of market risk because the life insurers obviously are using these markets to hedge their risks. So, I think it is an appropriate subject for discussion.

MR. NIXON: Thanks, Richard. Sunil do you want to?

MR. CUTINHO: Yes, I'll be very quick. I think the focus of my comments would be from a risk perspective. So, as we heard from Bis, there are expectations in terms of monetary policy in different environments especially in the U.S., Europe and Japan. But from a risk perspective, we look at surprises to those expectations. So, we get to see the common trade but we also are cognizant of the fact that there are several other things that are happening in the market that may turn out to be surprises for these normal trends. So, I think to Kristen's point earlier, one thing is for sure volatility is here to stay but it's not constant. It ebbs and flows so in some cases we see markets being far too complacent and then reacting as Kristen point out. So, I think for a CCP, and for a risk manager, that would be our primary focus when it comes interest rate environment and the future.

MR. NIXON: Thank you. I think we'll probably want to move on to the next question which seems to be everybody's favorite topic, the leverage ratio. I'd love to hear from the members of the committee, their views on the leverage ratio, and the application and the impact that it has had on market efficiency. Anat, why don't we start with you.

DR. ADMATI: Thank you. I've been sitting here waiting patiently. It is all the fault of the leverage ratio we here, that poor ratio that is jumping on it. So, let me try to put it into perspective about the hated leverage ratio. What is wrong with a lot of things that I see from where I am and I'll make a comment about that later is poorly designed regulations. So, a lot of what I see is that result and it includes the leverage ratio. I have some writing here and I can speak to it for hours because I've been thinking about it for almost a decade about what is wrong with the way we designed capital regulation including leverage ratios. Now I just want to remind us all that the ratios we're talking about are small and that there are many ways to satisfy them. You need room on your balance sheet, I hear, and all these things but there can be an expansion of the balance sheet with retained earnings too. However, every unintended consequence to everything, can often be traced to the way the regulation is implemented. In particular, in my writing, I haven't advocated a ratio at all but more an amount of equity that one plays with. Also, such a wide range to absorb losses that we're not responding to a ratio in being on that margin of that ratio. Because obviously stuff happens, stress happens and you saw about the dynamics and promptly intervening as stress builds up. The problem is that the system is so fragile that we immediately get nervous when there is a little bit of stress and I can elaborate on that.

Now a lot of words are thrown around, especially in this committee, there are obviously members of CCPs and others and then there are the CCPs. It is interesting for me to watch when they disagree but we all love liquidity. I was yesterday at Treasury and we all love credit there, love it. All these wonderful words and level playing fields also, can't have enough of all those great things. What my concern is as an academic as a non-interested party except for the public is when markets get distorted, when things are mispriced. So, we could have too much and too little of all these things, credit and liquidity and all those things. They will go boom, they will go bust. So, the question is why are they unstable or why do they get mispriced. Again, it is the distorted incentive and the failure of regulation to control them.

I've been on this committee from the start and also in the spirit of the discussion of cyber security in which we kind of came to the insight that is a collective action problem, I should mention maybe why I'm representing Better Markets and just clarify that Better Markets is a non-profit organization, it's not paying me to be here. As Petal knows, I couldn't be here representing the institution that is paying my salary to do this community service and be here because my colleagues are not here and are doing other things to advance their careers. So, I appreciate being here very much but not for myself really.

So, let me just say, some rules are costly or inconvenient but these days when we have from the very top, the mantra that regulations are costly, just that word, we have to always remember who's costs. We're talking about where there are all kinds of rules, laws and regulation. I don't want to go as basic to say that it is inconvenient for us, it has happened to me to be caught speeding but we're not going to belaying the speed limit for that ticket and we would not lobby against certain speed limits. Most of them we accept as reasonable so, I think that is a good analogy.

To summarize, I think the leverage ratio as implemented is poorly designed. The regulations related to them are inadequate and I know how to improve them. If they have unintended consequences that are bad, then we should discuss it because the intention of people like me is not to constrain all the good stuff that we should have but to get everything working efficiently without transferring risk to the public. That's all.

MR. ZUBROD: Thank you. In responding to this question, I offer the perspective as a firm that has historically represented the buy side. The buy side including end users which, in most cases, is not directly subject to capital requirements and doesn't customarily undertake capital calculations. It is not always best position to identify the exact sorts of difficulties they observe in the marketplace. However, the buy side is well positioned to speak to the difficulties themselves and to invite scrutiny about whether those difficulties are proportional to the benefits of a given policy.

On this score, we can very comfortably assert that central clearing is expensive. I have spoken to this committee before about those expenses in emphasis on the minimum fees charged by FCMs. Fees that are at least six figures per year. Fees that have risen since the early days of buy side clearing and fees that particularly burden those that transact in small volumes.

We are confident that the expenses are, in part, a function of the leverage ratio and appreciate that it is economically reasonable for FCM's to be compensated by the buy side for the costs FCM's bear in providing their services. We understand capital and funding requirements including those that result from the leverage ratio to be among the most material costs FCM's face.

However, we did not believe addressing the leverage ratio, whether through recognition of the risk reducing nature of initial margin or via mechanisms like direct clearing to be a silver bullet. Indeed, while direct clearing is at a nescient stage meriting further experience and study, it is our present expectation that direct clearing will not be a game changer for addressing the cost difficulties with clearing for smaller market participants. Of course, we would welcome being proven wrong as the concept and market matures.

We believe in FCMs costs to set up and serve clients are high, that a portion of these costs is fixed and that it is not possible to cover these costs absent sizeable minimum fees. Fee difficulties for end users have been further exacerbated as a number of FCMs have determined to leave the business. The leverage ratio no doubt contributed to these market exits. In some cases, these FCMs were among those offering more aggressive fee schedules. As a result of diminished competition from those pricing more aggressively, remaining FCM's have had greater latitude to raise prices and numerous of our clients are now subject to higher fees then existed at the beginning of their FCM relationships.

These difficulties are among the reasons we believe the end user exception from clearing and margin requirement should be expanded. We're certain financial end users do not meaningfully contribute to systemic risk because of the relatively minimal quantity of derivatives activity they undertake and because they use derivatives to reduce risk, we believe it appropriate and beneficial to scope them out of such requirements. In essence, such an approach would limit the universe of market participants to whom the high cost of clearing whether resulting from the leverage ratio or from other costs would directly apply. If appropriately tailored, such an approach could be undertaken without undermining the objectives of Dodd Frank.

While we appreciate the limits of the CFTC's authority to narrow the scope of legislative mandates or to address regulatory burdens imposed by prudential regulators, we believe an open dialogue on whether to revisit the scope of Dodd Frank mandates is timely and consistent with the CFTC's aim of fostering safe and healthy markets.

MR. NIXON: Thanks, Luke. Kristen.

MS. WALTERS: So, I would just say that as a risk manager, it certainly makes sense to limit leverage in some way. Certainly, leverage was not anyone's friend during the financial crisis. Given that I currently do risk management at a buy side firm, I can't speak to this specifically to the impact of leverage on the markets regulated by the CFTC. But what I can say is that there have been structural changes in liquidity risk in both the bond markets and the futures and centrally cleared markets. In the bond markets, there has been an ability to adapt and shift. So, principally the bond markets have been OTC in nature for many years. Post financial crisis they've shifted, in part, as a result of regulation and potentially due to reduced dealer inventory and the impact of regulatory capital on the ability of dealers to kind of intermediate markets. As a result, the markets have shifted more from purely principle to more of a hybrid, principle agent market and large asset managers like Black Rock have changed the way that they interact and engage in markets. So, we don't act as principals in markets but we're certainly acting as price makers on both sides in a way that we never have and markets are less liquid in that large blocks now get broken up quite regularly and so on.

The reason for pointing this out is that the bond markets have been able to adapt and change in addition to the way asset managers now engage directly in markets. There has also been proliferation of more electronic trading venues, anonymous, non-anonymous partly lit or dark and this has changed or shifted liquidity. So, in the bond markets we don't think that liquidity has been adversely impacted, we just think the nature of liquidity and its sources has changed. I think my question with regard to markets that are regulated by the CFTC is that the same entity, the same broker dealers that have changed the nature of how they engage in bond markets, are still the clearing members that sit behind all of the futures and centrally cleared swap activities that go through your markets. Certainly, the number of participants has decreased. We've heard CM, Clearing Members, talk about some of the difficulties and from our perspective, there has been increased interconnected risk, more concentration risk and concerns about portability in the instance of default. I don't think have an answer but I think clearly the challenge is a little bit greater for the CFTC given the fact that you just have a small number of market participants that are acting as clearing members. I'm curious to get others thoughts on that.

MR. NIXON: Thank you. Before I come back I just want to take a couple comments over here.

MR. WASSERMAN: So, this is Bob Wasserman. I spoke a little bit earlier about some of the concerns I had about our ability to port in the event of a crisis and I'm not going to come back to that. Rather I want to talk about two other points. One is we speak about things like perhaps direct clearing memberships and other solutions. They might work for some of the very large entities but I think we all know for the small hedgers, farmers and ranchers who actually, this commission was originally formed to help, those solutions are completely irrelevant. I get very concerned about the impact on those guys of the basically losing available clearing members, increases in prices and nothing that we're talking about is going to help them and that, I think, is a very real concern and should be for all of us.

The second is that I hear my learned friends at the prudential regulators talk about the importance of bank capital. Bank capital is important and covering risks is important. Having a business that doesn't cover its risk, is indeed, a bad thing. But the thing to remember is that the leverage ratio is deliberately designed, not to be risk sensitive. So, if indeed, the biggest part of this battle is over the refusal to recognize the risk reducing elements of margin. And so, if we had a risk sensitive leverage ratio, then it would cause less market distortion. So, it strikes me that that's a large part of the problem here.

The other thing is in talking to my friends and some of the bank regulators, many of them are economists and very concerned around incentives. Well, oddly enough, the leverage ratio creates incentive effects. And it is those incentive effects that, I think, are causing the problem here and thus it seems to me would be very helpful. At this point, all I have I fear is hope that eventually there is some recognition of the importance of recognizing a more risk sensitive leverage ratio. Thank you.

MR. STANLEY: Yes, I guess responding to that, a leverage ratio that was oriented toward being risk sensitive would no longer be a leverage ratio. Because the point of a leverage ratio is precisely that it is a back stop to the risk calculations that are being made by regulators. A back stop that ensures that there is a minimal level of capital and loss absorption in the system. The leverage ratio as it applies to derivatives, of course, is not simply the 5 percent leverage ratio, the 20/1 leverage ratio generally. But that 5 percent is applied to credit exposure metrics that are in turn, a very small fraction of the very all notional value of derivatives in the system. I think at commercial banks when you look at leverage capital as a fraction of notional value, it is something like three basis points. And we know that there were very large increases and non-predicted increases in netted credit exposure of derivatives soon before the crisis. And I think what the leverage ratio in the derivatives context is really about is making sure that we have some kind of secure back stop for those unexpected swings that are not predicted by regulators risk models. I don't want to go down the rabbit hole of the whole margin debate, but margin is money that is owed by people in the system whether that is banks or clearing houses to their members or to their end users. If that is in a completely segregated lock box somewhere, that's one thing that we can discuss but this is money that is owed.

I think just to go back on the liquidity discussion that was being discussed before, Anat brought this up. But liquidity is not an unalloyed good. There can be an inverse relationship between liquidity in more ordinary market circumstances and the liquidity that is available in more extreme circumstances. That is particularly true if the mechanism for supporting liquidity in more normal times is permitting excessive leverage of liquidity providers. In that circumstance, liquidity providers are going to come under stress in those extreme circumstances and they are going to pull back.

Anat made reference to changes that could be made in the leverage ratio rules and how leverage ratios are designed. I think where people are open to that but I think people have a very great concern about what the total capital is in the system under pinning people's potential exposures in stress periods. That capital is what is protecting the broader public, people who are not intermediaries in the financial system from potentially disastrous outcomes in very extreme circumstances. I do think that if one views this only from the perspective of people who are intermediaries in the financial system, one will get a somewhat skewed perspective. Because it is inconvenient for market participants to have to spend additional time finding a buyer when there is unexpected new that maybe a stressful experience for them. That is part of the natural process of markets. Market volatility is part of the natural process of markets in the face of unexpected news. Some of that additional inconvenience or stress for market participants might be the cost of protecting the broader public.

MR. NIXON: Thank you. I know we're going slightly over the time that we allotted for this topic but it is an important topic, I know, for everybody here on the committee. I Can I go to Sebastian and then Ed?

MR. KOELING: Thank you. I will

definitely agree that I can see that there is a need to look at what the leverage is in the financial system. However, I'm definitely going to agree with the fact that the way the calculations are done right now make not a lot of sense at all. Essentially, there is no calculation method whatsoever to look at any offsets and derivatives that are 99.5, 99.9 percent correlated. And it's leading to first and foremost also parties like ourselves that are trying to provide liquidity through centrally cleared markets so that the banks that we clear through are held to these leverage ratios. We are going to get excessive fees from them as well, which at the end of the day, the only thing we can do is incorporate them in the prices for the end users. It also, interestingly enough, actually leads to a lot of markets trying to steer clear from having products cleared through financial institutions which is actually counter to what we're trying to accomplish in the last five, six, seven years.

Thirdly, I think, this what we've talked about, I think, a year and a half ago, this was on the agenda the fact that there are less and less clearing members out there. Again, this is going to lead to more parties actually pulling out of this business. I know from the options perspective, obviously, the effect of these 99.5, 99.9 correlations are a lot bigger than some of the other parts of the industry. But we've seen it quite a bit where the actual competitors in this space has dwindled down to pretty much three that have a cross margin possibility between the equities and the futures space which in index options is a very large part of the markets.

And then finally, one of our clearing firms actually talked to me about this and they mentioned exactly what Bob said this morning. The portability of clients, is one of these three parties goes down, they will not be able to take any new people on board. So, the portability test that we're doing, I would hope that this is part of the test because quite frankly, I don't see how some of the clearing members will take anyone. That doesn't sound like what we try to accomplish.

MR. PLA: Thank you. So, I heard the phrase, capital is a loss absorbing mechanism. That's exactly what initial margin is. Clearing members are willing to guarantee a client's exposure to a clearing house because that potential future exposure has been prepaid heavily through initial margin and then supplemented through daily mark to market variation margin payments. So, the residual risk associated with guaranteeing a client's trades is the conditional portability of a move that is bigger than all that margin collected, times a simultaneous and solvency of the client. It is relatively low and imperially we know it is relatively low.

A couple of other thoughts. I think three things have changed in the market since the last time we've had to deal with a large scale porting of risk. We've seen continued consolidation, it is well documented, it has been flight for years. It is particularly acute in OTC swaps where I think there is a significant amount of notional. The second thing that has changed is exactly that, that we're clearing as an industry, dozens and dozens of trillions of notional more than we did back when we were dealing with the last porting under, let's say Lehman or MF Global. And the third thing that has changed is the beginning of the implementation of the Basil 3 leverage ratio.

So, the confluence of fewer participants, a greater concentration of participants especially among within that segment of the market with acute notional sizes. Capital rules that are maybe over taxing or over collateralizing or over capitalizing some of these exposures doesn't feel like a great outcome. So, I do think that it might sound alarmist to talk about porting being a risk but I think it is untested. I think it is very untested in this current regime where you've got those three confluences of indicators.

MR. CUTINHO: So, Bob left me speechless and then Marcus brought speech back to me, so, thank you, Marcus. I'd like to address some of the things that you raised as comments, very directly. I think there is a confusion when it comes to leverage ratio. You have to understand that we are not, when we are talking here, we're not talking about the clearing firm as a principle, we're talking about a clearing firm as an agent. I think that was clearly articulated by Ed. There is a difference. Nobody here is going to argue against good capital, well capitalized firms, we all share that goal. That's just not trying to flatter somebody but it is being a safer market trade for us.

As a clearing house for us, the way we look at resources is how Ed pointed out. Our margin and gross margin, client by client gross margin, is the first level of resource. So, a defaulter's margin is the first tier of resource. So, you called it an obligation, actually it is an asset, it's actually paid in. And it is remote from the agent and it is sitting at the clearing house. So, at the end of the day, the problem we have is a flawed understanding of clearing when it comes to thinking about leverage ratio. So, we are not arguing against the concept of leverage being in back stop, it is just that when you compute resources, you have to take into account the fact that resources have been collected. So, for an agent, the agent is collecting resources from their clients and actually posting it to a CCP.

Now let's talk about the implications. The implications are here as such. If our goal is a diversified set of clearing members, a diversified set of market participants and less concentration and less too big to fail or too important to fail. Then you should be on the same page as us in terms of recognizing the fact that we need as many participants as possible to have access to markets. Now, as Bob pointed out very, very clearly, futures markets or derivative markets are used as hedging tools. You have a lot of end users here around the table. They need access to these markets and they do not want to face the clearing house directly because they cannot. There are clearing firms that perform an important role from a risk perspective in monitoring the risk and making sure that on top of our margin, they collect more margin. That margin is credit sensitive margin and all of that asset according to CFTC rules, is segregated, is completely segregated from the propriety funds.

So, at the end of the day, when you look at the concept of leverage, it has no bearing, there is no relationship between that and a cleared market. So, there is a complete misunderstanding of client clearing when designing supplemental leverage ratio as it applies to bank affiliated clearing members. So, thanks for bringing my speech back.

MR. NIXON: All right. We're going to move on to the repo topic. I know the leverage ratio is near and dear to everybody's heart and we can perhaps circle back here at the end if we have time. The repo markets are obviously a critical source of short term liquidity that fuels the derivatives market and the CFTC has asked what is the state of the repo market both from a liquidity and a functioning perspective. I'd like to get some of the views from the MRAC members about the repo market. If I could, I might start off with Susan.

MS. O'FLYNN: I promise not to mention leverage ratio in this particular topic but I think it is influencing some of the changes we've seen in the repo markets. I think with regards to the functioning of the markets today, I think, interdealer things continue to function well. I think collateral has responded well. Since money market reform, we continue to see collateral being well bid and obviously a richening of collateral driven by the move of money market investors to govie funds as well as broader market requirements for collateral itself. If you think about institutionally banks requirements for margin both from a UMR and clearing perspective.

What I'd like to focus on is the client impact. I think to quote Dickens, it's a tale of two clients. We have those who want leverage and we have those who are liquidity providers. There are three core issues that continue to me to be the core ones. It is very simple. It is capacity, access and pricing. How have these changed. If we just look at capacity first and let's look at our leverage takes, their the leverage ratio has either seen dealers cut balance sheets entirely or reduced balance sheets for smaller market participants. Or you have seen kind of an intra-month provision of balance sheet which effectively disappears at month and quarter ends. So, I think it is either gone for good or it is available -- it is not available probably at times when it is most important.

When I think about the capacity for liquidity providers, there is increased liquidity in the system but less places to deploy that liquidity because it comes back to the dealer capacity to be able to provide that short term treasure repo and because of the ratio that we've just continually debated about.

So, what has the market done and what is the response. Well, we see the evolution of peer to peer platforms and they continue to grow. It is where effectively liquidity providers will face leverage takers directly. Now, I think there is still somewhat in establishment versus growth phase but I don't think they will solve the mismatch and maturity issue between those two types of market participants. But it definitely solves potential capacity issue. It also potentially creates some type of access to better pricing. Then the other option is obviously clearing. That's very topical here given the number of clearing houses here. Obviously, everyone is working on a solution to try to bring those clients into clearing.

Now, we've been very supportive of expansion of memberships for clients in repo for probably now three to four years. From a sequencing perspective, I think we've always felt liquidity providers should come into the clearing house first to be able to get the liquidity in there so it can be deployed to the institutions who seek liquidity. Now obviously not to call out on anyone, but obviously, FICC have filed with the SEC a membership solution for treasury tri party repo called, CCIT. This will allow non-RIC institutions to be able to trade reverse repo on treasuries with dealers. Which effectively will give a new trading environment where they can deploy this liquidity and be able to capture some of the pricing benefits that you see trading on GCF repo versus where the funds are actually paying on a return basis.

Now with regards to, so, that's kind of solving the capacity issue. Now, I think, there are other clearing houses working on similar type solutions but it is just the next step to be able to addressing those issues. Now, it also obviously will feed into the broader discussions that we've been talking about around CCP default management but I'm not going to focus on those there.

Now if you think about the other side of the coin, the leverage takers, how do you establish a clearing membership for institutions who seek leverage. Does the traditional FCM model work in repo. It actually doesn't. So, a number of clearing houses have been working to establish an FCM light model to be able to facilitate access of these institutions who are seeking liquidity into these clearing houses. Now many of those esteemed clearing houses are sitting around this table and I think we should see a solution, I would say, in the next 12 to 18 months' subject to regulatory approval. However, there are, I would say, different regulatory impacts for U.S. banks versus European institutions as to what the potential regulatory capital costs of actually offering that service to institutions who are seeking leverage and financing assets such as treasuries or bonds or gilts. So, I think that is one asymmetric regulatory impact we've observed and I think the clearing houses are trying to solve to that issue.

Now where does this get us all. I think with regards to we think about the three core issues, capacity, access and pricing, we've seen access disappear for clients because of dealers being constrained from a resource perspective and therefore, capacity has also been constrained. If we think about clearing being the solution, it definitely solves a capacity issue for our clients because we do believe and dealers do believe that they can provide that intermediation capacity in clearing in a way that is more resource efficient and to be able to redeploy that capacity to clients. Access will be solved by clearing houses establishing appropriate memberships for both types of clients which we all look forward to seeing.

And then pricing. So, we have observed the basis in pricing between cleared versus uncleared in many markets. I think that will probably emerge in repo too because ultimately it will come back to dealers pricing in their resources and clients being able to benefit from potentially those resource savings be it SLR or RWA capital by looking to execute those transactions in a cleared environment. So, it almost solves all three. There will be increased capacity in a clearing house that you don't see today in the uncleared markets and also in theory, pricing may be more attractive. So, I think it solves a lot of the current issues that clients are facing in the markets today. I'll stop there.

MR. NIXON: Sunil, do you want to?

MR. CUTINHO: That was a very nice set up by Susan, thank you for that. I think I would add two other things that clearing achieves. The federal reserve and thinking about reforms for the repo market was concerned about two risks. One was the run risk and the other is a fire sale risk. I think clearing is meant to solve those two as well. So, any clearing solution that is out there will have to address those two. We know from clearing and the way it manages defaults, is to actually solve for the run risk and the fire sale risk is to actually provision for liquidity during the period where the asset is being liquidated in the open market. So, I think in addition to what Susan pointed out was two additional benefits that clearing would bring to the repo market.

MR. NIXON: Tom.

MR. COYLE: Well, I represent the grain handlers, processers, feed mill so, my comments are really more granular. I'm going to make a comment about repos and actually on interest rate environment. A little bit of Susan's comment about the fact that there is a lot of liquidity in trying to find a place to go. I would say that as it comes to a grain handler, our use of capital is either from futures, derivatives, hedging margin calls or inventories. In this country, we've got growing inventories of all commodities, corn, beans, wheat, that requires more capital. Answering the question the interest rate environment, interest rates are creeping higher, doesn't really have an impact on our industry right now because prices are so low. Also get to the repo where unlike derivatives in repos, really we use repos to fund inventories. With such large inventories in this country it ends up being quite a big deal. At this point, I would say that there is ample capacity. It seems like we get a call a day from someone that wants to fund inventories and not using as much capital as they would normally use. Changes when we get prices a lot higher so, it is just kind of a heads up, at some point, it changes.

The other thing we've noticed in the industry with prices lower, we're starting to see an interest rate issue maybe on the farm community. Where you actually have farmers, who are struggling because prices are lower. Therefore, they have a harder time getting a return. The result of that is that margins in the grain industry have actually declined over the last couple of years. I would say after ten years of quite attractive margins and a lot of liquidity what we're seeing right now in the environment is that margins are shrinking. That does have an impact. It doesn't have an impact to today, but go through a period of time where you have lower margins and get a spike in prices, all of the sudden the liquidity changes quite a bit. So, again it's maybe even off topic because everything we're talking about here are futures, derivatives and hedging and what is regulated by the commission. But there is another side of funding and liquidity that relates to grain handlers.

MR. NIXON: Anymore comments on the repo markets?

MR. STANLEY: I just wanted to respond to Sunil before, so this is not about repo.

MR. NIXON: It's not about leverage ratio either is it?

MR. STANLEY: It is about the leverage ratio. Just a quick response to Sunil. I think the question that continually comes up with this is that if the margin is truly simply an asset that is held by the clearing house, then why does it appear on the banks' balance sheet. And why do we have prudential regulators consistently saying to us that in many cases, the banks do have control over investment of that margin and do receive revenue from the investment of that margin. That's number one and number two, I think all of this sort of indirectly relates to these debates over clearing house resolution. When you look at the clearing house default fund, it becomes very clear that the level of capital and the financial stability of the clearing members is something that very much could come into play in terms of where are the other sources of private sector loss absorbency once you get past margin if they are not going to be in the solvency of the clearing members. Now, I realize that clearing is a different risk management method and it relies on the exchange of margin based on market prices. It is capital only comes into play when clearing has failed in some sense or when that risk management mechanism has failed. But I think it just continues to be a really important question. How much private sector back stop do we have including through the clearing members.

MR. NIXON: Okay I know you want to answer that but we're going to go on to the last topic that the CFTC asked that you guys would talk about and that was uncleared margin. They are asking, why was there a surge in clearing of NDF's and inflation swaps after the margin rules were implemented and what was the impact on liquidity if any. Have the margin rules caused market participants to shift to other lower cost products to do their hedging. Luke, do you want to start?

MR. ZUBROD: So, Chatham serves a broad range of end users including non-financial end users such as multinational corporations and even professional football teams. Financial end users such as regional and community banks. We also serve those that uncomfortably straddle the line including real estate funds which fundamentally invest in non-financial assets through entities that are, themselves, non-financial but do so with an ownership structure that includes collective investment vehicles that are deemed financial as a matter of U.S. law.

The margin rules implemented for these entities on March 1, have been among the most consequential of the Dodd Frank reforms for the markets broadly and for many of our clients, especially those with financial affiliates. Of course, margin rules are the most germane to the issues that arose with AIG's derivatives positions which because of their illiquid nature are not of a type that would have been appropriate for clearing houses.

It is worth noting that margin and clearing rules represent a public policy wager. They were purposed to attack credit risk in the system, but they did so at the expense of increased liquidity risk. By liquidity risk, I mean that sharp market movements give rise to margin calls which, in turn, necessitate that a firm have access to liquid resources to meet those calls. In the event of insufficient liquid resources, a firm will fail and while the consequences of the failure may not be felt within the derivatives market eco system, because the firm's positions are collateralized, the derivatives market eco system will be complicit in the pain the firm's failure causes in the economy. This is not to say that I think the wager was wrong, time will tell, but I do believe we should not look at margin requirements as an unmitigated good. For example, and as previously stated, I believe margin requirements for financial end users whose positions are not systemically significant and that use derivatives for risk management purposes were established without sufficient evidence as to the potential for harm to the financial system.

The imposition of costly requirements on those undertaking societally valuable business practices, that is risk reduction activity. Which bring no harm to others, has created adverse consequences. In particular, it has increased incentives for market participants to use products or strategies that imperfectly address their risk management objectives or that address their objectives at significant costs.

In some cases, these costs can be prohibitive. For example, market participants may undertake a series of responses to these high costs associated with these requirements. They may substitute fixed rate loans for swapped floating rate loans, even though the pricing and prepayment characteristics of the floating rate loan are superior. They may substitute options for swaps or swaps for options due to the economic or administrative impacts of each of the products. They may use standardized exchange traded futures instead of customized OTC derivatives to satisfy their risk management needs generally taking on some basis risk in the process. Or they may use exempt effects forward as a substitute hedge for effects options or collars, or worse, they may choose not to hedge.

While each of these distortions and market activities suggest that market participants are, in most cases, finding ways to hedge their risks, the manner in which they hedge them, has in some cases, changed. These kinds of changes afford little or no benefit to society, even while they cause harm to the risk management disciplines of individual companies.

MR. NIXON: Do we have any other members who would like to comment on the uncleared margin situation? Susan.

MS. O'FLYNN: So, I'm just going to comment predominantly on the clearing of NDF's. So, it is a product that Morgan Stanley started clearing in 2015 so, I think, we were one of the first three. I think we've seen a migration of dealers to clear NDF's. I think some institutions probably wanted to do beforehand but, I think, it's a general sense of let's understand what the pricing of resources around both options. I think, from our perspective, I think the centralization of liquidity in a clearing house is an appropriate venue for this but also as well, it then establishes effectively a sense as to trading the product under clearing house rules and margin versus under UMR from a resource perspective. I think that ultimately gets us back to the original aim here was to essentially clear as many products as possible which are appropriate from a liquidity and risk management perspective.

I think it accelerated what a lot of institutions were planning to do but then when you think about the broader kind of currency portfolio, if you look forward you will see cross currency swaps and FX forwards are all in many clearing houses kind of plans for this year to establish essential clearing venue and environment for those types of products.

I do think it is probably more expensive to clear NDF at the moment then it is to trade under SIMM because a lot of dealers are executing their hedging activity there. So, when your direction on the clearing house, it tends to be more expensive. I don't think it necessarily a cheaper option for dealers yet. We see and expect clients to actually start clearing NDF's towards the end of this year. So, I think that will balance the members within that particular clearing house and also potentially make those margin costs more balanced. But I don't think it was a cheaper option for many dealers despite when you run the numbers on a comparable basis because it is something that we obviously look and monitor as part of our broader resource management view. I think it was a collective, I think UMR was an influence, but I don't necessarily think it resulted in cheaper margins for dealers because of who's actually clearing at the clearing house and also the risk that those dealers are bringing into the clearing house.

MR. NIXON: We have one more minute. Jerry, do you have a comment?

MR. JESKE: Sure, it relates to the commodities market. Luke mentioned the March 1 requirement for margin which actually the commission provided relief out to September. It has created some strife in connection with those that are end users that do transaction swaps that transact with a bank is. ISDA put out a protocol yet again that essentially forced folks to either opt out characterizing themselves as a non-financial entity which on a its face, one would think is a rather easy analysis to make. But when you actually look at the definition of what a financial entity is under CFTC regs and other prudential regulators, dictate a litany of various types of entities that fall under a financial entity. So, I would suggest that definition be readdressed because it is certainly not fit for purpose for many. And has caused those that are offering swaps as dealers that are non-margined, non-cleared, to make that determination between themselves. So, in other words, the relationship has been stressed. It is something that, although it has been mitigated by the relief, it is going to come about again in September.

MR. NIXON: Thank you. I think we've come to end of this session so, let me just make one or two quick closing remarks before handing the microphone over to Petal and to the Acting Chairman and Commissioner Bowen.

First of all, I want to thank all of the

MRAC members for coming here today. It has been an insightful discussion, I'm sure, for the CFTC. All of you have taken the time to leave your day jobs and come here and participate, and I'm sure that they appreciate it. One thing that I find absolutely refreshing, is the fact that all of you come here with your views and not all of them are the same. People bring different perspectives to the marketplace and a marketplace is about different perspectives. It is great to have all of you come here and share those with the CFTC.

So, before I hand that over, I just wanted to let you guys know one thing that just happened to come across, I just happened to find out recently and he's going to get very embarrassed. Our Acting Chairman here happens to be a very, very accomplished musician. He is a very good guitarist who plays in a band and he is, I'm pretty sure is at the FIA in Boca next year when he does the Chairman's remarks, he is going to show up there with the guitar and he's going to be singing to all of you, a very famous song by the Rolling Stones called, You Can't Always Get What You Want. On that note, I'll hand it back over to Petal.

MS. WALKER: Thank you, John. It is now time for closing remarks.

CHAIRMAN GIANCARLO: I don't know how to respond to "you can't always get what you want," but we've certainly heard a lot of both short and long term concerns that the commission has been asked to take into account as we look at some things that are coming up in the next few months, but also some longer term concerns about the health and the stability and the durability of the markets that we oversee. The perspective that, as I listened to the remarks, all of which I found very helpful across the board, all well based, well argued. At the end of the day, the concern that I have is that our markets continue to serve healthy risk transfer, which is essential to economic growth. Which has been something that I've been talking about since I came to this commission and will continue to talk about for so long as I serve on this commission. So, when I view the issues, I think about them in terms of are they supportive of the strength, vitality and durability of the markets that are necessary for risk transfer. Because without risk transfer, you can't have healthy investment. Healthy investment is necessary for economic growth, which is certainly something that we've had a public discussion on in the past few months here in this country, and I think that the emphasis certainly, of the new administration, is toward generating healthy, strong, sustainable and broad-based economic growth. So, those are the things I'll bear in mind as I reflect on some of the things we've heard today. Over to our sponsor.

COMMISSIONER BOWEN: Great, thank you so much. I really wanted to thank our facilitators today who did a fantastic job. Susan O'Flynn, Dennis McLaughlin and John Nixon, really tough questions. All three panels were extremely substantive. I think I said at the beginning that I thought that this would be one of the most interesting and informative discussions we've had which was a pretty high bar. Well, you guys actually met that today so I have no idea what we're going to do in our June meeting but it is a pretty high bar. I also want to thank our key speakers who provided important insight for our commission to consider and I finally want to thank our logistical staff, my staff, Acting Chairman Giancarlo and his staff for participating today. Thanks so much everyone.

MS. WALKER: The meeting is adjourned. For those MRAC members who are joining us for lunch, we're going to meet at the door and try to leave at 1:25. Thank you.

(Whereupon, at 1:18 p.m., the PROCEEDINGS were adjourned.)

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CERTIFICATE OF NOTARY PUBLIC

DISTRICT OF COLUMBIA

I, Carleton J. Anderson, III, notary public in and for the District of Columbia, do hereby certify that the forgoing PROCEEDING was duly recorded and thereafter reduced to print under my direction; that the witnesses were sworn to tell the truth under penalty of perjury; that said transcript is a true record of the testimony given by witnesses; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this proceeding was called; and, furthermore, that I am not a relative or employee of any attorney or counsel employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

(Signature and Seal on File)

Notary Public, in and for the District of Columbia

My Commission Expires: March 31, 2021