U.S. COMMODITY FUTURES TRADING COMMISSION (CFTC)

MARKET RISK ADVISORY COMMITTEE (MRAC)

Tuesday, July 21, 2020

9:34 a.m.

Commodity Futures Trading Commission - CFTC

Teleconference

MRAC MEMBERS IN ATTENDANCE

Nadia Zakir, MRAC Chair, Pacific Investment Management Company LLC (PIMCO), Executive Vice President and Deputy General Counsel

B. Salman Banaei, Executive Director, Global Head of Clearance and Settlement, IHS Markit

Stephen Berger, Managing Director and Global Head of Government & Regulatory Policy, Citadel

Richard Berner, Clinical Professor of Management Practice in Finance and Co-Director of the Stern Volatility and Risk Institute, NYU Stern School of Business (Special Government Employee)

Lee Betsill, Managing Director and Chief Risk Officer, CME Group

Peter Borish, Chief Strategist, Quad Group

Biswarup Chatterjee, Global Head of Markets BCE Management, Citigroup

Alicia Crighton, Chief Operating Officer, Prime Services, US Clearing, Goldman Sachs, Futures Industry Association (FIA)

Shelly Goodwin, Regional Compliance Director, BP IST Global Americas

Matthias Graulich, Chief Client Officer, Eurex Clearing AG

Graham Harper, Principal Traders Group, FIA

Frank Hayden, Vice President, Trading Compliance, Calpine Corporation

Lindsay Hopkins, Clearing House Counsel, Minneapolis Grain Exchange

Annette Hunter, Senior Vice President and Director of Accounting Operations, Federal Home & Loan Bank of Atlanta

Demetri Karousos, Chief Risk Officer, Nodal Clear LLC, and Managing Director, Market Administration and Surveillance, Nodal Exchange LLC

Eileen Kiely, Managing Director, Deputy Head of Counterparty & Concentration Risk, BlackRock

Derek Kleinbauer, Global Head, Rates and Equity e-Trading, Bloomberg LP, and Vice President, Bloomberg SEF LLC

Laura Klimpel, Managing Director, Clearing Agency Services at the Depository Trust & Clearing Corporation (DTCC)

Robert Mangrelli, Director, Chatham Financial

Kevin McClear, Chief Risk Officer, Intercontinental Exchange Inc.

Dennis McLaughlin, Group Chief Risk Officer, LCH Group

Craig Messinger, Senior Advisor, Virtu Financial

Dale Michaels, Executive Vice President, Financial Risk Management, The Options Clearing Corporation

John Murphy, Managing Director and Global Head of the Futures Division, Mizuho Americas, Commodity Markets Council

Sam Priyadarshi, Principal, Global Head of Portfolio Risk Management and Derivatives, Vanguard

Jonathan Raiff, Senior Managing Director and Deputy Head of Global Markets, Nomura Global Financial Products, Inc.

Marnie Rosenberg, Managing Director and Global Head of Clearinghouse Risk & Strategy, JP Morgan

James Shanahan, Vice President, Financial Regulatory Compliance, CoBank ACB

Lisa Shemie, Associate General Counsel,

Cboe's Legal Division, Chief Legal Officer, FX and Cboe SEF

Dr. Betty Simkins, Head of Finance Department, Professor and Williams Companies Chair in Business, Oklahoma State University, Spears School of Business (Special Government Employee)

Tyson Slocum, Director, Energy Program, Public Citizen

Sujatha Srinivasan, Co-Head of Market Risk Specialists, Securities Division, Goldman Sachs

Marcus Stanley, Policy Director, Americans for Financial Reform

Robert Steigerwald, Senior Policy Advisor, Financial Markets, Federal Reserve Bank of Chicago

Janine Tramontana, Senior Counsel and Vice President, Federal Reserve Bank of New York

Suzy White, Chief Risk Officer, Global Banking & Markets and Commercial Banking, Americas, HSBC

Scott Zucker, Chief Administrative Officer, Tradeweb

Speakers in Attendance

Thomas Wipf, MRAC Interest Rate Benchmark Reform Subcommittee (Subcommittee) Chair and Vice Chairman of Institutional Securities, Morgan Stanley

Bob Litterman, MRAC Climate-Related Market Risk Subcommittee Chairman, Founding Partner and Risk Committee Chairman, Kepos Capital

Chris Barnes, Clarus Financial Technology

Adam Peralta, Head of Rates Electronic Trading, Bloomberg LP

Elisabeth Kirby, Head of Rates Product and Strategy, Tradeweb

CFTC Commissioners and Staff in Attendance

Rostin Benham, Commissioner, MRAC Sponsor

Heath Tarbert, Chairman

Brian D. Quintenz, Commissioner

Dan Berkovitz, Commissioner

Dawn D. Stump, Commissioner

Alicia Lewis, Designated Federal Officer (DFO), Special Counsel, Division of Clearing and Risk, CFTC

Richard Haynes, Supervisory Risk Analyst, Risk

Surveillance Branch, Division of Clearing & Risk, CFTC

Sayee Srinivasan, Deputy Director, Risk Surveillance Branch, Division of Clearing & Risk, CFTC

AGENDA

P R O C E E D I N G S

TECHNICAL SUPPORT: Welcome, and thank you for standing by.

At this time, all participants are in a listening-only mode until the question and answer session of today's call. If you would like to ask a question, press *1 on your phone, record your name, and your line will be open.

Today's conference is being recorded. If you have any objections, you may disconnect at this time.

I would like to now turn the meeting over to Ms. Alicia Lewis. She may begin when ready. Thank you.

MS. LEWIS: Good morning, everyone. As the MRAC Designated Federal Officer, it is my pleasure to call this meeting to order.

Before we begin this morning's discussion, I would like to turn to the members of the Commission and the MRAC chair for opening remarks. We will start with Commissioner Rostin Behnam, MRAC Sponsor; followed by Chairman Tarbert; then Commissioner Quintenz; followed by Commissioner Stump; then Commissioner Berkovitz; and finally, Nadia Zakir, the MRAC chair.

Now we will have remarks from Commissioner Behnam.

COMMISSIONER BEHNAM: Thank you, Alicia. Good morning, and welcome to a virtual meeting of the CFTC's Market Risk Advisory Committee. I want to thank Chairman Tarbert and Commissioners Quintenz, Stump, and Berkovitz for joining today's meeting. As many of you know, we have a very busy week at the Commission, so I appreciate their time and their willingness to listen to this important meeting.

I also want to thank and acknowledge the MRAC members and the subcommittee chairs for their tireless and hard work over the last few months, and the speakers who will participate on today's panels.

I would also like to thank Nadia Zakir, the MRAC chair, for her leadership, and of course Alicia Lewis, the committee's Designated Federal Officer, for her commitment to making the MRAC and its subcommittees a great success.

Finally, I would like to recognize and welcome several new members to the MRAC, and several members who we have lost in the past few months, as well.

I would like to acknowledge and thank for their past service Vincent Johnson from BP, Isaac Chang from AQR, Rana Yared from Goldman Sachs, Kristen Walters from BlackRock, and Sebastian Koeling from Optiver.

As we have lost them, we have also gained some new members, and I would like to welcome them to the committee. Mr. Peter Borish, Chief Strategist at Quad Group; Ms. Eileen Kiely, Managing Director for BlackRock; Mr. Graham Harper, representative of the FIA Principal Traders Group; Ms. Sujatha Srinivasan, Securities Division at Goldman Sachs; Sir Bill Tomb, Legal and Regulatory at the Vanguard Group; Shelly Goodwin, Regional Compliance Director at BP Global Americas; and finally, Ameribor, which is going to be an organizational member of the Interest Rate Benchmark Reform Subcommittee, and its representative Dr. Richard Sandor, who I'm very pleased to have as a representative and a member of the Benchmark Reform Subcommittee.

There are few words that could rightly illustrate the change that has occurred since we last met in December 2019 when we were, as I said, kicking on the heels of 2020. In the few short months since then, the COVID-19 pandemic has kicked back quite a bit, profoundly altering our country and the world. Every day, nearly all of our decisions and actions are impacted by COVID-19, whether we are logging on for our virtual work experience, using a dress shirt for a Zoom meeting, or putting on a mask to venture out for groceries.

This global health crisis has pushed us further down a path of economic crisis. Comparable only to the Great Depression and the Great Recession, the last few months have demanded unparalleled fiscal and monetary intervention and broad-based local, state, and federal action not seen before in history.

Social unrest has laid bare decades long racial inequity, which our country's greatest leaders, like the late Congressman John Lewis, fought tirelessly for over many decades. However, without addressing these issues directly, which demands action by each and every one of us, the country cannot achieve its highest ideals of life, liberty, and happiness. I am hopeful that we emerge from the pandemic with a society that more accurately reflects these ideals for everyone.

As this swath of uncertainty reshapes the future of our country on what seems like a daily basis, it is easy to forget that today, July 21st, marks the 10th anniversary of the enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act. Two short, but challenging years after the 2008 financial crisis exposed the contagion that had built up within a system many believed to be safe, President Obama signed the landmark law that altered both market landscape and scope of financial regulation.

Many of the financial reforms enacted in the wake of 2008 served as well-placed shock absorbers during the extreme market volatility experienced in March of this year, shortly after the COVID-19 pandemic gripped its teeth on American soil. The CFTC and its sister regulators demonstrated that a regulatory foundation promoting financial stability by improving accountability through transparency and focusing on risk and risk transmission can be resilient in a time of crisis. While the last several months have seen a host of targeted interventions, our core regulations remain solid.

While all of us have had to reconfigure our social and work lives to re-evaluate short and long-term goals, and to explore new means of accomplishing them, lessons learned should further strengthen our conviction to support and advocate for policy that builds stronger, more resilient financial markets.

It has been over seven months since we last convened the full committee, but the pandemic has demonstrated that technology can keep things running pretty close to schedule. Nothing pleased and impressed me more than hearing that the MRAC subcommittees, after a brief pause during the most difficult market and transition periods in March and April, continued to make progress.

This morning, we will receive updates from the MRAC's four subcommittees -- Interest Rate Benchmark Reform, Climate-Related Market Risk, Market Structure, and Central Counterparty Risk and

Governance. I would like to briefly address the latter three and then provide more in-depth comments regarding the Interest Rate Benchmark Reform Subcommittee and the work being done by the CFTC and other official sector bodies across the globe.

Much of the discussion today, specifically from the CCP Risk and Market Structure Subcommittees, will focus on the impact the COVID-19 pandemic has had on market activity and structure, and elements of central counterparty clearing. We will also hear from the Climate-Related Market Risk Subcommittee Chairman, Bob Litterman, on their progress.

The COVID-19 pandemic, itself a harbinger of the potential consequences of climate change, has further solidified my view that financial regulators must prepare for the risk that climate change poses to our economy, markets, and public safety. Tail risks, as we call them, although unlikely, are possible. Regulators, in concert with private market participants, must work together to build a more resilient and better-prepared financial ecosystem for the future. Incremental investments today can lead us to better outcomes tomorrow.

On that note, I am pleased many institutions and political leaders are thinking about sustainability of the foundations for a new, stronger, more modern economy.

Closer to the CFTC and derivatives markets, just last week the European Capital Markets Institute at the Centre for European Policy Studies, in cooperation with ISDA, published a paper on the role of derivatives in sustainable finance. Among other things, the paper highlights how the derivatives markets can help renewable energy innovators, manufacturers, and financial institutions, to name a few, hedge a suite of risks through derivatives products as they each tackle climate change and also meet strong demand for ESG-related products. I am hopeful that this becomes more than just a beginning.

Turning back to today's agenda, we will begin this morning with an update from Tom Wipf, Chairman of the MRAC's Interest Rate Benchmark Reform Subcommittee, and also Chairman of the ARRC. One of my last public presentations was at the 2020 ISDA/SIFMA AMG Benchmark

Strategies Forum in New York City. I used my time to provide an overview of the current efforts in the U.S. with a focus on the progress of the ARRC and our own Benchmark Subcommittee, and initiatives that were, at the time, upcoming. These initiatives included ISDA's decision to re-consult on how to implement pre-cessation fallbacks, second opportunity to build consensus, and the MRAC's sponsorship of the tabletop exercise in advance of the October 2020 single-step proposals by CME Clearing and LCH Limited of the transition of discounting for certain products to SOFR.

My word for that day was "progress." My message was borrowed from the ultimate Renaissance man, Bucky Fuller, who promoted working harmoniously, like the crew of a ship, for the greater good in building new models when existing ones become obsolete. Bucky would be pleased that the pandemic has not slowed our collaborative and often cross-border efforts. Indeed, he would be pleased to know that it has further encouraged us to move towards the end of LIBOR and forward with a new model.

As Andrew Bailey, Governor of the Bank of

England, noted last week, the COVID pandemic and the market turbulence that ensued further proves that LIBOR is not sustainable, noting low levels of underlying activity make it fragile and more susceptible to liquidity and amplification effects in financial markets, and heavy reliance on expert judgment does impact its robustness and sustainability.

John Williams, President and CEO of the Federal Reserve Bank of New York, similarly remarked that the pandemic confirmed a resilience of robust reference rates that are a fair representation of the underlying market, noting, "On a backdrop of enormous turmoil and uncertainty both in the financial markets and the broader economy, SOFR was a dog that didn't bark or bite."

This has been true of so much of our progress over the last few years. The success may not have attracted headlines, but it demonstrated that during a tumultuous period, the new reference rates are a proven solution.

I am pleased to report that on May 14th, ISDA published a report summarizing the final responses to its consultation of pre-cessation fallbacks, the derivatives referenced to LIBOR. The consultation asked whether the 2006 ISDA definitions should be amended to include fallbacks that would apply to covered derivatives referencing LIBOR, following permanent cessation of the benchmark rate non-representative, pre-cessation date, whichever occurs first.

ISDA plans to publish a supplement to the 2006 ISDA definitions with protocol to allow firms to incorporate the fallbacks into new and legacy derivatives with a target launch in the near future. Protocol will be voluntary and will amend contracts only between two adhering parties, so it will be incumbent upon all market participants to sign on.

In June, the Interest Rate Benchmark Reform Subcommittee held a virtual tabletop discussion during a five-hour interactive session. Members used scenario analysis to identify areas that could strengthen the current discounting transition proposals. This exercise provided valuable insight into overall market preparedness. And I look forward to hearing from

Chairman Wipf on the lessons learned from that exercise and any recommendations for potential action items.

The ARRC recently acted on one such item. On June 17th, the ARRC filed the letter with the CFTC's Division of Swap Dealer and Intermediary Oversight. DSIO and Commission staff are monitoring the fluid situation relating to transition and the single-step event in October of 2020, and their response, as always, will be nimble and appropriate.

The Commission, as always, has also been working closely with ARRC on several related issues. On December 19, DSIO and CFTC's Division of Market Oversight and Clearing and Risk issued staff no-action letters providing relief to market participants relating to the transition of swaps referencing IBORs. More recently, the ARRC requested each of the three CFTC divisions to consider revising the existing relief to better reflect new industry developments.

I am confident the Commission, in conjunction with the support of staff action, will continue to support appropriate relief to facilitate the transition. There is so much to be done, and we are all continuing to explore our options and propose new solutions.

I have many times echoed the remarks of Governor Bailey that transitioning away from LIBOR should be market-driven, and I have also acknowledged that regulators and authorities have a critical role to play. I strongly encourage all market participants, large and small, to focus their energy and resources, if you haven't already, on transition away from LIBOR. It is incumbent on market safety and soundness and will result in more resilient financial markets.

As we move through 2020, I think the word of the year is "flexibility." We have many challenges and uncertainties, but with these come many opportunities. We need to embrace them all and continue to move forward together. I'm hopeful that will result in an even stronger financial system in a nation that truly reflects our highest ideals.

I want to thank everyone for their participation. I hope everyone is doing well, staying safe. And again, thanks to the Commission and my fellow colleagues, the chairman, and Commissioners

Quintenz, Stump, and Berkovitz for joining us today, and all of the individuals who made today's meeting come to fruition. I appreciate your time, your dedication, and your commitment, and I certainly look forward to today's discussion.

Thank you. Alicia, back to you.

MS. LEWIS: Thank you, Commissioner Behnam.

Chairman Tarbert?

CHAIRMAN TARBERT: Good morning, everyone, and thank you all for attending this Market Risk Advisory Committee meeting, or the MRAC, via teleconference. I would especially like to thank Commissioner Behnam for his leadership and his staff for convening this meeting. I'm also grateful to you, Alicia, for being the Designated Federal Officer and for organizing this meeting. And, of course, I also must thank Nadia Zakir for serving as the MRAC chair, and all MRAC members for taking the time to share your valuable perspectives.

A number of important issues will be discussed this morning, including climate-related market risk, CCP risk and governance, market structure, and interest rate benchmark reform. These are all really important issues, and I look forward to the discussion. This meeting will also discuss the performance of the market during the early months of the COVID-19 pandemic in the United States.

This morning, I just want to say a few words about market volatility during this time, and then also about the LIBOR transition.

So, in terms of market volatility during the early months of the pandemic, well, we witnessed significant volatility in the derivatives markets, particularly in the early months. For example, we saw a historic drop in the May futures contract for West Texas Intermediate Crude, which briefly traded at negative prices for the first time ever. Clearly, there were unique macroeconomic factors at play -- a historically high supply of oil, a fight between Saudi Arabia and Russia for market share, and a simultaneous drop in demand that was unprecedented, both in speed and severity, due to the coronavirus. The markets were digesting a lot of information and it happened to coincide with the expiration of a futures contract.

The possibility of negative prices itself was not a surprise to the CFTC. For weeks, we had been in regular contact with exchanges in anticipation of such an event. To help markets prepare, we issued a joint staff advisory to remind DCMs, FCMs, and DCOs of their responsibility to prepare for the prospect that certain contracts may continue to experience extreme market volatility, low liquidity, and possibly negative pricing.

We have completed an initial draft of a detailed forensic study of the West Texas Intermediate crude oil price aberration on April 20th. It led to negative oil prices, and we plan to make that report public at some point this fall. The analysis points to the confluence of fundamentalist technical reasons, including a few market structure considerations that have not previously highlighted, that we will address to ensure that the price formation, price discovery, reliability, and soundness of this important derivatives market that serves our U.S. energy industry is further strengthened.

One of the most interesting things about the recent market volatility is how well the derivatives markets have performed. Far from amplifying risks throughout the financial system, the derivatives markets, so far, have acted as shock absorbers. Unlike the 2008 financial crisis, derivatives have internalized the impact of market swings. While no one can predict the future, the derivatives markets have been resilient in part because the CFTC has deployed tools to prevent financial contagion.

Over the past few months, the CFTC has been focused on responding to the tremendous impact of COVID-19. First, the agency has continued to monitor closely and prioritize agriculture and energy markets. And, as I just mentioned, we issued a joint staff advisory on market volatility.

Second, we have issued additional targeted, temporary relief to market participants. This includes relief to registrants listing new principals and to applicants for registration as associate persons and the requirement to submit a fingerprint card for those individuals.

I'm proud how the CFTC has risen to the

occasion, acting on a bipartisan basis to approve more than a dozen temporary relief measures since the crisis began. And, as Commissioner Behnam stated, this has been the year of flexibility.

Third, we have continued to bolster the CFTC's customer education efforts. Times like this unfortunately create new opportunities for fraud, and we have increased our efforts to arm the public with information so they can detect and avoid these illegal schemes.

And finally, the CFTC's advisory committee, including the MRAC, has been hard at work in enabling our Commission to gain valuable insight from external stakeholders who are in the markets and on the ground.

Finally, turning to LIBOR transition, I'm looking forward to the report by our Chairman, Tom Wipf, on the tabletop exercise conducted in June for the transition to SOFR. And I'd like to thank Tom, Commissioner Behnam, and Alicia for their leadership in this exercise.

The MRAC Interest Rate Benchmark Reform Subcommittee's work has helped set the path for what I anticipate will be a smooth transition away from LIBOR and other impaired interest rates.

I would also stress that the CFTC is in active dialogue with the ARRC on various issues affecting the transition. We are working to provide reasonable relief to market participants to both encourage the transition away from LIBOR and to make that transition as smooth as possible.

In closing, let me just emphasize how important these advisory meetings are to our Commission as we consider the most pressing issues facing our markets today.

Thank you very much, everyone, for allowing me to be here, attend, and listen.

MS. LEWIS: Thank you, Chairman Tarbert.

Commissioner Quintenz?

COMMISSIONER QUINTENZ: Good morning. Thank you, Alicia, and thank you for all of your work with the MRAC committee. No official opening remarks this morning. I just would like to thank, as always, Commissioner Behnam for his strong leadership of this group and all of the work that has been able to be accomplished, and work left to do. And I thank the chair, thank all the subcommittee chairs. I really appreciate everyone's efforts and initiatives to bring issues in front of the Commission.

Thank you.

MS. LEWIS: Thank you, Commissioner Quintenz. Commissioner Stump?

COMMISSIONER STUMP: Thanks, Alicia.

I just wanted to commend you all for pulling such a comprehensive meeting together. Even long prior to the COVID-19 pandemic, the Market Risk Advisory Committee posted a very efficient agenda. And I want to commend Commission Behnam, Alicia Lewis, and Chair Zakir, and all of the members for the committee, for furthering those goals while also responding to the more immediate events that are impacting our derivatives market.

As the Commission has managed the circumstances of the past few months, I have found that engaging with all of the CFTC advisory committees has become even more critical and it has become a tremendous resource to the Commission.

I also wish to thank all of the members of the advisory committee for volunteering their time and expertise for the benefit of our effort, and I look forward to all the presentations today. Thank you.

MS. LEWIS: Thank you, Commissioner Stump. Commissioner Berkovitz?

COMMISSIONER BERKOVITZ: Thank you, Alicia. Good morning, and good morning to all the MRAC committee members.

I want to thank Commissioner Behnam for his leadership on the MRAC and bringing this very timely meeting to our attention. It is absolutely critical that we stay informed by market participants to try to keep up with all of the significant events in the market that are occurring at this time, and there's no better way than to get it straight from our participants.

Unfortunately, the -- we have been managing under social distancing to accomplish the work of the Commission, but I -- although we can accomplish what we need to do, it's never really as effective as when we can have in-person meetings, people coming in and out of the building, and our ability to visit people throughout the country and the world in these markets to learn firsthand. So, meetings like this are especially opportune and appropriate, and I'm looking forward to today's discussion.

In addition to Commissioner Behnam, I'd like to thank both Nadia and you, Alicia, for all the work you put into this. And, finally, I'd like to wish everybody a happy Dodd-Frank day.

Thank you.

MS. LEWIS: Thank you, Commissioner Berkovitz.

Many thanks to the chairman and the commissioners for their opening remarks.

Now I would like to turn to Chair Zakir for her remarks and to start today's discussion.

CHAIRPERSON ZAKIR: Thank you, Alicia. Good morning. Let me start by thanking the Commission, including Chairman Tarbert, Commissioners Berkovitz, Stump, and Quintenz, and in particular, Commissioner Behnam for his sponsorship and support of the MRAC. Special thanks to Alicia Lewis for her leadership in organizing today's meeting.

I also want to thank the members of the MRAC, and, in particular, each of the subcommittee chairs for all of their very hard work over the past several months in hosting meetings, setting agendas, and furthering the work of the Committee despite the challenges posed by the global pandemic.

Today's MRAC discussion will center around the impact of the COVID-19 pandemic on various aspects of the derivatives market. As described in the Agenda, we have a number of important updates from each of our subcommittees, including moderated discussions, and I look forward to hearing from our members on their respective experiences and perspectives with respect to the impact of COVID on the functioning of the derivatives market.

Before we begin, we would like to do a roll call of the members and speakers on the phone so we have your attendance on the record. After Alicia says your name, please indicate that you are present, and then please mute your line.

MS. LEWIS: Okay. Nadia Zakir, PIMCO?

CHAIRPERSON ZAKIR: Here.

MS. LEWIS: Salman Banaei, IHS Markit.

MR. BANAEI: I'm here.

MS. LEWIS: Stephen Berger, Citadel?

MR. BERGER: I'm here.

MS. LEWIS: Richard Berner? Richard Berner?

(No response.)

MS. LEWIS: Lee Betsill?

MR. BETSILL: I'm here, Alicia.

MS. LEWIS: Peter Borish, Quad Group? Peter Borish, Quad Group?

(No response.)

MS. LEWIS: Can everyone please mute their phone?

Peter Borish, Quad Group?

(No response.)

MS. LEWIS: Bis Chatterjee, Citigroup?

MR. CHATTERJEE: Hey, Alicia, it's Bis.

MS. LEWIS: Alicia Crighton, FIA?

MS. CRIGHTON: Hi, I'm here.

MS. LEWIS: Shelly Goodwin, BP?

MS. GOODWIN: I'm here.

MS. LEWIS: Matthias Graulich, Eurex?
MR. GRAULICH: I'm here, Alicia.
MS. LEWIS: Graham Harper?
MR. HARPER: Hi, Alicia. I'm here.
MS. LEWIS: Frank Hayden, Calpine?
MR. HAYDEN: Hi, I'm here.
MS. LEWIS: Lindsay Hopkins, Minneapolis Grain Exchange?
MS. HOPKINS: I'm here.
MS. LEWIS: Annette Hunter, Federal Home Loan Bank of Atlanta?
MS. HUNTER: Hi, I'm here.
MS. LEWIS: Demetri Karousos, Nodal Exchange?
MR. KAROUSOS: Hi, Alicia. Good morning. I'm here.
MS. LEWIS: Eileen Kiely, BlackRock? Eileen Kiely, BlackRock? Eileen Kiely, BlackRock?
(No response.)
MS. LEWIS: Derek Kleinbauer, Bloomberg SEF?
Derek Kleinbauer, Bloomberg SEF?
(No response.)
MS. LEWIS: Laura Klimpel, DTCC?

MS. KLIMPEL: I'm here.

MS. LEWIS: Robert Mangrelli, Chatham? Robert Mangrelli, Chatham?

(No response.)

MS. LEWIS: Kevin McClear, ICE?

MR. McCLEAR: Good morning. I'm here.

MS. LEWIS: Dennis McLaughlin, LCH?

MR. McLAUGHLIN: Good morning. Present.

MS. LEWIS: Craig Messinger, Virtu?

MR. MESSINGER: Present, Alicia.

MS. LEWIS: Dale Michaels, OCC? Dale Michaels, OCC?

(No response.)

MS. LEWIS: John Murphy, Commodity Markets Council?

MR. MURPHY: Good morning.

MS. LEWIS: Sam Priyadarshi, Vanguard?

DR. PRIYADARSHI: Good morning, Alicia. I'm here.

MS. LEWIS: Jonathan Raiff, Nomura?

MR. RAIFF: Hi, I'm here, Alicia. Thank you.

MS. LEWIS: Marnie Rosenberg, JP Morgan?

MS. ROSENBERG: Good morning, Alicia. I'm here.
MS. LEWIS: Jim Shanahan, CoBank?
MR. SHANAHAN: Good morning, Alicia. I'm here.
MS. LEWIS: Lisa Shemie, Cboe?
MS. SHEMIE: Hi, Alicia. I'm here. Thanks.
MS. LEWIS: Betty Simkins?
DR. SIMKINS: Good morning, I'm here.
MS. LEWIS: Tyson Slocum, Public Citizen?
MR. SLOCUM: Good morning, present.
MS. LEWIS: Sujatha Srinivasan?
MS. SRINIVASAN: Good morning, I'm here.
MS. LEWIS: Marcus Stanley?
VOICE: Tom Wipf is here.
MS. LEWIS: Marcus Stanley, American Financial Reform?
(No response.)
MS. LEWIS: Suzy White, HSBC?
MS. WHITE: Yes, I'm here, Alicia.
MS. LEWIS: Scott Zucker, Tradeweb?
MR. ZUCKER: Yeah, I'm here. Good morning.

MS. LEWIS: Bob Steigerwald, Chicago Fed?

MR. STEIGERWALD: Present.

MS. LEWIS: Janine Tramontana, New York Fed? Janine Tramontana, New York Fed?

(No response.)

MS. LEWIS: Okay. Just in case, if people have joined since I started the roll.

Richard Berner?

(No response.)

MS. LEWIS: Peter Borish?

(No response.)

MS. LEWIS: Peter, I need you to unmute yourself. I have to have you on the record.

(No response.)

MS. LEWIS: Derek Kleinbauer?

(No response.)

MS. LEWIS: Eileen Kiely?

(No response.)

MS. LEWIS: Rob Mangrelli?

(No response.)

MS. LEWIS: Dale Michaels?

(No response.)

MS. LEWIS: Marcus Stanley?

(No response.)

MS. LEWIS: Janine Tramontana?

(No response.)

MS. LEWIS: Okay. So, subcommittee representatives, please unmute your phones. After I say your name, please indicate that you are present, and then mute your line.

Tom Wipf?

MR. WIPF: Present.

MS. LEWIS: Bob Litterman? Bob Litterman?

(No response.)

MS. LEWIS: And that concludes the roll call, Nadia.

CHAIRPERSON ZAKIR: Thank you, Alicia. Just a few logistical reminders.

Committee members and speakers, please keep your phones on mute during the presentations and refer to the meeting instructions should you wish to make a comment or ask a question. I will recognize the members who wish to speak.

If there are follow-up comments or questions after your initial statement, please be sure to state your name and your firm. All of the slides and presentation material referenced on today's call are available on the Commission's website.

Turning to today's agenda, our first order of business is a status report from our four subcommittees, which cover Interest Rate Benchmark Reform, Climate-Related Market Risk, Market Structure, and CCP Risk and Governance.

MRAC members, I will open the floor to questions after each subcommittee's report. Again, please refer to the meeting instructions for directions on how to ask a question or make a comment.

With that, we will start with the Interest Rate Benchmark Reform Subcommittee. Many thanks to the subcommittee and its chair, Tom Wipf, Vice Chairman, Institutional Securities at Morgan Stanley, and chair of the Alternative Reference Rates Committee, for all of the progress and great work thus far.

Tom, please provide your report.

MR. WIPF: Thank you very much, Nadia. I want to take a moment to thank Commissioner Behnam and

Alicia Lewis for their leadership on this work; Nadia, your support from the MRAC; the broader Market Risk Advisory Committee and the rest of the commissioners and the chair and staff of the CFTC for the continuing support around the work of this subcommittee. In particular, the subcommittee membership, since we last spoke, has expanded materially, and we feel it covers a diverse set of views and perspectives, and we thank the CFTC for the work involved and the support for this expansion.

I would also like to thank the members of our subcommittee, both pre-existing members and newly added members, for their hard work over the past several months. The tabletop exercise that we conducted on June 2nd was made possible by countless hours of work from all the members. I continue to be appreciative of the group's commitment towards the MRAC's goal for us to be additive to the LIBOR transition efforts from the ARRC and other groups.

I'd like to begin today by first recapping key developments in the LIBOR transition that have occurred since we last spoke in December, and then we'll provide an overview of the subcommittee's tabletop exercise that explored the proposals from CME Clearing and LCH Limited regarding the single-step transition for discounting and price alignment interest for certain products scheduled for October of this year, 2020.

So, first, since December, there have been a number of important developments on LIBOR transition. Some have been already mentioned based on the comments we've heard from the official sector last week. These are driven by both regulators and market participants, industry groups, and work -- and central bank working groups, as well as this subcommittee.

The regulatory developments include the following: The Financial Stability Board and the Basel Committee on Banking Supervision published a report on supervisory issues associated with the benchmark transition.

Federal Financial Institution's Examination Council, FFIEC, on behalf of its members, issued a statement to highlight the financial, legal, operational, and consumer protection risks that will result from the expected discontinuation of LIBOR, and encourage supervised institutions to continue their efforts to prepare for this change by addressing the associated risks.

U.S. Treasury published and received comments on a Request for Information exploring the possibility of issuing a SOFR index floating rate note.

The Financial Accounting Standards Board issued an accounting standards update to provide temporary, optional guidance to ease the potential burden in accounting for reference rate reform.

I would also like to note a few new case-specific regulatory issues that do have global implications for the transition away from LIBOR.

The UK Government announced their intention to legislate to amend and strengthen the existing regulatory framework for critical benchmarks, such as LIBOR, rather than directly to impose legal changes on LIBOR-referencing contracts that are governed by UK law. In particular, they suggest that they will introduce amendments to UK benchmark regulation to ensure that the FCA's powers are sufficient to manage an orderly transition from LIBOR. This may enable the FCA to direct a methodology change for a critical benchmark in circumstances where the regulator has found that the benchmark's representativeness will not be restored and where action is necessary to protect consumers and/or to ensure market integrity.

The FCA and the Bank of England released a statement on the impact of the coronavirus on firms, LIBOR transition firms, noting that the ultimate year-end 2021 deadline persists. Other global regulators corroborate this view in very clear terms.

Moving to market developments. The ARRC has been hard at work this year, increasing the frequency of meetings substantially, particularly during the challenges we face during COVID.

Some of the products we've published are, first, best practices on the continued use of USD LIBOR, which provide date-specific guidance to market participants on when it is appropriate to end production of new contracts referencing USD LIBOR on a product-by-product basis, and also lays out a series of steps along the way, inclusive of using fallbacks and other tools that have already been put in place by the ARRC.

We have also put out a tool to help firms move internal systems and processes away from LIBOR; introduced fallback language for LIBOR-indexed student loans and recommended conventions when using SOFR and new student loans; updated recommended hardwired fallback language for syndicated loans; and details around the calculation of the ARRC-recommended spread adjustment for cash products utilizing ARCC fallback language; and also provided recommendations for swaptions impacted by the CCP discounting transition to SOFR.

A webinar providing an overview of the ARRC's proposal for New York State legislation to deal with certain tough legacy cash products is also available on the ARCC website.

Away from the ARRC, ISDA is in the final stages of publishing a protocol to incorporate new fallback language into legacy derivative contracts, as was mentioned earlier, which is based on input from several market consultations over the past two years.

It should also not be understated how valuable the MRAC subcommittee's contributions have been to the ongoing transition away from LIBOR, especially in light of the tabletop exercise that we are going to present today. So, if we could just move to page 2 in the presentation.

On background, at our last meeting, December 2019 MRAC meeting, this committee voted to hold a tabletop exercise regarding CME Clearing and LCH Limited single-step proposals for the transition of discounting and price alignment interest of certain products of the Secured Overnight Financing Rate, or SOFR, scheduled for October 2020.

The MRAC's Interest Rate Benchmark Reform Subcommittee was tasked with the planning and execution of that exercise. Due to COVID-19, the subcommittee opted to have a virtual tabletop discussion because of the complexities associated with conducting that virtual training simulation. In this format, our subcommittee reviewed the potential implications of the discounting transition of market participants under seven different scenarios. I'll read through those.

So, the first scenario was processes at both CCPs go according to plan, which was the base case.

Scenario two was a failed auction with discounted risk swaps.

Scenario three was some form of operational failure.

Scenario four, member default.

Five, an FCM not operationally prepared for CCP discounting.

Six, pre-funding needs and risk limits that will be required in advance of the single step.

And scenario seven, COVID-19-related interruptions.

Please turn to page four. Entering the tabletop exercises, the subcommittee laid out key objectives for our discussion. Of utmost importance, we wanted to -- we wanted the tabletop to be an educational experience for those involved and to identify any potential areas or gaps or weaknesses or misunderstandings of the CME/LCH plans that could potentially impair the success of the discounted transaction when it occurs in October.

We also sought to address issues raised during the tabletop via recommendations to market participants, as well as points of consideration to the U.S. official sector.

So, in looking through this, the key we wanted to lay forth was that there was a clear understanding that we could make sure that the -- that we could, you know, identify and hopefully eliminate misunderstandings through education, explore how participants could react to these problems, highlight differences between proposals from CME and LCH, but not reconcile. Clearly, we will be moving down a path with certain different models being employed by each clearinghouse and, really, assess the ability for everyone to have a clearer understanding and really call out potential weaknesses that could be enhanced and corrected before we get to October.

So, turning to page five. During this robust roundtable discussion, a number of key issues became apparent. There were some gaps in understanding among market participants about the precise timing of discounting transition milestones, as well as the dynamics of CME and the LCH auction processes.

An auction within which some or all of allocated discounted risk swaps are not liquidated, despite the end user's election to offload these swaps, could be potentially disruptive to the pricing and liquidity of SOFR instruments, potentially leading to unanticipated volatility for the market overall.

And, obviously, there is a lack of congruency between the CCP-mandated dates, by which market participants must finalize elections to offload discounting risk swap compensation, may create confusion or perceived advantages for certain market participants.

And, major differences between the CCP plans may create significant operational and market risk for participants over the discounting transition period.

In order to help mitigate these issues, the subcommittee decided on three guiding insights that market participants should consider as they approach the October transition.

First, enhanced education regarding discounting transition is needed for all parties involved. This is broad communication among all market participants and their role in this transition to ensure that everyone is armed with the same information available to ensure the most seamless transition as possible.

Two, risk mitigation strategies ahead of discounting transition should be considered. Examples include trade compression and re-couponing, or to reduce the notional size of things that are going to be going through this process in advance and make sure that people are taking those considerations into their process.

Internal preparation and proactive engagement by all impacted stakeholders in industry preparations is absolutely critical to produce a positive outcome for the market as we go through this transition.

Turning to page six. To take this all a step further, the subcommittee has provided actionable recommendations for different types of market participants broken down between CCPs, FCMs, buy-side firms, and regulators. All the recommendations summarized on page six of our report attempt to provide next steps that market participants can take that will improve education, risk management, and internal preparation in line with the guiding insights that we just laid out.

For the broader regulatory community in particular, we arrived at three recommendations to be considered as market participants work on their preparations.

First, consider implications of Part 43 and other global, real-time public reporting requirements for discounting swaps, risk swaps, vis-à-vis potential concerns that broader market transparency into auction portfolios could disincentivize aggressive bidding and, therefore, potential benefits of the auctions. Also, consider implications of reporting or not reporting on transactions that are purely intended to give effect to cash compensation payment.

Next, to confirm treatment and consider relief from tax and accounting implications of pre-hedging auction-related exposures.

Also, to consider other areas for no action or interpretive relief that would facilitate the discounting transition, potentially including relief in the uncleared market for swaptions and amendments to credit support annexes as proposed by the ARRC in its June 16th letter to the Division of Swap Dealer and Intermediary Oversight. The ARRC also looks to continue its active dialogue with the Commission and staff as we work collaboratively to fine tune existing relief and identify new areas for relief that will help to facilitate adoption of the ISDA protocol and voluntary conversions.

The ARRC's most recent filing underscores the continuing collaborative work with the Commission and staff.

We look forward to sharing the full report with the broader market today as we believe it will provide important guidance to be considered as every firm plans for this critical transition in October. It cannot be forgotten that the CCP discounting transition is a fundamental part of the ARRC's Paced Transition Plan and will ultimately have a significant, positive impact on the adoption of SOFR in the derivatives markets. However, this event does not come without certain risks, and it is important that we help provide the clarity needed by market participants to prepare for these risks.

At this time, we will pass back to Nadia, and we will welcome any feedback or questions from the MRAC on our tabletop exercises and our recommendations. The MRAC and the CFTC's guidance has been very helpful to our work thus far and we look forward to further collaboration with this group today and in the future.

And, once again, I'd like to thank Commission Behnam, Alicia Lewis, Nadia Zakir, you all at the MRAC for the opportunity to do this, to provide this service, through our tabletop. This tabletop would not have been a success without the integral work of Bob Wasserman of CFTC, who served as our facilitator.

So, now I'd like to open the discussion for feedback and questions. Thank you.

CHAIRPERSON ZAKIR: Thank you, Tom.

At this time, I'd like to open the floor to questions and comments from the MRAC membership on the subcommittee's report and recommendation. As a reminder, directions on how to ask a question or make a comment can be found in your meeting instructions.

Tom, to start, I'd like to throw out a question for you. Given your role on the ARRC and based on your discussions within the industry, do you believe that the industry's LIBOR transition efforts have been impacted at all by the recent developments and challenges around COVID-19?

MR. WIPF: Thank you, Nadia. I would say that when we approach these challenges, and I think like every organization I'd say from the ARRC's perspective and broadly across the industry, I think we have all been, you know, pleased with the fact that in even a work-from-home environment, we have been able to actually navigate these challenges.

And I would -- I can report from both the work that this subcommittee has done, which has been, you know, frequent meetings and high attendance, great participation, that seems to be the model. At the ARRC, we ended up -- because we were virtual, we ended up doubling our meetings and moving forward.

So, I think, as we heard from Governor Bailey and President Williams earlier this week, I think that there has been -- I think we are all very optimistic that the work has continued in spite of the challenges of COVID. And, of course, in everything that we have done, we have tried to be extremely aware and respectful of the challenges every organization is facing.

But, at this point, when we look across at the groups that we have been interacting with, it appears that because of the deadline and the work that needs to happen between now and then, we have not seen to any large degree resources being shifted away from this work. And I really believe that as we approach -- once we cross into the year point and begin really looking at some of the financial consequences that we see on the near-term horizon, whether it be the use of protocol, the CCP conversion, I do believe that the industry very broadly has continued to do this work in earnest, and in many cases, have actually redoubled their efforts in spite of the challenges.

So, I think we are all really pleased with what we have been able to accomplish in this virtual setting. As I mentioned earlier, I think, you know, it's difficult to get this work done, but I would have to say that these groups have adjusted very, very well, and I think we are well on track.

And, I would also add that, I think, you know, based on everything we've heard over the last several weeks, today, from the Commission and across the official sector, it's very clear, I think, that we have now turned an important corner, and we're using our forward momentum to actually push this right to the deadline to ensure that we can have the most seamless transition possible.

CHAIRPERSON ZAKIR: Okay. Great. Thank you, Tom. That's very helpful.

I'd like to recognize Sujatha Srinivasan from Goldman Sachs.

MS. SRINIVASAN: Thank you so much, Nadia. Thank you, Commissioner Behnam, for the opportunity to serve on the committee, and to the staff for the warm welcome to MRAC, in particular to Alicia Lewis. Tom, thank you so much for this presentation and to the subcommittee for the critically important work on this.

I know that one thing that is important is a successful protocol in order to have a smooth transition. I understand that the ARRC has been in discussions with the CFTC to get some relief, but from what I understand, it's pretty critical for people to feel comfortable adhering to the protocol. Am I right on that? Would you be able to give us an update on that?

MR. WIPF: Yes, you are, and thank you for bringing this up. So, from the perspective of the ARRC, you know, we appreciate the Commission and the staff's continued engagement on a host of these regulatory matters. And, as we mentioned in our presentation, that the dialogue between the ARRC, CFTC, and all these groups has been extremely productive and constructive over the period. The ARRC wants to help continue to keep that active dialogue going with the Commission and staff as we work to fine tune existing relief and identify new areas of relief that will facilitate the adoptions is the protocol. And, really, voluntary conversions, which we think are of growing importance as we approach the deadline.

More specifically, the ARRC -- we appreciate the robust dialogue to address several follow-up requests related to the relief already granted by the DCR, DSIO, and DMO last fall.

So, to answer -- to this end, we appreciate the staff's consideration of the ARRC's most recent request, which went out yesterday, which addresses a variety of issues critical and of immediate importance to swap dealers and their counterparties as they seek to, you know, get this smooth and orderly transition from IBORs and to other risk-free reference rates.

So, sort of listed out, DCR expanded relief for mandatory clearing provided in its previous letter to include all rates for fallback amendments as contemplated by the Year 2020 IBOR fallback protocol, which we hope to -- which will be published shortly. All divisions provide consistent relief that allow IBOR transition mechanisms to effectively accommodate differences between market conventions for impaired reference rates and their respective replacements. And DCR and DSIO clarify and adjust the relief currently available to end users to improve the availability of that relief for end users.

So, once again, I think -- thank you for bringing this up. We thank the Commission for their efforts to date, their willingness to continue to engage productively as we further the goal of a smooth transition. I think that the work that we've seen during this time, and certainly from the perspective of the ARRC and from this Interest Rate Reform Subcommittee, that the dialogue has been great. We really see that there is a clear message that we are moving obstacles to transition as a high priority.

We appreciate the opportunity to present these things, and we look forward to getting that dialogue done because these are important considerations. And, as has been mentioned at the top of the meeting, signing up to the ISDA protocol is going to be an important milestone for everyone in the market to really mitigate a lot of legacy risk that's out here.

So, thank you for the question, and I hope that was a good answer.

MS. SRINIVASAN: Thank you.

MS. LEWIS: I'd like to recognize Stephen

Berger from Citadel.

MR. BERGER: Well, thank you. First off, I'd like to commend the excellent work of the subcommittee and the high quality of the tabletop exercise and today's report.

Nevertheless, I do want to urge further scrutiny of one suggestion, which is that post-trade transparency should be lifted with respect to the upcoming auctions, which one CCP, though not both, has indicated that were requests.

I believe that the transition to SOFR is predicated on the need for a more transparent benchmark, and that same principle of transparency should apply to the transition steps we're taking, as well.

I will note that there is going to be an active secondary market in the same basis swaps, subject to post-trade transparency, both -- you know, before, during, and after the auction, so that raises concerns about Commission asymmetries, if some of the activity is kept dark while some of it is lit.

And I would also note that an exemption from post-trade transparency is notably not contemplated for CCP's default management options, which are the sort of closest parallel I could think of. So, it's just one area that I think needs some more scrutiny before we proceed down that path. Thank you.

MR. WIPF: Thank you, Stephen, and I do think that, you know, one of the key pieces of this is to lay things out that we think can, you know, remove some barriers. But, obviously, there's other considerations, and thank you for that feedback.

CHAIRPERSON ZAKIR: MRAC members, since there are no further questions, is there a motion to the MRAC to adopt the subcommittee's report and recommend to the Commission that it consider adopting the report's recommendations?

The chair recognizes Annette Hunter from the Federal Home Loan Bank of Atlanta.

MS. HUNTER: Thank you, Nadia. I move that the MRAC Interest Rate Reform Subcommittee's report recommended to the Commission that it consider adopting the report's recommendations.

CHAIRPERSON ZAKIR: Thank you, Annette. Is there a second?

MR. SHANAHAN: This is Jim Shanahan from CoBank and I provide a second.

CHAIRPERSON ZAKIR: Thank you. The chair recognizes Jim Shanahan's second.

It has been moved and properly seconded that the MRAC adopt the subcommittee's report and recommend to the Commission that it consider adopting the report's recommendations.

We will now take a vote on the motion. As a point of order, a simple majority vote is necessary for the motion to pass. I will turn it over to Alicia to conduct a roll call vote.

MS. LEWIS: Before we start with the roll, I just wanted to make sure that those MRAC members that we could not get on the record earlier, we get them on now.

Dick Berner? Please unmute yourself.

(No response.)

MS. LEWIS: Peter Borish?

MR. BORISH: Present. Thank you.

MS. LEWIS: Derek Kleinbauer?

(No response.)

MS. LEWIS: Eileen Kiely?

MS. KIELY: Good morning, Alicia. Hopefully you can hear me this time.

MS. LEWIS: Got you, Eileen. Robert Mangrelli?

MR. MANGRELLI: Hi. Good morning, Alicia. Hopefully you can hear me, as well, this time.

MS. LEWIS: Dale Michaels?

MR. MICHAELS: I'm here, Alicia. Thank you.

MS. LEWIS: Marcus Stanley? Marcus Stanley?

(No response.)

MS. LEWIS: Janine Tramontana?

(No response.)

MS. LEWIS: Committee members, when I call your name, please indicate your agreement with "aye;" disagreement with "nay;" or indicate "abstain" if you are abstaining from the vote. Please remember to unmute your line to indicate your vote, and to re-mute your line once you finish voting.

Salman Banaei?

MR. BANAEI: Aye.

MS. LEWIS: Stephen Berger?
MR. BERGER: Aye.
MS. LEWIS: Lee Betsill?
MR. BETSILL: Aye.
MS. LEWIS: Peter Borish?
MR. BORISH: Aye.
MS. LEWIS: Bis Chatterjee?
MR. CHATTERJEE: Aye.
MS. LEWIS: Alicia Crighton?
MS. CRIGHTON: Aye.
MS. LEWIS: Shelly Goodwin?
MS. GOODWIN: Abstain.
MS. LEWIS: Matthias Graulich?
MR. GRAULICH: Aye.
MS. LEWIS: Graham Harper?
MR. HARPER: Votes aye.
MS. LEWIS: Frank Hayden?
MR. HAYDEN: Aye.
MS. LEWIS: Lindsay Hopkins?
MS. HOPKINS: Aye.
MS. LEWIS: Annette Hunter?
MS. HUNTER: Aye.

MS. LEWIS: Demetri Karousos?
MR. KAROUSOS: Aye.
MS. LEWIS: Eileen Kiely?
MS. KIELY: Aye.
MS. LEWIS: Derek Kleinbauer?
(No response.)
MS. LEWIS: Laura Klimpel?
MS. KLIMPEL: Aye.
MS. LEWIS: Rob Mangrelli?
MR. MANGRELLI: Aye.
MS. LEWIS: Kevin McClear?
MR. McCLEAR: Abstain.
MS. LEWIS: Dennis McLaughlin?
MR. McLAUGHLIN: Aye.
MS. LEWIS: Craig Messinger?
MR. MESSINGER: Aye.
MS. LEWIS: Dale Michaels?
MR. MICHAELS: Aye.
MS. LEWIS: John Murphy?
MR. MURPHY: Aye.
MS. LEWIS: Sam Priyadarshi?
DR. PRIYADARSHI: Aye.

MS. LEWIS: Jonathan Raiff?
MR. RAIFF: Aye.
MS. LEWIS: Marnie Rosenberg?
MS. ROSENBERG: Aye.
MS. LEWIS: Jim Shanahan?
MR. SHANAHAN: Aye.
MS. LEWIS: Lisa Shemie?
MS. SHEMIE: Aye.
MS. LEWIS: Betty Simkins?
DR. SIMKINS: Aye.
MS. LEWIS: Tyson Slocum?
MR. SLOCUM: Abstain.
MS. LEWIS: Sujatha Srinivasan?
MS. SRINIVASAN: Aye.
MS. LEWIS: Marcus Stanley?
(No response.)
MS. LEWIS: Suzy White? Suzy White?
(No response.)
MS. LEWIS: Scott Zucker?
MR. ZUCKER: Aye.
MS. LEWIS: Give me one moment and I will provide you with the tally, Madam Chair.

(Pause.)

MS. LEWIS: Madam Chair, you have 27 yes votes, zero no votes, and three abstentions.

CHAIRPERSON ZAKIR: Thank you. The ayes have it and the motion has passed. The report and recommendations of the Interest Rate Benchmark Reform Subcommittee has been approved by the MRAC and will be submitted to the Commission for consideration.

The next item on the agenda is the report of the Climate-Related Market Risk Subcommittee. As a reminder, we will be taking questions and comments at the end of the report. Bob Litterman is the chair of this subcommittee.

Bob, please begin.

MR. LITTERMAN: Thank you. Can you hear me?

CHAIRPERSON ZAKIR: Yes, we can.

MR. LITTERMAN: Great. When Commissioner Behnam and I first talked about my presenting to the Market Risk Advisory Committee today, we hoped that it would be in person and I would be able to deliver the Climate-Related Market Risk Subcommittee report on managing climate risk in the U.S. financial system.

Sadly, neither of these goals came to pass. The COVID-19 pandemic, which prevents us from meeting in person, has also slowed us down a bit and we are still in the process of finalizing the report.

Nonetheless, I want to assure you today that the subcommittee has been working diligently, productively, cohesively, and collaboratively to produce a report that we hope you will find to be a comprehensive roadmap for managing the growing climate-related risks facing the financial markets, their participants, and their regulators. And although the report is not finalized and I cannot get into specifics, I can assure you that the subcommittee has made excellent progress and our report will contain the recommendations that hopefully can play an important role in guiding the climate response of the U.S. financial community.

Let me once again express my deep appreciation to the Commission for creating the Climate-Related Market Risk Subcommittee. Commissioner Behnam and his chief of staff, David Gillers, brought together an incredibly talented and experienced group of professionals who, without compensation, put in hundreds, if not thousands, of hours of work.

By way of context, let me also note that while this report has been presented to the U.S. Commodity Futures Trading Commission -- while it will be presented the U.S. Commodity Futures Trading Commission, we have been given a broad mandate. The objective is to provide an analysis and recommendations regarding the existing and emerging risks that climate change poses for the soundness and stability of the U.S. financial system.

The report considers the risk of climate change impacts, such as sea level rise, extreme weather events, and rising temperatures on economic activity and financial markets.

It also takes into account the risks posed to the U.S. financial system by shifts in policy, technology, and consumer preferences. Shifts that will be necessary to stabilize concentrations of greenhouse gases and reduce the risk of the most damaging impacts of climate change.

Importantly, the report should help inform ongoing and future policy debates in the U.S. Congress and state legislatures, particularly since climate change will remain a matter of growing legislative interest.

Finally, the report should be of interest to the American public, and the recommendations in this report ultimately seek to serve by enabling the country to better manage one of the most significant threats facing our country. Over the past decade, financial regulators, business leaders, and legislatures around the world have embraced the need for better managed climate-related financial and market risks and recognize the urgency of meeting the challenge. Many countries have adopted legislation, guidance, and other initiatives to advance this goal.

In addition, myriad international initiatives, work in groups, tasks forces, coalitions, and other efforts have emerged to facilitate collaborative solutions and to accelerate learning and information exchange. The U.S. has been involved in and has even led some of these international efforts, but it is noticeably absent in others. As the world's largest economy and second largest emitter of greenhouse gases, U.S. engagement in and leadership of these initiatives remains essential and in the best interest of the nation, particularly since neither climate change nor financial crises respect national boundaries.

At the same time, managing climate-related financial risks requires paying close attention to the unique circumstances of the United States. That includes the idiosyncrasies of our complex system of financial regulation, as well as policies based -- defined by existing legislation and suggested by proposed legislation. It also must consider the central role that the private sector plays in our financial system and the importance of consultation and collaboration between the private and public sectors in the design of new policies.

Finally, it is worth noting two interrelated challenges. One is how to safeguard the soundness and stability of the financial system in the face of climate change. The main goal here is to manage climate risk responsively in order to protect the system's ability to serve the American public, to support economic activity and entrepreneurship, and to safeguard the assets millions of savers, retirees, institutions, and business.

The second challenge involves how the financial system can facilitate the transition to a low-carbon, climate-resilient economy. Central to this challenge is identifying ways in which financial markets and institutions can channel significant amounts of additional capital toward sustainable investments and net-zero activities, including low carbon and renewable energy, energy efficiency, other low-carbon technologies for transportation, industry and agriculture, and resilience against climate impacts.

A stable and well-functioning financial system is incompatible with the world of unmitigated climate change. Such a world would be too chaotic and racked by frequent devastating shocks to sustain the fundamental conditions on which our financial system is built. Promoting the transition to a net-zero emissions economy and safeguarding financial stability are consistent, mutually reinforcing objectives.

Let me now briefly describe the process that we followed to produce our report. We began with two very productive, in-person meetings as the subcommittee in November and December of last year -- one in the CFTC offices in Washington, D.C. and one in the CFTC offices in New York City. We were considering a third in-person meeting when the coronavirus caused us to start operating virtually.

I remember quite vividly sitting around the table at our first meeting as we introduced ourselves and talked about the organizations which we represented and the expertise that we each brought. Working with this group and learning from them has been a truly gratifying experience.

At those two in-person meetings last year, we quickly agreed on the outline of the report, on the workstreams around the major topics, found members who were willing to lead, or in most cases, co-lead the various groups. Members volunteered to serve on one or more workstreams. And, as we moved forward, all members participated and contributed to the discussions and the writing process.

Although I have been involved in financial risk management for over three decades, climate risk is different in several respects from the usual market and credit risks that we in the financial markets usually focus on. Unlike most financial risks in which market participants have a long history from which to learn, we do not have much experience dealing with climate risks.

In dealing with financial market risks, we often focus on extreme but plausible scenarios over relatively short periods of time, and we are guided by our historical experience.

The financial impacts of climate change, on the other hand, are recent and to date have been relatively small but are expected to grow significantly over time. Our grandchildren will grow up in a world in which each decade is expected to be warmer than the last. The world in which sea levels will continue to rise, extreme weather events will increase, wildfires will grow in size and frequency. Human health will be challenged by the increasing warming, and global ecosystems will be put under stress.

Scientists have warned that it is very plausible that we could soon cross a tipping point, after which impacts could grow in a non-linear fashion, leading to catastrophic outcomes. We are doing an experiment of unprecedented scale on a complex system with little historical experience to guide our understanding of what an extreme but plausible outcome looks like.

Today, climate change is just starting to have impacts on valuations of securities and creditworthiness of market participants. And just about the only thing we can be confident of is that these impacts will grow over time. Thus, the data and the analytic models needed to address climate change are just beginning to be developed. It is important to acknowledge that our understanding of the complex issues associated with climate change impact is only rudimentary.

The bottom line of this report is that the U.S. financial regulators must recognize that climate change poses serious, emerging risks to the U.S. financial system, and they should move urgently and decisively to better measure, understand, and address these risks. We anticipate the report to be complete either in August or the very beginning of September.

Thank you. That concludes my report.

CHAIRPERSON ZAKIR: Thank you, Bob.

We will now open the floor to questions and comments from the membership on the report. As a reminder to members, directions on how to ask a question or make a comment can be found in your meeting instructions.

And as we wait for those questions, Bob, let me throw out the first question here. As you know, the general theme of today's meeting centers around the impact of COVID on our markets. And, while I recognize that you're not able to share the discussions of the subcommittee, can you share your thoughts on the impact of COVID or the impact of COVID as it pertains to climate-related financial risk?

MR. LITTERMAN: Well, thank you for this -- for that question. As the report is being finalized, as you know, we are in the midst of a pandemic with 140,000 deaths already, and severe economic impact. Of course, there are many differences between the global pandemic, which is a sudden health crisis that is expected to have impacts of perhaps a few years, and climate change, which is a global threat that will play out over decades, with potentially permanent consequences.

And in that context, the short-term reduction in emissions associated with the pandemic has been a minor blip. But, both the pandemic and climate change are similar in one crucial dimension. They are both global risk management challenges, and science clearly indicates that the cost of delay in responding to the risk can be devastating.

A recent study from Columbia University suggests that in the case of the virus, delaying social distancing by one week in the United States doubled the number of deaths. Similarly, every year of delay in the policy response to climate change will lead to higher mean global temperature increases down the road and to greater probability of irreversible and catastrophic damages. Hopefully, this obvious parallel will help move forward in time the inevitable global policy response to climate change, which is the creation of appropriate incentives to reduce emissions.

CHAIRPERSON ZAKIR: Thank you, Bob.

If there are no questions or comments on the Climate-Related Market Risk Subcommittee report, we will move on to the report of the Market Structure Subcommittee. Lisa Shemie and Stephen Berger are the co-chairs.

Lisa and Stephen, I will turn it over to you.

MS. SHEMIE: Thanks very much, Nadia. This is Lisa Shemie. I am an Associate General Counsel at Cboe Global Market and serve as Chief Risk -- Chief Legal Officer of our FX trading venues, FX Markets and Cboe SEF.

I am speaking on behalf of Stephen and myself and wanted to start by, of course, thanking again Commissioner Behnam for giving us the opportunity to lead what we hope will be a very impactful session of the Market Structure Subcommittee.

I also wanted to thank Alicia Lewis for all of her help in planning today's event, as well as Nadia Zakir for all of her guidance. We are very excited to present our interim report on the activities of the Market Structure Subcommittee.

In particular, I wanted to thank all the members of our subcommittee for the work that they have done and contributed so far and for the future work that we hope to conduct on the important issues that we have identified for discussion.

I did want to start by taking Commissioner Behnam's cue and acknowledging today's 10-year anniversary of Dodd-Frank, which threw me for a loop when you said it, or as we used to call it very soon after its enactment, we used to call if the Full Employment for Lawyers Act. So, I'm sure many people here, lawyers and non-lawyers alike, think of it in the same way. But, of course, it has changed many of our careers and created tremendous opportunity to learn and study and propose changes to market structure in the derivatives market.

So, in presenting our report for today's MRAC meeting, we wanted to cycle back to the report that we presented in the December meeting, which feels like a generation ago already. As a reminder, the Market Structure Subcommittee, prior to the December MRAC meeting, identified three potential rubrics and topics for consideration during our meetings, and we put them under three broad categories -- trading, clearing, and reporting.

Following that meeting, the subcommittee went ahead and formed working groups to explore the issues that we had identified within each of those areas in greater detail and to work towards developing forward-looking recommendations for the Commission to consider. The working groups, together with the list of the issues that we discussed, are listed on an annex to our report that hopefully most of you can see in your materials.

In the last few months, starting in January of this year, we met with all of our sub-working groups. And, over the course of several meetings, we worked hard to try to whittle down the very long list of interesting topics to be able to hone in on issues that we hoped that we could have an impact on. And following several meetings, we came to an agreement to focus on topics relating to the swap dealer landscape and the Made Available to Trade MAT process.

A couple of months ago, as we began to turn our focus towards today's meeting, Stephen and I discussed the potential of pivoting away from that original plan, at least with regard to timing, and instead to try to focus on the effects of the market conditions resulting from or following the onset of the current pandemic. We decided, with the Commission's support, as always, to redirect our near-term efforts to examine how markets actually performed and how market structure functioned during this period of significant stress.

So, what we are hopeful to do in today's presentations and discussions is to hope to inform the Commission on how the markets actually did perform, the markets under the Commission's supervision and otherwise, and focus on whether there may be any market structure-related issues that emerged during this period of stress that may warrant some attention.

What we have done then is invited a

representative from the firm of Clarus Financial Technology, who will be presenting some data on market performance during the period of volatility.

The second presentation is -- the second and third presentations will be given by representatives of each Bloomberg and Tradeweb, who will provide their perspectives on this period, in particular, focusing on the interest rate derivatives piece.

Following those presentations, Stephen and I will jump in and moderate a discussion among MRAC members, and certainly invite all of you to raise your hand if you would like to bring up issues. But, we have identified some of our members, who we have discussed certain topics that we will call upon them to share, and hoping to have a little bit more emphasis turning from the swap side towards, as well, the futures and CCP side of the discussion.

Following our moderated discussion and following today's MRAC meeting, the subcommittee is planning to revert back to the original work that I highlighted earlier to further discuss and study recommendations relating to the principal areas that we have identified to focus on, i.e. the swap dealer landscape and the MAT process, and hope to have substantive and impactful and actionable recommendations to present to the committee as soon as the next meeting of the MRAC.

So, we are very excited to lead this discussion, and again, are very grateful for the opportunity to participate in this important time in our market.

Nadia, I can hand it back to you.

CHAIRPERSON ZAKIR: Thank you, Lisa. We will now open the floor to questions and comments from the membership on this report. As a reminder, directions on how to ask a question or make a comment can be found in your meeting instructions.

Lisa, let me ask a follow-up question here to your report. And thank you again for all of your work in chairing, along with Stephen, this important subcommittee.

At our prior MRAC meeting, a number of topics were identified as potential focus areas for the Market Structure Subcommittee. Can you provide some more information on how and why the subcommittee selected the two topics of swap dealer landscape and the MAT process as areas of focus?

MS. SHEMIE: Sure. Thanks, Nadia. So, to start, you know, as I mentioned, we did have a very broad and diverse list of issues that we discussed among the working groups. And certainly over the scope of several calls, started to hone in on these two broader topics that seemed to impact the majority of the firms, of our member firms, and the comments that we were receiving.

The swap dealer landscape in particular was one where we considered there to be a lot of issues under that sort of general sub-rubric that we thought we really could discuss and could come up with recommendations, in particular having to do with such issues that we've been discussing for what seems like a generation now. Issues like the concentration of the swap dealers that are active in the market and whether there is anything that could be done to broaden the scope of swap dealers that are registering and are active in trading. How could we be pointing to that concentration issue potentially through discussion on the floor trader exemption where there has been, you know, very hopefully impactful changes from the Commission over the last year, but where we wondered if there could be additional focus in order to allow for more market participants to register as swap dealers. And even looking at things like the swap definition itself, or the swap dealer de minimis requirements, again with a focus on trying to broaden concentration or broaden the number of swap dealers that are registering and that are active in the market.

I will turn it over to Stephen, as well, to give some thoughts on the MAT process and why we came to that conclusion, too.

MR. BERGER: Thank you, Lisa. So, with respect to the Made Available to Trade process, something -- you know, there's a universally-accepted fact that there haven't been any new Made Available to Trade filings since late 2013, which, you know, begs the question of why that hasn't occurred. So that, in and of itself, seemed worthy of exploration.

At the same time, there have been a number of proposals put forward by an array of market participants in the interim about how the Made Available to Trade process could be revised. Back in July of 2015, there was a DMO staff roundtable, where there were a lot of excellent ideas discussed. And, many trade associations and market participants also provided recommendations in response to the CFTC's proposed SEF rule amendments, you know, that were put forth back in the fall of 2018.

So, there have been a lot of recommendations put out there, and I think that, you know, but no sort of, I think, consensus path forward has yet to emerge. So, the hope of the subcommittee is that we could, you know, spend time going through all the recommendations that have been put out there and try to come up with a little bit of a path forward here.

I think the areas that will be in focus are, first of all, the criteria one uses when determining whether a swap is made available to trade to the statutory language, certain rule language, you know, sets out the quote, unquote six-factor test. So, I think re-evaluating those factors will be an area of focus.

A second area of focus will be on who can initiate a MAT filing. Currently, it's contemplated that it's the SEFs themselves who have the authority and responsibility to put forward MAT filings, and there has been questions and there have been recommendations about ability to initiate should rest perhaps with others instead of or in addition to the SEFs themselves, be that market participants or the Commission.

And then the third area, I think, that will be in focus is what's the process for public comment when MAT filings come forward, what's the standard for approving them or rejecting them. So, that's another area where there's been some both uncertainty and desire to put forward recommendations.

So, I think the timing is right to move forward on this. I think as the market continues to evolve, we do need to make sure that we have a MAT process that is -- you know, can appropriately adapt to evolving liquidity conditions, the introduction of new products, retirement of existing contracts, so that we can continue to move forward, positive, with respect to the universal products that the trade offsets.

CHAIRPERSON ZAKIR: Thank you, Stephen. Obviously, we at the MRAC really do look forward to continuing to work on this with the subcommittee, as well as reviewing the reports and getting the results of that report.

If there are no questions or comments on the Market Structure Subcommittee report, let's turn to our first panel of the day. The first panel is entitled Market Function and Performance During the Early Months of COVID-19.

We will have presentations from Chris Barnes of Clarus Financial Technology, who will discuss overall swap market activity and COVID-19.

Chris, are you on the line?

MR. BARNES: I am, yes --

CHAIRPERSON ZAKIR: Thank you. We will also have a presentation from Adam Peralta, Head of Rates Electronic Trading at Bloomberg LP, who will discuss market volatility and interest rates fluctuating on Bloomberg SEF.

Adam, are you on the line?

MR. PERALTA: Yes, I am.

CHAIRPERSON ZAKIR: Thank you. And we will have Elisabeth Kirby, Head of Rates Product and Strategy at Tradeweb, who will discuss how Tradeweb's platform performed during the early months of the pandemic.

Elisabeth, are you on the line?

MS. KIRBY: Yes, I'm here.

CHAIRPERSON ZAKIR: Great. After the presentations, we will move into the moderated discussion. At that time, we will take questions and any comments on the presentation. As a reminder, your meeting instructions have information on how to ask a question or make a comment.

Chris, I will turn it over to you.

MR. BARNES: Thanks very much, and thank you for the opportunity to speak today.

My name is Chris Barnes, and I'm the SVP for Europe at Clarus Financial Technology. It probably makes sense, in case people haven't heard of Clarus, to explain exactly who we are. We are a provider of analytics, data, and research, mainly with a focus on derivatives markets. Specifically, we focus a lot on OTC rates. We have a very widely-read blog on our website, clarusft.com. I would encourage you all to check out the research there if you haven't done so previously.

It seems very apt that it is, I guess -- I don't think it's an exaggeration to say that Clarus probably wouldn't exist if it wasn't for Dodd-Frank. We are very, very active consumers of all transparency data for the derivatives market. And, generally speaking, what we do is we take that transparency data and we make data products from it.

And, so, our blog, I've written at least 300 blogs now in the six years I've been with Clarus. Our blogs are very much based on that transparency data.

So, if we could just move forward, Alicia, to the next slide. What I will start with is a very broad overview of what we saw happen as a result of the COVID-19-related volatility in the market in terms of global volumes.

So, the data we're looking at here is looking at all interest rate derivatives cleared all CCPs globally. So, this isn't just Dodd-Frank data. This is the whole global market.

What we saw in March 2020 across the major six currencies here, across all those rates, derivatives products, was an all-time record in notional volumes. Now, this is a really, really interesting chart because it's very unusual that it wasn't actually a record month for U.S. dollar swaps, and it wasn't a record month for euros, and it wasn't a record month for yen or sterling nor Aussie.

However, when you put them all together, we see a record month. I think that, probably more than any other slide I've got in this deck, really presents the global nature of this shock. It has really affected everything everywhere. And, so, in light of that, what is particularly impressive from a market structure perspective is how the whole clearance infrastructure across every single conceivable aspect was able to scale up so, so quickly to meet unprecedented demand, really, unprecedented volumes, across all of the currencies at the same time. And that really, really speaks very, very positively for the resiliency we saw in the cleared markets.

Now, in terms of talking about clearing, the chart doesn't show it, but what we also saw was that market participants actively continued to choose to clear their risk. They actively chose to trade at CCPs. Now, if we look at notional -- if we look at the risks rated the DV01, it doesn't really matter. What we saw in March 2020 was that 96 --

(Audio malfunction.)

CHAIRPERSON ZAKIR: It sounds like Chris' line has dropped. I'd like to give him maybe just a minute to see if he can call back in.

(Pause.)

CHAIRPERSON ZAKIR: In the interest of time, while Chris is dialing back in, it may make sense for us to move to Adam Peralta's presentation.

Adam, are you on the line?

MR. PERALTA: I am.

CHAIRPERSON ZAKIR: Okay. Great.

Can you please cue the relevant presentation, Alicia?

Adam, please begin.

MR. PERALTA: Good morning. My name is Adam Peralta, and I'm responsible for the global rates, electronic trading, business and product development at Bloomberg. I would like to thank the MRAC for the invitation and opportunity to speak about this very important topic.

At Bloomberg and Bloomberg SEF, we welcome the consistent dialogue and look forward to continued conversations surrounding this topic and more to come in the future. Next slide, please.

Today, I'm going to focus my discussion around the March 2020 market volatility and the overall performance of BSEF, specifically related to risk transfers across the platform.

This past March, as we all observed, the global markets experienced unexpected volatility resulting in an overall increase in trading volumes. Likewise, BSEF experienced year-to-date highs in both gross notional and DV01 executed on the platform.

As market volatility increases, participants begin to question their ability to access liquidity and, moreover, their ability to transfer risk at any given point in time during the day.

Despite the extreme market volatility, BSEF observed an increase in hit rate as DV01 increased per trade, indicating BSEF participants were able to effectively manage and transfer risk over the platform.

As such, and for purposes of this presentation, we chose to narrow our focus to the following: Overall March 2020 market volatility compared to March of 2019; overall DV01 transacted; and overall system performance on BSEFs. We chose to exclude compression and list trades from our analysis as those trades tend to inflate overall notional values when looking at real risk transferred in the market. Next slide please.

Taking a look at March 2020 market volatility more closely, what you see in the chart using the YLDV US index, the swaptions market is a gauge for interest rate volatility. March 2020 experienced a dramatic increase, as the chart -- as compared to March 2019. The blue line, I think it's obvious based on this pattern, is the volatility experienced in March of this year, whereas the purple line is March of 2019. This resulted in an increase of 116 percent in notional compared to March of last year in DV01 on BSEFs, and 142 percent increase in tickets compared to March of last year on BSEFs, as well.

Additionally, RFQ remained the preferred execution method for our market participants to trade. We did notice that the number of liquidity providers that were placed in competition increased during these volatile times in the market. Next slide, please.

Taking a look at risk transfers in the market, we thought it would be useful to understand performance as it relates to the risk being transferred over the SEF. In doing so, we decided to illustrate this by charting DV01 against trades data.

On the Y-axis is DV01 bucketed in increments of 10,000, 25,000, and 100,000-plus. On the X-axis is the trades data. "Accepted" indicates all executed trades occurring on the system. "Expired" means trades that expired, did not trade. "Passed" are trades where the taker passed, and "Rejected" are trades where the liquidity provider rejected an inquiry.

As you can see by the top green line, as DV01 increased, accepted trades increased, implying a strong platform performance for large sized trades done over BSEF.

It is important to note that trade rejects during this time period were minimal. However, BSEF did observe a slight increase in passed trades, which is expected during uncertain market conditions. Next slide, please.

Here, I'd like to step through some basic performance metrics that we pay attention to at BSEF. Overall, from the systems standpoint, Bloomberg SEF performed well and experienced year-to-date highs for trade count and processing trade requests, illustrating overall system resiliency in times of high volume and high demand placed on the system.

The top chart shows a dramatic increase in trade requests processed, in line with increased volatility rates on the second slide.

(Audio malfunction.)

MR. PERALTA: Hello? Am I back in?

CHAIRPERSON ZAKIR: Hi, Adam. You're on.

MR. PERALTA: Okay. Good. I just heard a radio for a moment.

So, the second chart on this slide is points of peak volume illustrated in the above chart, narrowing in on the processing rate, which I found to be quite interesting. So, the processing rate here indicates all trades that were submitted across the platform, and that was a 400 percent increase, processing over 2,000 trades per minute during the course of business -- you know, over the course of just one day. Next slide, please.

To conclude, March represented unprecedented market volatility in recent times, testing the framework of execution, clearing, and trade reporting. BSEF believes that the current swaps market structure performed well under stress, evidenced by the participant's ability to transact during periods of extreme volatility.

Additionally, BSEF values the consistent dialogue with market participants, industry groups like ISDA, and continued engagement with the CFTC during these times of market stress.

I'd like to thank everyone for your time today, and please do not hesitate to reach out to me if you would like to continue a discussion around this topic or anything relating to BSEF generally.

Thank you.

CHAIRPERSON ZAKIR: Thank you, Adam.

Let me see if Chris Barnes is back on the line here and maybe we can continue his presentation.

Chris, are you on?

(No response.)

CHAIRPERSON ZAKIR: Okay. Why don't we move to Elisabeth Kirby.

Elisabeth, let me turn the floor over to you.

MS. KIRBY: Great. Thank you.

My name is Elisabeth Kirby. I'm the Head of Rates Product and Strategy at Tradeweb. I'd like to thank the committee for inviting us to present here today on the impact of the COVID crisis on our derivatives marketplace. Could I just ask for the slide to be -- there we go. Okay. Would you mind moving to the next one, please?

So, I wanted to take a step back and provide a little bit of context. I know that some of the members of the committee may be more involved with swap markets than others.

So, firstly, for those of you who might be less familiar with Tradeweb. As a firm, our foundation lies in the rates market. Our company started in 1998 as an electronic trading platform for U.S. Treasuries, and we introduced derivatives trading in 2005. We currently operate two SEFs, TW SEF and DW SEF, which offer different trading protocols and serve different segments of the marketplace. Would you move to the next slide, please?

Across these two SEFs, we offer a number of different trading protocols. And this is an interesting distinction relative to futures or some of the other classes under CFTC jurisdiction, as much of the trading activity does not take place on an exchange or an exchange-like venue.

Today's presentation is going to focus largely on TW SEF, which serves the institutional buy-side to sell-side marketplace. The dominant trading protocol on TW SEF is Request for Quote, or RFQ, which is a disclosed and bilaterally negotiated protocol in which parties to the trade are known to each other prior to execution. As a result, some of the statistics that we are going to look at with respect to the health of the marketplace through the events of this past March will be somewhat unique to the RFQ protocol as markers of liquidity in the RFQ marketplace. Would you move to the next slide, please.

So, in 2005, we launched interest rate swap trading on Tradeweb, and then the trading mandate was introduced, as everybody knows, in 2014. We experienced something of an explosion of trading volume on the platform following the 2014 trading mandate as participants transitioned their business onto Tradeweb and other SEFs. What's interesting is while 2014 was a big bang, it was not the end of the story. So, following some subsequent phasing in of packaged trades over the course of the next year or so after the introduction of that 2014 trading mandate, there has been no further expansion of the MAT list, as Stephen mentioned.

However, we see here that the volumes

transacted on Tradeweb in TW SEF continued to grow significantly. Some of that, as you can see by this light blue bar, is driven through some of the mandates coming out of Europe or other parts of the world. But, the SEF contribution to the swap volumes on our platform continues to grow year over year, even into 2020. Would you move to the next slide, please.

And, so, what we've seen and what this slide shows is that particularly in the past couple of years, Tradeweb platform growth has greatly outpaced the growth in the swap market overall. Next slide, please.

So, what is driving this trend? Interestingly, we see a continued migration of non-MAT or non-required swaps onto the platform. Market participants are finding that the trading efficiencies and the execution quality of trading on venue are such that there is significant voluntary migration of trading activity onto the SEF. And, as you can see in the 2020 bar, this trend has not abated despite the challenges of 2020, specifically in March. Next slide, please.

So, as we've heard from the other panelists, there were record volumes in the swap market, and this was no different on Tradeweb. We saw record volumes across interest rate swaps and credit default swaps. We also saw record volumes in the treasury market, which I will present here as sort of a basis of comparison to the derivatives market due both to the depth of liquidity in the treasury market and the length of time that it has been traded electronically, and specifically traded electronically on Tradeweb. Next slide, please.

So, here, broken down on a weekly basis, you can see the breakdown of these record volumes as we progress from February into March and then subsequently April. Again, broken down -- the treasuries swaps, it's that dark blue bar on the bottom. Interest rate swaps, the light blue bar. And then credit default swaps are in gray. Next slide, please.

The trend that I think is very interesting through the volatility and sort of the constrained environment that we saw in March is the clear increase in block trades transacted on the platform. So, again, block trades are trades above the size threshold that has been determined by the CFTC. And, so, these are swaps that can be transacted either on a SEF by a RFQ to one, or potentially RFQ and comp, or it can be transacted off of the SEF via phone or chat and then subsequently processed through the SEF.

It's interesting because during a time of, you know, potentially constrained liquidities, market participants were both willing and able to transact in large size during a time of crisis. What we saw is that for some of these trades, we saw participants becoming slightly less price-sensitive as their focus shifted to the ability to move risk. But, ultimately, I think what is borne out of this chart is that the platform held up very well, particularly in its ability to allow participants to move sizeable amounts of risk, particularly during times of crisis. Next slide, please.

These are some of the metrics that I was alluding to earlier that are somewhat specific to an RFQ market, and these metrics are hit rate and quote rate. You can see that for both of these metrics -- and I'll just quickly sort of describe what these represent. The quote rate is the rate at which dealers respond to requests for quote -- that's the RFQ, Request for Quote -- submitted by a client.

So, you can see that typically, for most of our markets, these quote rates hovering between, you know, 90 and 100 percent during normal times. In times of crisis, these quote rates tend to fall a little bit. That may be as a result of certain liquidity providers not quoting certain trade requests, or it may be in certain cases simply that they are not quoting fast enough and the trade is completed before the quote can actually be received by the client.

So, you see that these do kind of dip during those early and mid-weeks of March when we were sort of in the throes of this crisis. But, again, what I think is very important to see here is how quickly they snap back to relatively normal levels. And, again, I think that is a pretty strong indication of generally the health of the SEF marketplace and the way that the platform performed during this crisis.

Similarly, you see this -- a similar trend on the hit rate chart above. And the hit rate is sort of a similar metric, but looking at the customer side, the liquidity-taker side, and what percentage of times they actually, you know, consummate the trade that they've sent in their request for quote for. But, similarly, you see this sort of get a little bit in that sort of mid-March timeframe, and then relatively quickly come back in line with what we consider to be more normal levels. Next slide, please.

Again, looking at the charting here, some additional markers of liquidity on the platform and health of the platform bid/offer spread. This is obviously sort of a traditional way to look at the liquidity in the market and generally sort of the health of the market. And we see a very similar thing, which is that certainly those spreads did gap wider in these periods of sort of heightened volatility or constrained liquidity, but once again, very quickly snapped back to a much more normal range. And even during those times in which the bid/offer spread had widened out, as I mentioned earlier, participants may have become slightly less price-sensitive and willing to accept a wider bid/offer spread as long as they were able -- as long as they still had the ability to move sizeable amounts of risk, which we saw that they did do. Next slide, please.

So, what conclusions can we draw? Obviously, this was a challenging time in March, but we observed market indicators of constrained liquidity but not really market interruption. So, participants continued to be able to trade on the SEF. They were able to trade, obviously, in larger volumes than they ever had before, and able to trade in large size on the platform. SEFs were flexible enough to absorb this type of modified client behavior, and so clients were able to transfer risk.

We did -- interestingly to note, we have worked with the CFTC to provide data around all of these bid/offer spreads in the metrics that we saw, such that the CFTC could continue in conversations with, you know, the marketplace and with groups such as ISDA on the events of March and, you know, whether these SEF platforms operated as intended.

So, in conclusion, it is certainly our position that the market did behave as expected, despite the challenges in the marketplace and the constrained liquidity that we saw through March.

Thank you again for the opportunity to present today.

CHAIRPERSON ZAKIR: Thank you, Elisabeth. Why don't we turn to Chris Barnes.

Chris, are you on the line?

MR. BARNES: I am on the line. I'm back. Sorry about that.

CHAIRPERSON ZAKIR: Okay. Great. So, before we turn it back over to you, can we -- why don't we cue the slides. Okay. Great.

Chris, I'll turn it back over to you to continue where we left off.

MR. BARNES: Thank you very much. So, I was just in the middle of saying that the market participants continued to choose clearing. It doesn't really matter how we measure it, whether you measure it on notional or the amounts of risk transacted. That 96 percent of vanilla fixed-float swaps were still cleared in March 2020.

Now, that might not be such a surprise for these six major currencies I highlighted given there are clearing mandates in place. But, as the current slide shows, the market volumes across all other currencies, as well, excluding the six largest, also hit a record in clearing. Again, another way of reinforcing the sheer nature of the global shock the markets saw.

What else I want to highlight on this particular slide is the sheer growth in volume the CCPs have seen in these smaller currencies. I think we're covering something like 14 currencies here. And this is a timespan that covers only three years, and yet in those three years, global cleared volumes in these currencies alone have pretty much tripled. It's really, really impressive to see how the clearing architecture has continued to scale up.

Now, if we just move to the next slide, leaving away from global data, which is taken from our CCP e-product. What's really, really important in terms of Dodd-Frank post-trade transparency is that it gives us a picture at a transaction level for trades transacted. What that transaction level of transparency allows us to do -- and this is really important for months like March 2020 -- it actually calculates the amount of risk that's trading.

So, rather than just looking at the notionals that are reported to SDRs, what we do at Clarus is we consume that data and we perform analysis on it and we translate the notional into either what the discounted value to basis point. What that tells us is how much risk is passing through the market, and it is not distorted by lots of short-dated, very high-notional trades, which may be smaller in risk compared to a smaller notional, long-dated trade.

So, what we saw in March 2020 was that it was also a record month in terms of the amount of risk reported to an SDR. What that means is that the record volumes we saw across the market, they were not just a result of short-dated, large notional trades. Real risk, really large amounts of risk, were effectively passing through the market. That's very unusual when all of the central banks are in play. Normally when that happens, we see a lot of short-dated trades, but that doesn't necessarily mean that it's a record month for risk.

Drilling in on particular markets, it was a record month in Dollar IRS in terms of the amount of DV01 reported. When we look at the sheer size of risk that went through compared to a typical month, which is pretty much a 12-months rolling average, for March 2020 alone, we saw 90 percent more risk transacted. That's really, really impressive numbers. If we go to the next slide.

What I think is really, really important about that record month in Dollar IRS is exactly as the title says here -- Transparency Worked. I think it's important to cast a light on the U.S. SDRs, the U.S. post-trade transparencies, the OTC rates derivatives, is the only transparency regime across all of the jurisdictions -- Europe, Asia, et cetera -- that actually works, that actually gives market participants access to post-trade transparency and gives us a view of the market.

What that means is that there is the possibility for dealers who have multiple entities, who are active across multiple jurisdictions, to actively trade in entities that do not report to U.S. SDRs. So, when we have a crisis, when we have volatile markets, there is a possibility that these dealers could intentionally move their trading activity away from these mixed markets in the U.S. And, I cannot stress enough that during March 2020, that is behavior that we did not see.

I consistently -- 45 percent of the global Dollar IRS market was reported to U.S. SDRs. That is entirely in keeping with historic averages. We calculate that average by taking our data sets of cleared Dollar IRS across all of the global CCPs and we compare that to what is reported as cleared Dollar IRS in the SDRs themselves. I think that is really, really important.

I used to be a cross-currency swaps trader for 12 years, and that's a very, very liquidity-constrained market. I'd say it's -- it only trades periodically. And, when I was trading that during the GFC from 2007 to 2009, it was a constant fight whether those markets were actually functioning, whether there were prices, whether there was liquidity, whether it was possible for our customers to actually transact risk.

And, during March 2020, what post-trade transparency gave us market participants were really, really clear signals that markets were not seizing up. They were not seizing up. They were continuing to trade. And what that does, it removes a lot of the rumors from the market.

Back in 2008-09, there were always rumors floating around, irrespective of product type, of something traded in large size massively off-market. With post-trade transparency, all the value in those rumors just disappears. And, what is key from being able to use that transparency data in those volatile markets is that both price information and volume information is displayed. That allows us as market participants to really assess the value of the data and whether those prices are being traded at a consistent market size and where large pockets of risk of moving, as well. I think that's a really important message that transparency worked during March 2020. And just move on to the next slide, please.

It's also worth noting -- and I note that Tradeweb and Bloomberg have said this already, but I will go through this quickly -- that SEFs, during March 2020, worked extremely well. They actually worked so well that I struggled to fit three kind of meaningful slides that highlighted just how well they performed. We could really take any metric in terms of volume, products, et cetera, et cetera, to really express just how well SEFs performed during March.

So, the kind of headlines and bullet points here are there was a record percentage of Dollar IRS transacted on SEFs in March 2020, reflecting how good March was, I think. If you look at April, it was a new record, 71 percent of Dollar IRS was transacted on SEF in April. I don't think if market participants had had a bad experience with SEFs during all the March volatility they would have floated back to SEFs in April. I think it really speaks to how people had a good SEF experience during volatile markets.

Now, interestingly, when you look at which market participants chose SEFs, the volume data very clearly states that it was the dealer's customer, the

D2C market, that really saw a big increase in volumes traded during March. The combination of Bloomberg and Tradeweb during March hit a combined 75 percent market share across all currencies for all vanilla fixed-float IRS. That was the high point for that market share of splits of D2C platforms.

It's also worth noting that this wasn't in a shrinking SEF market, right? The outright volumes actually transacted on SEF were also at records. For example, for Dollar IRS. So, it's not as if the D2C community of SEFs captured a bigger portion of a shrinking kind. These were record outright volumes, as well, and so everything has grown. It's just the D2C area grew more in terms of volume than the D2D area.

If we go to the next slide -- and this really rings true with what Liz was just saying -- what worked for well for the D2C sects, and I think this is particularly interesting in terms of the recent consultation on block trading, is that a huge percentage of risk was traded as block trades on D2C SEFs. Now, there's a little bit of quirk of transparency in terms of how we know that, how we know this. But, essentially, only block trades are executed on Bloomberg and Tradeweb. And, so, we know from the combination of SEF reports and SER reports that block trade volumes as a whole hits a record during March 2020. We also know from the SEF reporting and the transparency that the SEFs provide themselves that 43 percent of Dollar IRS volume was transacted as a block. That was a high amount for this year.

Now, again, block trading has continued to be popular even after all of the volatility we saw in March and the beginning of April. It really, really suggests in the data that the market participants have had a good experience. They've had a good experience of transacting blocks when times are tough, and so they've continued to do that even after the huge volatility we've seen.

Now, finally, on the next slide. Moving away a little bit from volumes alone, what post-trade transparency also allows us to do is look at prices. But, of course, those prices don't operate in a vacuum. There's always this kind of intellectual struggle we have as market participants to define exactly what market liquidity is. It is probably fair to say that market liquidity is a combination of volumes, but also price.

We've concentrated almost exclusively on the previous slides in terms of what volumes have done. However, with the transaction level data provided as a result Dodd-Frank, we can look at the prices transacted, as well.

Now, on the Clarus blog, we've run a whole series of blogs trying to look at this quite intricate measure of price volatility, which is called price dispersion. It's actually quite a simple measure. All it does is looks at the volume-weighted contribution of trades during the day to the overall average, the overall volume-weighted average price.

As a kind of broad-brush rule of thumb, if price dispersion increases, it suggests that maybe bid/offers have increased. It certainly suggests that there is a bigger gap in price between trades, and so it's used as kind of an analogy for liquidity.

If price dispersion goes up, it's normally a negative sign for liquidity. Equally, what you could say in light of March 2020 is that we saw volumes going up and hitting records. Volumes can't hit records if there's no liquidity in a market. So, another way of looking at the fact that price dispersion went up when the markets were exceptionally volatile is that the price to access that liquidity when markets were volatile was higher. That's clearly what the chart shows.

You know, there was a very concentrated period of probably about 20 trading days where price dispersion was very much higher compared to all of the previous 2020, and certainly compared to the period after. But, it's also very evident that those pricing conditions returned to normality very, very quickly.

Now, it's difficult to give, you know, an exact representation of what price dispersion is without getting into all of the mathematical details, so I would just encourage people to have a look at the research out there because it’s a really, really interesting metric, I think.

My final slide, if we can just skip forward, looks at uncleared markets. So, I have exclusively looked at what has been cleared and what's transacted on-SEF so far. However, of course, we do have a whole other portion of the market -- the uncleared market. It is particularly of interest to me because I used to be a cross-currency swaps trader. Cross-currency swaps, along with swaptions, remain the two largest uncleared markets certainly from a rates perspective.

Now, if we look at cross-currency swaps, that is a direct measure of how people are raising dollar funding. And, as we all know, dollar funding access was very much at the center of this crisis. It was very much also at the center of the central bank responses to bringing market conditions under control. And, so, we saw central bank FX swaps opening up in unlimited amounts for the major currencies. We saw the uptake of those facilities hit levels never seen before. They were even higher than back in the 2008 crisis. The uptake by the banks of those facilities for dollar funding was exceptionally quick.

And in light of that, everybody expected there to be record volumes traded in cross-currency swaps, and yet when we go and analyze the SDR data for cross-currency swaps, we don't see a spike in volumes for March 2020. It's really surprising because it was short-dated dollar funds being offered by the central banks, so you would expect that to filter down into the bilateral markets. You would expect those to be very large notional amounts. Therefore, you would expect to see a spike in notional amounts traded, and we do not see that in the data.

Similarly, for the swaptions market, when all the central banks are in play, they're all cutting rates, okay? It will bring long-dated volatility down eventually, but that initial spike of activity should still result in a lot of short-dated, large notional trades being reported.

We thoroughly expected to see all-time records in cross-currency swaps volumes and swaptions volumes. The SDR data just doesn't show that, and that's really concerning. You know, it really highlights to me how limited the transparency remains in these uncleared markets. Now, I haven't written any research on this yet exactly because there isn't as much transparency in uncleared markets.

So, we don't know if market participants actively avoided trading out of SDR-reporting entities. We don't know if volumes in these products were larger in Europe and Asia than the normal because we don't have post-trade transparency in those jurisdictions. We don't know whether market participants were trying to trade these and yet the liquidity wasn't there. We don't know if the markets failed to scale.

And equally, if that was the case and the failure to scale wasn't there even though the demand for these products wasn't there, we don't know why. Was it that people were avoiding taking on more bilateral counterparty credit risk, or was it somehow a result of operational complexities, which may come from the uncleared marginals? We just don't know. And, so, I really feel like coming out of the market volatility, that should be a big, big focus for future research.

Finally, I just wanted to highlight on the next slide, we have a widely-read blog, clarusft.com. We cover aspects that are, you know, very, very much at the heart of market structure -- clearing, transparency, and regulation. If there's any charts in here that are of particular interest to you, you will probably find them on the blog with a more in-depth description of the exact type series.

On that note, I'll leave it at that.

CHAIRPERSON ZAKIR: Thank you, Chris.

Now we're going to move into the moderated portion of today's discussion on market functioning and performance during the recent market events surrounding COVID-19. I'm going to turn it over to Lisa and Stephen to help moderate this session.

MS. SHEMIE: Thanks so much, Nadia. And thanks so much to the presenters who did great presentations to tee off the conversation that we hope to have among the Market Structure Subcommittee members and the broader MRAC members on these important market structure issues.

Just as a reminder, to the extent any member would like to ask a question or make a comment, please refer to the meeting instructions that Alicia has provided regarding how to ask questions or to be recognized.

And, with that, we'll start with a few of our fellow MRAC members who have expressed some points that we thought may make sense to discuss following these great presentations.

I'd like to start first with Sam Priyadarshi from Vanguard. I'm wondering, Sam, if you may be able to perhaps broaden this discussion, which was admittedly pretty swap-heavy, to touch on market functioning and performance in other classes, asset classes such as, for example, with the futures, past treasuries, even CDX swaps and bonds. If I can point to you, Sam.

DR. PRIYADARSHI: Thank you, Lisa. Vanguard appreciates this opportunity to share with the MRAC our experience on how the markets performed during the liquidity crisis in March.

Vanguard is a global asset manager that offers about 425 funds with total assets of $5.9 trillion, serving more than 30 million investors worldwide.

My name is Sam Priyadarshi, and I'm a Principal and Global Head of Portfolio Risk and Derivatives at Vanguard.

The first quarter has been an unprecedented challenge for markets, not to mention the destruction to everyone's lives that the pandemic has caused. During mid-March, much of the fixed income markets had become dysfunctional with limited liquidity and very high levels of market volatility. Trading in rates, credit, and FX markets had become extremely challenging until the Fed intervened for more liquidity.

First, let me discuss the futures and cash treasury markets. During mid-March, liquidity conditions in the futures and cash treasury markets became fragmented, and it was challenging to trade risk in meaningful size. The epicenter of this market breakdown was an unraveling of the futures basis driven by the way the bank balance sheet is allocated and exacerbated by the market's reliance on high-frequency and automated market making. There was a simultaneous demand for liquidity met by these cash, futures-basis positions, alongside money fund redemptions, market borrowings, and FX reserve managers selling, all of which exhausted dealer balance sheets and brought the market to a grinding halt. Once the Fed stepped in with extraordinary levels of balance sheet accommodation, the markets were stabilized.

The daily average bid/offer spread to trade 100,000 DV01, or U.S. Treasury futures contracts, spiked in mid-March. One hundred thousand DV01 is equivalent to approximately 1,200 10-year U.S. Treasury futures contracts, or about $108 million of 10-year cash treasuries. Spreads earlier this year had been one-quarter to one-half a basis point, but increased to one to two basis points during the depths of the liquidity crisis, and it took several weeks to return to more normal levels.

Taking a closer look at daily liquidities, there was a period of several weeks when there was not enough liquidity to be able to consistently sweep 100,000 DV01 in U.S. Treasury futures. We traded large orders using algorithms for longer periods of time. The liquidity constraints were more significant in the longer end of the curve where U.S. long bonds and ultra-bond futures contracts experienced very low levels of liquidity. Market depth was shallow. Part of the liquidity was light, and contracts were trading several ticks wide.

By April, trading large size was possible in the front end and barely in the intermediate futures contracts, albeit at much higher costs. But long-end liquidity remained patchy for several more weeks and still has not returned to prior levels in terms of available liquidity and cost trade.

Let me now turn to on-the-run U.S. cash treasury markets. The liquidity was consistently much lower, more fragmented, and cost more to trade much lower risk than the U.S. Treasury futures market. The daily average bid/offer trade spread to trade just $25,000 DV01 of risk in on-the-runs for each point on the U.S. Treasury cash curve spiked to three times wider than normal. This trend for cash treasuries persisted through April and into May.

Off-the-run treasuries were a completely different story. As the market quickly transitioned to the first-ever, widespread work-from-home model, electronic markets remained operational, but the trading and cash markets became fragmented and dysfunctional. For several days through the depths of the volatility crisis, several banks told us that they could not trade off-the-run treasuries. Those who would still make market dips look very widespread. These liquidity challenges persisted while the private market was unable to provide liquidity. The markets only began to function again once the Fed stepped in to stabilize the market.

Various markets were similarly stressed and dysfunctional. Amid the liquidity drought, accounts focused on selling shorter maturity bonds to raise cash. The premium on liquidity and the re-pricing of risk assets contributed to the inversion in credit spread curves while bid/offer spreads in investment rate cash bonds experienced significant widening. Prior to the COVID pandemic, corporate bond spreads averaged about 2.5 basis points. During the liquidity crisis, that averaged spiked to between 10 to 20 basis points, and there were even days when dealers refused to bid for corporate bonds.

In credit derivatives, CDX IG bid/offer spreads widened from about one-quarter basis point in normal environments to four basis points during the crisis, but this was nowhere near the magnitude of widening in cash corporate bonds. For example, during even the most stressed days, one could trade $100 million in CDX IG on the SEFs with a bid/ask spread of three basis points. In comparison, trading $100 million in cash investment rate bonds would have been done at spreads between 30 to 50 basis points, if it could be done at all.

Conditions have improved considerably since the Fed announced the corporate bond credit facilities on March 23rd, and overall functioning of the credit markets has largely been restored. That said, we find that liquidity has not fully returned to prior levels and the futures and cash treasury and corporate bond markets still remain vulnerable to shocks. However, during the peak of the liquidity crisis, we found it easier to trade listed futures and SEF-traded interest rate swaps and SEF-traded CDX swaps than their cash counterparts.

Chair Tarbert commented earlier that the derivatives market remained resilient throughout the turmoil and market volatility earlier this year and worked the way they were intended to work. Our experience certainly corroborates that. Vanguard, along with many other asset managers, benefit from the ability to trade on listed futures exchanges and on-SEFs, and these benefits are attributable to the Commission's current SEF regulations, which have advanced improvement in liquidity, price transparency, expanded competition, and trade efficiency.

Thank you very much.

MR. BERGER: Thank you, Sam. That was very insightful.

I'd like to now recognize Lee Betsill, who I believe has more to share on futures market activity. Lee?

MR. BETSILL: Thank you, Stephen.

I think what has been clearly talked about up to this point already was that there was a true need to access transparent and open markets in order to be able to manage risk and exposures in a time of unprecedented volatility. I think our experiences of the exchange-traded markets during -- especially during the end of February and March when volatility was at its most extreme, demonstrates that despite, as one would expect, some slippage in bid/offer spreads, the ability to be able to manage exposures and to conduct transactions in larger, and in some cases much larger than normal, size, the ability to do so was clearly there.

That was demonstrated in the C and E markets by record volumes in a number of our asset classes. So, the ability to be able to transact large volumes throughout the trading day, and in fact 24 hours a day, was there and available.

Just a few statistics on that. The average daily volume for all of Q1 -- and remember that the volatility kicked off towards the -- you know, the last week of February. But, taking into the account the entire quarter from January to March, average daily volume on C and E markets was 27 million contracts per day. And approximately half of those, of that volume, came from our interest rates derivatives complex, so averaging about 13.8 million contracts over the quarter. In fact, five of our top six all-time record days were completed during this period where we did more than 55 million contracts transacted in a single day.

I think that, you know, those statistics show that the ability to be able to transact and to transact in large size was there, and to do it in an order book where the bids and offers are transparent and accessible.

Just a couple of other statistics. As I said, our interest rates complex showed 13.8 million contracts a day on average during the quarter. That was an all-time record -- 34 percent higher than Q1 of 2019.

But, other asset classes also saw all-time record volumes. Our equity complex traded some 6.5 million contracts a day, more than double the same quarter 2019.

The crude and refined markets and energy overall also saw extreme volatility as the supply and demand really shifted during the COVID crisis. There, we also saw record volumes of 3.2 million contracts a day, which was 38 percent higher than Q1 2019.

Also, metals, primarily precious metals, saw record volumes. More than 58 percent over Q1 of 2019.

So, I think that, as I said, that ability to be able to transact in an open order book and to be able to do so in large size demonstrated that the need to access liquidity was actually there in the time when it was most needed in this unprecedented volatility.

With that, I'll turn it back over to the moderators.

MS. SHEMIE: Thank you so much, Lee, for your thoughts. We'd like to point now to our colleague, Bis Chatterjee, with Citi.

Bis, if you wouldn't mind perhaps giving us some views from the dealer perspective on how the marketplace functioned during the period of volatility.

And, we will ask that perhaps all of the comments going forward, since we have an embarrassment in riches of comments, to try to keep them fairly brief as we also have other members of the subcommittee who'd like to weigh in.

So, thanks so much, Bis.

MR. CHATTERJEE: Lisa and Stephen, thank you, as the chairs of the Market Structure Subcommittee, for allowing me to present comments on behalf of Citi. Thank you to Commissioner Behnam for being a very engaged sponsor and Alicia for doing a fantastic job putting together this meeting. Finally, thank you to CFTC Chairman Tarbert and the rest of the Commissioners for responding to market conditions providing relief in March and April because, you know, as all the indications we've seen from the presentations, markets were in a really deep hole back in March, but your actions really have helped the market come back really quickly.

Just a few observations from my side reflecting how we, as a dealer, saw the market and how it kind of impacted the market structure. We've heard about, you know, the issue on how a lot of trading -- we saw volumes increase, and block size. That was certainly our experience, as well. And that's where the flexibility of the trading protocol from the SEFs, you know, the ability to use -- as RFQ to one really helped move some of the larger block trades.

We did experience trouble with trades that were just below the block size, and especially, I think, the comment of Vanguard, my colleague, Sam, mentioned that, you know, challenges with long-duration, 15 to 20 years and longer, were difficult to execute.

One thing I'd like to point out that, you know, the block trades are typically set on notional, whereas the market looks as risk from a 01 perspective or a duration perspective. And, when rates collapsed, both -- the Fed action, that really had an impact of taking the same notion and creating a larger risk profile for it. So, we think that, you know, that some of that definitely impacted the inability to, you know, trade what seemed like nominal sizes because of the increase in risk duration.

We saw a big interlinkage between the various markets. We noticed in March that, you know, the fluctuation in the treasury market, the lack of liquidity suddenly impacted the ability for a lot of swap traders to be able to not hedge their risk in other cross-markets. We certainly felt that the lack of liquidity in the treasury, the treasury future market, certainly compounded the lack of liquidity in the swap market.

We also did notice that, you know, post the Fed action, and as the volatility in the treasury market died out, the swap market notional and the volumes of the liquidity did pick back up to close to normal levels.

Finally, I think, you know, to wrap it up, to speak from the market structure perspective, we certainly saw fewer market participants actively trading in this marketplace. We also saw, you know, certain market classes who act as intermediaries between various rate markets and other cash and derivative markets who kind of hedge between swap, futures, treasuries, treasury cash market, to kind of, you know, seem to be more adversely impacted as they were conducting their day-to-day operations.

I'll leave you with that. I will, you know, stick to your guidelines and conclude my brief comments.

MR. BERGER: Thank you, Bis. I'd like to turn next to Rob Mangrelli from Chatham. Rob, we welcome your perspective, particularly your insights into how end users fared during this episode.

(Pause.)

MR. BERGER: Rob, do we have you on the line?

MS. SHEMIE: I think Rob might be having some audio problems, so perhaps we'll move on if it's okay. And if Rob can come back on after, we'll point to him again. But, if you don't mind, perhaps we can point to Craig Messinger at Virtu, who -- if you wouldn't mind, Craig, perhaps mentioning how you thought the experience from the CCP perspective during the volatile period and whether, for example, you may have seen benefits to things like portfolio margining programs.

I'll turn it to you, Craig.

MR. MESSINGER: Yes. Thanks, Lisa. I'll try to keep -- first of all, I want to thank the Commission and Commissioner Behnam and Alicia for their commitment to the various tasks forces and the MRAC mandate. Also, a special recognition to all the Commissioners for your availability and engagement during, you know, the last five months. It has been outstanding.

My observations are a little bit along the lines of the fact that, you know, we've seen unprecedented amount of good activity, whether it's the regulatory bodies, the Fed, administration, whatever, and their ability to recognize problems that have popped up and willingness to engage in dialogue. It has been really nothing short of amazing and, you know, excellent job all around.

But, there were some unique challenges that occurred, particularly in March, and continue, with how CCPs and their members have to manage volatility spikes. And the differences in the application of margin, especially when there is a Fed backstop -- when a Fed backstop is not available has put certain markets in a little bit of a difficult time that probably wasn't talked about as much as the debt markets were talked about.

Now I'm going to focus a little bit on equities just because it's an easy one, and I think it will resonate a little bit with some folks on the call. You know, if you think about U.S. equities in the surrogate and derivative products that we see in PS options, indexes, futures, et cetera, there is really not a lot of predictability to how the market structure is evolving and/or how participant behavior is evolving.

You go back about nine months ago, zero commissions became a popular product, if you would, with retail. And then when you put the stay-at-home restrictions together, you saw retail participation lift from let's say an average of about a year ago, March of '19, of about six percent of the average daily volume to a peak of around 24 percent in March. And, post-March, I think it has ranged somewhere between 16 and 22 percent of the daily volume. That's a huge change.

You have also seen an enormous explosion in managed accounts, low-cost index products, and obviously UTFs. And the size, the notional size, of these trades has been enormous, not just prior to this issue, but all during this time. And why is that? They need to meet transition, rebalancing or asset allocation needs of these passive investments.

Even though these trades were typically executed as agent, the spike in volatility required a much higher level of margin to be posted at the CCPs, as an example. And, it's right at a time where, you know, the need for liquidity is higher, and in many ways, it's being reduced because there's nothing like a Fed backstop, as an example.

There's also the fact that the underlying stocks are also increasingly concentrated, right? So, whether it's Google or Apple, there's such a big portion of these sort of underlying indices or these mandated managed accounts that they disproportionately tilt trading activity.

Another dynamic, for example, is high-priced stocks. When was the last time we've seen a split? So, there's a lot of high-priced stocks, and this also kind of feeds into this equation.

So, when I think of it, you've got this sort of phenomena where the CCPs are doing what they're mandated to do. Their models and their activities are well documented. But, many of those things were put together in a different time where you didn't have this sort of concentration, high-priced stocks, individual investors, at a much bigger percentage of the activity, and kind of a behavior that investor managers need to perform, which really doesn't work well with the current construct.

So, we know that the Fed has been an active participant in remediation and standing up programs for the debt markets, but I'm not aware of any similar effort in the equity markets or its derivative components.

So, that kind of asks the question, should there be this discussion? Should there be programs in the future that the Fed considers or the regulatory bodies working with the Fed consider to help smooth out markets like equities and maybe options and others that don't really have as many off-setting capabilities.

So, what I can share with everybody on the call is, the interest in the industry seems to be pretty high to engage in these discussions. Certainly, over the last couple of months, I know of a number of people on this call that have been involved in a few of those. There are a number of efforts underway with the traditional regulatory bodies that such markets like that, the CCPs themselves and advocacy groups, and I know there has been a number of discussions with various commissioners at the CFTC as to whether those are impactful and important things to potentially consider going forward. So, you know, I think that's going to be something for the commissioners to advise us on.

But, you know, the general overview, Lisa, is that, you know, we've got a marketplace that never anticipated the type of market structure changes that it has underseen -- that it is seeing, excuse me. We've had levels of volatility, although it seems to be less chaotic now than it was then, that really spiked the needs. And it's right at a time where liquidity is most needed.

You know, the result is market makers have to really either cut back on what they do in terms of the size of liquidity they would be willing to provide. Spreads tend to widen. And then ultimately, you're somewhat trading liquidity just at a time where both market participants and market makers and individual investors need that liquidity to be bigger.

MR. BERGER: Thank you, Craig. I think we have Rob back on, so let's hand it right back to Rob.

And I know we have, after Rob, three more folks have also raised their hands, so -- just so we can get everybody in in the next 10 minutes, let's try to keep everybody quick.

MR. MANGRELLI: Yes, Stephen. Thank you. This is Rob. Hopefully you can hear me okay this time.

Just wanted to share my experience at Chatham Financial. We are the largest independent interest rate and foreign currency derivative advisory firm. Part of our capacity is executing risk management transactions on behalf of our client base, which is predominantly end users, including financial end users. I'm going to speak specifically to some of my own personal experiences with on-SEF trading during the month of March on behalf of my own customer base.

During the month of March, I estimated that I traded somewhere in the order magnitude of about $5 billion of notional, including risk trades somewhere in the order of magnitude of, you know, $3-4 million of DV01. I would say just generally, now that March feels like an eternity ago, the themes that I kind of pulled out of my own personal experience was -- many of which have been covered here already. There were some instances of dealer liquidity providers failing to respond to RFQs, not to the point where I wasn't able to transact, but definitely when situations, you know, prior to some of the increased volatility, I would have been able to quickly get back, you know, somewhere let's say three to five quotes. Sometimes I was only getting back one to two.

Clearly, there is some widening of bid/offer. I would say along those lines, as well, some evidence of decreased liquidity in what I experienced in terms of, you know, poor winning level to, let's call it not just cover, but further down to like last level. Oftentimes, that spread could have been, at the height, maybe five basis points from the winning level to, you know, the last place dealer. And, a number of instances of increased leniency of response.

I would say, you know, one of the -- the bigger, high-level topics that, you know, I took away from that was that, you know, I think going into this crisis, I knew that, you know, various liquidity providers had differing levels of investment in their own, you know, systems and technology to support their SEF activities. And, I think that, you know, as part of this experience, maybe something that is worth considering, you know, investigating further, is just, you know, with the movement from -- that we have experienced of people having to work from home. Just how much of that, you know, technology contributed to some of the experiences and some of the outcomes people experienced on on-SEF trading. For example, as opposed to, you know, maybe voice trading.

So, I'll leave it there. I know we're kind of pressed for time.

MR. BERGER: I appreciate it, Rob. Thank you.

I'd like to next recognize Salman Banaei from IHS Markit to share his perspectives.

MR. BANAEI: Thanks, Stephen, and thank you Commissioners and fellow members of the committee. So, I'll just be very quick. I know we're stretched for time.

So, you know, we've been monitoring the market from a number of different perspectives as a post-trade trade processing system, as a leading index and pricing provider, but also as a company that employs a number of macroeconomists that provide macroeconomic forecasts to a variety of financial institutions, as well as public companies.

So we -- from our perspective as a trade processor, I can corroborate some of my colleagues' discussion. The ability to transact is there. In terms of operational performance, I think the market infrastructures, as well as us, performed well under increased volatility and increased volume. We have seen --

One interesting point, which also corroborates a point I think Lee made earlier, with the elevated volumes, we actually saw -- in the rates markets, we saw generally greater volumes -- I'm sorry, greater notionals, with the exceptions of 30-year U.S. dollar and euro swaps, which implies a large amount of risk transfers occurring, you know, in the aftermath of the COVID crisis.

From our perspective as an index and pricing provider, we've seen stabilization across the cash and derivatives credit markets with one notable exception, which is the CMBS markets, particularly BBB and lower credit rated CMBS, we're seeing still significant drop-offs from the February highs. Although, even those lows are still off of the profit in March.

And, I'll do the risky thing, which is to predict a little bit about the future because, as I've mentioned, we have a number of macroeconomists that I work with. As we look into the markets in the future, we see the roll-off of a number of CARES Act protections and support facilities as a likely increase in volatility in months to come, to say nothing of the election. So, while volatility is currently fairly low, relatively low, particularly when looking at recent history, it may be a bumpier ride in coming months.

Thank you.

MR. BERGER: Thank you. I'd like to turn now to Graham Parker from DRW on behalf of the FIA Principal Traders Group.

Graham, can we ask you to share your thoughts?

MR. HARPER: Sure. Thanks, Stephen.

First, I want to thank the Commission and the committee members for all the work put into this meeting today and for the opportunity to participate on the committee.

I'll be very brief. From the perspective of FIA-PTG, which I think most everyone is aware is a subgroup of FIA representing principal trading firms, there's general agreement markets functioned well overall through what has been a period of significant volatility and high volumes.

As a group, we were committed to remaining active in the markets where we trade to ensure participants had access to the liquidity they needed. And for DRW specifically, our data demonstrates that across asset classes, our market share increased, meaning --

I think market-wise, data would illustrate the PTFs continued to actively participate in the market and further dispel the narrative that PTFs, as a group, tend to back away from providing liquidity during times of high volatility. And we would very much welcome any such analysis done by the Commission.

Thanks.

MS. SHEMIE: Thanks very much, Graham.

We also received a question from Eileen Kiely from BlackRock, if you'd like to share your views.

MS. KIELY: Yes. Thank you very much. It's Eileen Kiely from BlackRock.

Just a few comments. I think we'll echo what we heard from our colleagues at Vanguard, Citi, and Chatham, that we did have some real issues getting efficient execution for our clients during some of the more volatile periods, which is interesting that it contradicts the high-level data that we saw from the three presenters. So, I was very interested to see that, specifically with the trades just under block sizes, and we also had problems with the RFQ three requirements.

What I think I'll do is just make a comment on what I think that means, which I think it demonstrates a need for flexibility on these rules, particularly during volatile market. You know, I think the threshold setup instead has been done through a normal, stable market run and are not likely to hold up during volatile markets, and it did not hold up. And we think that some of the reluctance to get some of the quotes that we were hoping to receive were perhaps because of dealers' concern over real-time reporting requirements.

So, I think we would suggest that, you know, perhaps the Commission consider separating block size from real-time reporting requirements, and also reconsidering some of the RFQ three requirements. But, also put in a mechanism where block sizes can be quickly recalculated during times of high volatility and perhaps size them liquidity- and risk-specific issues rather than just notional. And I'll leave it there.

MR. BERGER: Thank you, Eileen. And, for our last comments, last but not least comments, for this portion of the session, I'd like to recognize Marcus Stanley from AFR.

DR. STANLEY: Thank you. This is a question to presenters. We heard some very impressive information from Clarus and others on how well the derivatives markets performed and that they stayed flexible and handled the stress very well. But, then, we also heard from Sam Priyadarshi in the comments, and also Craig Messinger, as to the importance of Federal Reserve intervention in the underlying markets and how important that was. And a couple people, others, have mentioned that, as well.

Did any of the presenters look at the impact of -- sort of the indirect impact of Federal Reserve interventions on creating liquidity for the derivatives markets and how much of the good performance was related to that and was related to the dates those facilities and so on went into effect?

MR. BARNES: Hi. It's Chris at Clarus. I think it's a very interesting point to raise. On my final slide, in terms of looking at the uncleared markets, that was the exact link that we expected to see between cross-currency swaps and central banks' FX facilities. We expected, because there was a clear, clear constraint in dollar funding, that once these facilities were opened that not only would banks access the facilities, but also that the volumes and hence the implied liquidity in some of these derivatives markets would get better, as well.

Now, unfortunately, because uncleared markets are not as transparent as cleared markets, we can't draw any conclusive facts from the data that's available at the moment. But, if we assume that it was a consistent portion of the market that was reporting to U.S. SDRs, there isn't any evidence in these uncleared markets specifically that those central bank FX swaps actually led to an increase in dollar availability in bilateral markets.

MR. BERGER: Thanks. Do other presenters have any thoughts or others have any thoughts?

(Pause.)

MS. SHEMIE: I think this concludes the Market Structure Subcommittee's moderated discussion. Thank you so much to all who participated.

CHAIRPERSON ZAKIR: Thank you, Lisa and Stephen, for a very informative discussion.

Now we will have the report of the CCP Risk and Governance Subcommittee. The co-chairs are Alicia Crighton and Lee Betsill.

Alicia and Lee, you have the floor.

MS. CRIGHTON: Great. Thank you. Good afternoon, and thank you to Commissioner Behnam, Alicia Lewis, Nadia Zakir, and the MRAC for allowing us to provide an update on the progress on the MRAC CCP Risk and Governance Subcommittee.

Before starting with the update, we wanted to thank the members of the CCP Risk and Governance Subcommittee, who have committed an extraordinary amount of time and effort to advancing the goals of the subcommittee during particularly challenging times.

The MRAC established the CCP Risk and Governance Subcommittee to provide reports and recommendations directly to the MRAC regarding issues impacting clearinghouse risk management and governance. As an update to the December 2019 subcommittee report, we have structured the committee into a series of workstreams in order to advance the more detailed discussions required to produce actionable recommendations and detailed best practices to the MRAC.

Each workstream is led by two subcommittee members, and the details are as follows:

Margins is Dale Michaels and Alicia Crighton. Default Management, Kevin McClear and John Murphy. Governance and Transparency, Lee Betsill and Marnie Rosenberg. Stress Testing and Liquidity Framework, Richard Berner and Matthias Graulich. Capital and Skin in the Game, Robert Steigerwald and Dennis McLaughlin.

Commencing in mid-May, the subcommittee started to meet on a weekly basis to discuss each of the workstreams. At this stage, each of the workstreams has met at least once. It is important to note that while the subcommittee has agreed upon a series of topics to review and provide recommendations on, it is possible that the recommendations may not be agreed on by the subcommittee, and therefore, a summary of the discussion will be provided to the MRAC.

At this time, we will provide an overview of the topics under review in each of the workstreams and anticipate providing the final work product to the MRAC at the final meeting in 2020.

I'll hand it over to my co-chair, Lee Betsill, now to provide workstream-specific updates.

MR. BETSILL: Thank you, Alicia. And I will just also echo my thanks to the broader Market Risk Advisory Committee, the Commissioners, Commissioner Behnam, as well as Alicia and Nadia for all the hard work putting these meetings together and providing us the opportunity to discuss the important topics of, in this case, CCP risk and governance and how we contribute to the stability of the broader financial markets.

As Alicia said, we have five workstreams focusing on various topics with a goal of producing final reports at our final meeting of this year.

The topics being discussed include margins at CCPs, and the topics under discussion are the importance of pricing feeds and best practices associated with establishing prices for mark to market and initial margin setting; margin period of risk in CCPs initial market models; additional add-ons to initial margin, including liquidity and concentration margin; margin and volatility floors in times of low volatility, which we obviously haven't experienced these last few months; and, as well, best practices around intraday margin calls, both routine and non-routine. So, that is the margin workstream.

We have a separate workstream covering default management practices. There was a subcommittee of the MRAC, who reviewed default management practices in 2015 and '16. Our subcommittee of this MRAC is reviewing the recommendations that were made at the time with the intention of providing an update on progress against those recommendations and providing comments on where those recommendations still have further work to do or are no longer relevant for that matter.

The third workstream is governance and transparency. Within that workstream, we have split into two separate workstreams -- one focusing on governance aspects of CCP oversight, and the other focusing on transparency. Our meetings to date have focused more on governance and will also turn to transparency in the latter half of the year.

We are also reviewing the current rules, CFTC rules, for application of changes to CCP rules, namely the 40.5, 40.6, and 40.10 processes. We are reviewing that, how CCPs currently apply them, and whether or not there are any recommendations that can be made for improvements there. And thirdly, we continue to review potential enhancements to the framework that CCPs use to obtain and address input from market participants on relevant risk issues.

The fourth workstream is on stress testing and liquidity frameworks. As CCPs, we have used and reviewed a number of reference materials in this workstream, including best practices for stress testing and best practices on the topic from CCP-12. Also, reviewing CFTC's supervisory stress tests and other papers, including stress tests of networks, the case of central counterparties published in December 2019, and Jerome Powell's Central Clearing and Liquidity.

So, topics under discussion here are defining clear goals as needed for stress tests; recognizing the distinction and overlap or alignment between supervisory stress tests and those done by CCPs; scenario design for stress tests; and liquidity stress tests.

And, the final workstream is on CCP capital and skin in the game. The workstream is reviewing CCP capital regulations, issues previously considered by this body, recent developments in Europe under EMIR 2.2, quantitative disclosures regarding current levels of CCP skin in the game, and general discussion of CCP capital regulation. And, with that, the subcommittee is working to define commonly-used terms. For example, CCP capital versus skin in the game, as well as the applicability of position paper focused on more narrowly-defined topics.

The subcommittee would welcome any questions or feedback that you have on the discussed areas of focus at any time, and we'll continue work of the subcommittee.

With that, I'll turn it back over to the moderator.

CHAIRPERSON ZAKIR: Thank you, Alicia and Lee. We'll now open the floor to questions and comments from the membership on the report.

I guess just to clarify just in the meanwhile, it sounds like really the topics, you know, obviously that are before this subcommittee are not only critical, but also complex.

And in terms of your objective with respect to the final work product with respect to each of the workstreams, maybe could you just clarify, is the goal there to, for certain workstreams, potentially come up with recommendations, whereas for others perhaps more of a summary of sort of relevant positions across the different types of members? Maybe if you could just clarify those -- that point, as well, that would be helpful.

MR. BETSILL: Sure. This is Lee. Thank you for the question.

I think our purpose is to review relevant best practices on the topics that we've outlined, decide whether there are areas which could be improved upon in making CCPs safer, and where there is consensus in the subcommittee, to make recommendations as appropriate.

Where I think there are potentially topics under discussion where there is not broad consensus in the subcommittee, and where we do not see a need or cannot come to a consensus on making recommendations, per se, I think our goal is to be able to set out the positions on the topics just to provide clarity to the broader Marker Risk Advisory Committee.

CHAIRPERSON ZAKIR: Okay. Great. Thank you. That's very helpful.

Okay. Well, if there are no questions or comments on the CCP Risk and Governance Subcommittee report, let's turn to our second panel of the day titled COVID-19's Impact on Margin, Processing, and Operational Health in Cleared Derivatives.

Our speakers are Richard Haynes, Supervisory Risk Analyst, Risk Surveillance Branch in the Division of Clearing and Risk at the CFTC. Richard, are you on the line?

MR. HAYNES: I am on the line. Can you hear me?

CHAIRPERSON ZAKIR: Yes. Thank you. We also have Sayee Srinivasan, Deputy Director, Risk Surveillance Branch in the Division of Clearing and Risk at the CFTC. Sayee, are you on the line?

MR. SRINIVASAN: Yes, I'm here. Thank you.

CHAIRPERSON ZAKIR: Thank you. We'll have

Alicia Crighton, Subcommittee Co-Chairman, Global Co-Head of Futures, and Head of OTC and Prime Clearing Business, Goldman Sachs, representing the Futures Industry Association, as well as Lee Betsill, Subcommittee Co-Chairman, Managing Director and Chief Risk Officer, CME Group.

After the presentations, we will move into the moderated discussion. At that time, we will take questions and comments from the members on the presentation.

Richard, I will turn it over to you.

MR. HAYNES: Thank you very much. I'd like to begin by thanking Commissioner Behnam, Alicia Lewis, and Nadia Zakir for giving me the chance to --

In my presentation, I will provide a brief background on the CFTC's Clearing Risk Surveillance Branch, where I've worked, followed by a few high-level observations of clearing trends in the first half of this year.

This period experienced extreme volatility and market uncertainty, especially during the month of March, and led to elevated liquidity demands on clearing members and their clients. Fortunately, the system has been designed to handle these market fluctuations, and clearinghouses weathered the storm even with unprecedented operational changes, like broad work-from-home requirements. The next slide.

I start the deck with the usual disclaimer. None of the material in this deck represents the official views of the agency, the Commission, or CFTC Staff.

With that noted, on the next slide, I have summarized a few of the responsibilities of the surveillance branch. Among the primary analytical parts of our clearing division, we are tasked with daily risk monitoring of clearinghouses, as well as their members, as well as longer-term analysis by analyzing the adequacy and appropriateness of CCP margin models.

During periods like earlier this year, we are in regular contact with market participants to understand the risk management responses and the preparedness for extreme market volatility. To guide us in this monitoring, we collect detailed data on all cleared derivatives' positions in our jurisdiction, as well as the margin held against these positions. We regularly stress test these positions to ensure there is adequate market coverage and access to better understand how models responded to historical periods of volatility.

We have also now published three supervisory stress tests that analyze not just the dynamics of individual CCPs, but also the liquidity demands of derivative CCPs as whole under stressed conditions.

With that brief overview of the branch, I will move to a few high-level observations of the last six months.

The following slide summarizes the initial margin collected in 2020 by the CCPs under our jurisdiction, broken down by asset class. Generally, futures and options on futures, abbreviated as F&O in the chart, and rate swaps are the largest product classes, with both representing roughly 45 percent of total collected IM as of the end of June.

Margin levels in aggregate increased from around $440 billion at the start of the year to a high of just over $600 billion at the end of the first quarter. This translates to a roughly 40 percent increase in margin during that quarter, and a slow decrease in levels as volatility fell in more recent months. And you can see this in the blue line within the chart.

On this chart, we can see the derivatives markets we oversee responded quickly to changes in market conditions, especially during the middle of March, and margin levels have remained high since then -- continued protection in case of a return of market uncertainty.

The next slide adds variation margin payments to the analysis. Here, the red bars represent the daily VM calls by derivatives CCPs, while the blue bars represent the incremental IM fall on a given day. Both of these measures hit their highest levels in the middle of March, with daily VM calls peaking at over $50 billion. For historical context, VM calls on the day of the Brexit vote, a historically high day, were roughly $30 billion. Eleven days in March exceeded that level.

Though incremental IM demand results are historically high during March, I do want to compress the two margins --. There has been discussion recently about potential stresses put on financial markets due to the liquidity demand to buy-in costs. As you can see from this chart, though IM calls did increase in March, on an aggregate basis, these demands were far outweighed by those due just to the day-to-day change in portfolio volume.

In addition, these large IM demands remained isolated for a few days. Once IM levels decreased to levels appropriate to the increased volatility, few large additional calls were necessary.

I should note, as a caveat, that VM demands do represent flows from one to another part of the market -- liquidity that can be used by payment receipts. This is not the case for collateral like IM. So, we continue to analyze both IM, as well as VM trends in 2020 to better understand the effects of liquidity demands on market health.

The chart on the next slide focuses strictly on VM demands, the lion's share of the payments made against cleared derivatives positions. I earlier noted that margin demands are firmly correlated with volatility rise. We can see here in this chart the strong relationship between VM levels and one commonly used volatility measure, the VIX.

I do want to emphasize, however, that derivatives products should not be considered one homogenous bucket of assets. Though we do see a strong relationship between the two measures, there are exceptions. For instance, the two measures do not peak on the same day. This is in part due to the fact that the VIX equity volatility may not always move in tandem with fixed income volatility or currency volatility or commodity volatility. Divergences like this occurred in the first quarter, with spikes in one not always coinciding with spikes in another. In addition, there are often differences between implied, which is what fixed measures is, and realized volatility levels.

These facts highlight that our risk surveillance often needs to consider each product class independently with its own unique features.

Continuing the theme of heterogeneity, I will finish with a breakdown not by asset class, but by participant type on the following slide. On this last slide, I have shown the first-quarter change in initial margin requirements for a few of the large customer participant processes. In an earlier slide, I noted that IM requirements rose roughly 40 percent during the quarter on an aggregate basis. You can see here at this more granular level that there is a much broader spectrum of changes.

For the slower money entities, like insurance companies and pensions funds, IM growth was very similar to the aggregate. In contrast, hedge funds, often considered more fast-money accounts, actually saw a slight decrease in high-end requirements on quarter. As volatility rose, hedge funds, as a group, reduced positions such that they retained a roughly flat risk profile.

Like the previous slide, this demonstrates that there can be no one-size-fits-all monetary program. For some, we need to understand how participants are affected by higher margin demands on a roughly fixed portfolio. For others, we need to understand how they are likely to adjust, and sometimes rapidly adjust, portfolios to changing market conditions.

It is addressing challenges like these where we have worked and continue to work to build analytical tools to make sure the CFTC is, as a former chairman described, a 21st Century regulator for 21st Century markets.

I thank you again for the chance to present today, and I will now symbolically pass the microphone over to the next presenter.

CHAIRPERSON ZAKIR: Sayee Srinivasan?

MR. SRINIVASAN: No. Richard was already -- so they're waiting for Lee Betsill or Alicia to --.

CHAIRPERSON ZAKIR: Okay. Great. Thank you, Richard. Alicia, you may begin.

MS. CRIGHTON: Thanks very much, Nadia.

As stated overall via the participants, the markets in the clearing mechanism functioned particularly well, especially during the early parts of the COVID crisis. The extremes that we witnessed during the height of the pandemic, as we've discussed many times throughout this meeting today, have led to many records, whether it was exchange volume, cleared volume, size and frequency of margin increases in an abbreviated window, CFTC sect funds, trade counts.

By pretty much any measurable metric, we've broken most records that we've tracked, all in an environment where most participants in the industry managed a transition to an almost 100 percent work-from-home environment.

We believe that as the analysis of the impact continues, there will be some interesting lessons learned that will influence the work of many in the industry, including both the FIA, as well as many MRAC subcommittees.

FIA conducted an industry survey in June, and while the results show the industry performed well during recent market volatility, there were several areas that should be studied and recommendations reviewed to continue to strengthen the resilience of the clearing system. Areas of focus included unpredictable changes in margin, clearing operations, and trade settlements during stressed market conditions. If we can move to the next slide. Thanks.

To provide the appropriate backdrop to some of the comments, we'll start with a look at market volume. This table shows the trading volume for all exchange-traded derivatives in the U.S., including options on stock and stock indices.

The total number of contracts traded in March was significantly larger than any previous month in the history of the industry. The scale required to process this type of volume on a daily basis is significant. And on the back of that, FIA is working with members on a global initiative to use the lessons learned from this period of high volume and volatility to identify ways to improve operational efficiency within the cleared derivatives industry.

To reference a few data points from our survey, 40 percent of survey respondents cited issues of clearing operations in systems; 30 percent referenced a high number of trade breaks as challenges that were exposed during the COVID-19 crisis. And just to make a note on the survey, for challenges noted, respondents to the survey were able to pick more than one criteria.

Just go back to the slides here. One of the initial areas of focus that FIA is looking at is in regards to how CCPs manage their end-of-day clearing cutoff times on T-0 during periods of high volume and how firms and CCPs can work together to address some of the specific challenges that were identified. One in particular to note, due to the volume, many FCMs requested clearing window extensions, and many CCPs were accommodating of those requests throughout the period of volatility.

FIA plans to focus on how communication and transparency around this process can be improved, and we think the FCM community would benefit from some concise guidelines on how to request clearing window extensions.

Separately, the FIA understands that the extension of clearing windows can be disruptive to the end-of-day processes at some CCPs and some FCMs, as well. We hope to find ways that these challenges can be overcome with improvements in technology and other operational workflows. We are also considering whether recommendations should be made for longer end-of-day clearing cutoff times if they are deemed to be necessary. We can move to the next slide, please.

This data depicts U.S. FCM customer margins collected from 2003 through April of 2020. This data comes from the CFTC's customer segregated account data. Although we're just representing data from U.S FCMs, we do feel like it's a good proxy for the global industry.

U.S. FCMs collected an additional $136 billion in collateral from their customers during the month of March. That represents more margin per cleared customer than ever in the history of the CFTC, and certainly more than the peak of the financial crisis in 2008.

So, here's how that breaks down. For total customer funds in futures accounts from March 2020, customer collateral was $318 billion, up from $214 billion from February of 2020, so an increase of 49 percent in a single month.

Total customer funds in swaps accounts were $153 billion in March, up $32 billion from the $121 billion in February, an increase of 26 percent over the prior month. Certainly record-breaking increase for swaps markets, but not to the same degree as futures. Note that the client-segregated fund continues to remain high today.

We also thought it was interesting to draw attention to the number of FCMs represented on this chart by the orange line. While seg funds have grown approximately six-fold since 2002, the number of FCMs is roughly half. We can move to the next slide, please. Thanks.

So, with the next few slides, we're viewing the impact of the crisis on margin, in particular initial margin, which we're focusing on as the first line of defense rather than mark to market flows or VM.

To reference again the FIA survey, 76 percent of respondents identified margin volatility and unpredictability as a challenge needing review post-crisis. This chart shows the percentage changes in margin requirements for some widely-used global futures contracts. What is striking about the data from March is both the size and the frequency of the increase. The sizes of the increase create pro-cyclicality and liquidity concerns, and the frequency can create both liquidity concerns and potential operational stresses. We can move to the next slide, please.

We wanted to take a closer look at the IM increases on a few global equity index futures and compare those increases. We start with the S&P 500 Emini futures contract. The IM requirement began the year at 6,300 per contract. By March 2nd, it had risen to 6,600. Over the next three weeks, IM was increased six times due to the extreme price movement. By March 23rd, IM had been raised $12,000 per contract, nearly double the amount versus the beginning of the year.

We look across to Eurostoxx 50. As we saw with the minis, IM was very stable during the first two months of the year. From Jan. through -- Jan. 1st to March 10, IM stayed within a range of 23 to 2,700 euros per contract, but between March 10th and April 15th, IMs more than doubled.

Then looking at the last example for the Nikkei 225, IM was raised from 720,000 yen at the beginning of March to 1.62 million yen by the end of the month, which works out to be an increase of roughly

125 percent in just a short few-week period. The trend then reversed direction, and IM was reduced three times in April, and then three more times in May.

We think the key risk as demonstrated here is that margins move quickly from low levels to peak levels in a very short period of time, potentially exacerbating market stresses. Next slide, please. Thanks.

Based on quarterly disclosures by CCPs, we've compiled some statistics on margin breaches. The number of margin breaches more than doubled between Q4 and Q1. The average size of margin breaches increased four-fold over the same period. And this is aggregated data at a contract level.

While we can and do expect margin breaches, these stats clearly highlight the challenges both FCMs and TCPs face during this time and the strain that can result from the cycle of margin breaches followed by margin increases in rapid succession.

To wrap it up, FIAs focus on a few key themes based on the lessons learned from this data. Improvements to the guidelines and transparency around some operational workflows, advocacy work based on the feedback regarding the issues raised, and the work -- that work will focus on limiting impact of reactivity to volatility changes, which may exacerbate liquidity stress. For example, calibration on collateral requirements, the margin levels are neither chasing volatility down nor spiking as quickly as volatility.

Focused on the work around CCPs adopting appropriate and conservative anti-procyclicality measures, taking into account specific characteristics of cleared contracts, and at least 10 years of history of patterns and changes in volatility.

The potential use of margin force calibrated to include a history of market volatility, and those measures surrounding margin force and the anti-procyclical approach chosen by CCP should be transparent to the market.

Thanks very much for the opportunity to provide some overview comments regarding these last few months.

CHAIRPERSON ZAKIR: Thank you, Alicia. Lee Betsill, I'll turn it over to you.

MR. BETSILL: Hi. Thank you. Thank you again for the opportunity. I have put together some slides focusing on some of the same themes that we have already covered both in this report and on the previous subcommittee reports. So, I'll try not to be too repetitive. However, I did want to focus on a few of, as I said, the key areas and observations during the hugely volatile period prompted by the COVID crisis.

The data that I have used is mainly drawn from a paper, which was produced by CCP12 earlier this month. That paper is called CCPs Again Demonstrate Strong Resilience in Times of Crisis. You can find that paper on CCP12.org website, and I encourage you to have a look through. But, I have tried to draw a few highlights from the paper, which I'd like to cover now. So, Alicia, if you can move to the first slide.

We talked about it quite a lot already, but just to put in context and to remind the committee, the events that we saw, especially during late February and March into April of this year, really is and has been hugely volatile. The stress that we've seen, the market gyrations that we've seen, are events that are nearly unprecedented. You can see in the chart on this slide, as demonstrated by the Cboe's VIX product, that the volatility, as measured by VIX, exceeded that of 2008 and spiked in very, very short order to over 80.

So, this has been incredibly stressful to the market, and the conclusion overall that one can draw is that CCPs have, during this time of stress, operated with a very high level of resilience and have done what they are meant to be and meant to do. That is, to provide a stability and assurety to the market in times of stress that market participants and those with exposures to the volatile markets have a place to manage that risk.

And, you know, I can just remind you that it was because of the 2008 global financial crisis that the G20 in Pittsburgh in 2009 made a commitment to move OTC markets into a cleared environment because of the stability and resilience that CCPs at that point had demonstrated for exchange-traded derivatives during that crisis. Let me please move to the next slide.

Just slightly more context on the market volatility. It shows a few representative graphs just to give a pictorial or a graphic picture of how extreme the volatility has been. In the lower, left graph, we're seeing and we have seen price moves that we haven't witnessed since the crash of 1987 and, in fact, approached the volatility seen during 1929.

Likewise, in the crude and refined markets, market dynamics led to the highest price volatility we've seen since the Gulf War in '91. That was led off with the Saudi Aramco strike back in February, if you recall that. And then the dynamics of supply and demand led to huge price swings in March and, in fact, led to negative prices being traded in April.

Likewise, the U.S. Treasury markets, you can see from the graph just how much the markets moved on a daily basis with high stress, and in fact, seeing the entire curve trade below one percent for the first time ever. So, just in context, this is extreme, extreme stress that we have seen during this period. Next slide, please.

We talked a lot about volumes already, so I won't focus too much here, other than to say these have been record volumes of cleared derivatives across almost all asset classes across the globe. I won't focus too much on that as we've already covered that, so I'll move to the next slide.

Despite the huge increase in demand for capacity of exchange-traded and cleared derivatives, CCPs held up well. I think, as Alicia pointed out, these huge volumes did require in some instances for there to be more processing time for post-trade activities, and our CCPs were responsive to that.

But, that being said, with some maybe later than normal times, the core clearing systems at major CCPs held up extremely well during this period. And you can see in the graph on the slide what's being reported through the public quantitative disclosures. This is from the Q1 report, until the end of March. You can see for major CCPs that the core clearing system availability was in line with what we witnessed in Q4 of 2009 and approaching 100 percent availability across all core clearing systems.

And, of course, like the entire industry, CCPs across the globe were almost all in work-from-home environments using tools to access their clearing systems and their colleagues in that work-from-home environment. I think I'll move on to the next slide.

So, we have talked a bit about initial margin responses at CCPs already. I think it's fair to say that, given the unprecedented stress and spike in volatilities that we saw during the COVID crisis, initial margin models at CCPs did what they were supposed to do.

And, as a way of reminder, initial margin at CCPs is not set out to cover the most extreme, but plausible scenarios. That's why CCPs have default resources, and in most cases, mutualized default resources to cover potential losses in the most stressed time. Margin is an important part of the default resources, and for most CCPs, margins are set to cover expected losses above 99 percent of cases, but not in the most extreme cases. So, when you do have a spike in volatility like we witnessed, you would expect margin models to respond and increase in line with the increase in volatility.

Most CCPs operate margin models which try to recognize the importance of having anti-procyclical measures in their models, so for most CCPs, you will have seen that the increases, albeit large increases, were spread out. They were measured. They were given with notice, and the increase took place over several weeks during March.

Likewise, on the way down, as volatility drops, initial margin models seem to slow or dampen down in case there is a sudden spike again, and we're still in that period for the most part.

So, initial margin did increase. We've seen some statistics already. Again, I've taken data from the public quantitative disclosures for a number of major global CCPs reflecting the increase in margin held at CCPs over the quarter. I compared that to Q4 of 2019. There were some large increases, but as I said, those were, for the most part, done over an incremental basis.

And the consequence of the response to the spike in volatility was appropriate. You can see from the lower, left-hand chart the results of back testing of initial margin to show the achieved covered level at the portfolio level. Of course, at a contract level, there will be initial margin breaches. If a CCP sets its target coverage to 99 percent, you can expect there to be margin breaches at the contract level, but it's much rarer to have margin breaches at the portfolio or account level. And that's what's reported in the PQD's 6.5.3, reflecting the year, the margin coverage, which you can see did slip at most CCPs somewhat, but still well above a 99 percent, and in many cases, 99.9 percent, target at the portfolio level, so demonstrating that the initial margin increases were appropriate. Next slide, please, Alicia.

And just to make the point, I also have some data points around a variation margin, so you can see again broken down by -- for a few major CCPs. You can see the increase in variation margin. Again, variation margin in a pass-through, so this is a resetting of the risk in the portfolio by collecting losses from portfolios, which are deteriorating and paying out to those who are gaining due to market fluctuations.

And just to reiterate the point that Richard made earlier in his slides, a couple of examples of contract level variation margin flows in relation to initial margin increases, the top chart being the 10-year Treasury note future where you can see there were very large dollar amounts of variation margin flowing. There were also a number of increases in initial margin. Those are the black lines on the bar chart, the upper one, showing that there were initial margin increases, and then several of them over several weeks, but small in comparison to the variation margin required due to price movements. And, similarly, a chart over S&P 500 index contracts where the dark blue bars are the variation margin amount, and the light blue bars are initial margin increases.

I think with that, I'll stop there and look forward to discussion. Thank you again very much for the opportunity.

CHAIRPERSON ZAKIA: Thank you, Lee.

At this time, we'll move into the moderated portion of today's discussion on COVID-19s impact on margin processing and operational health and cleared derivatives. And, I am going to turn it over to Robert Steigerwald, Senior Policy Advisor, Financial Markets at the Federal Reserve Bank of Chicago.

MR. STEIGERWALD: Thank you very much, Nadia. And thank you to the presenters, Richard, Alicia and Lee, for a very stimulating set of presentations about recent events.

I will moderate a brief discussion given time, but I hope to involve members of the committee as broadly as possible. If members of the committee would like to ask questions, remember earlier in the program to follow the instructions on how to post your questions.

To kick things off, I would like to focus on the issue of operational resilience in the cleared markets. This issue has been touched upon several times during the discussion today. I wondered whether any of the presenters in this panel would like to compare the operational experience that they endured, I supposed is one way to think about it, during the recent crisis and compare that to the observations that were made earlier in the discussion about how working from home may have had an effect on responses to RFQs. So, basically, a cross-market comparison of how working from home may have effected operational processing.

Would anyone like to discuss that?

(Pause.)

MR. STEIGERWALD: That question seems to have no takers. That's alright with me.

Are there members of the committee that would like to ask questions of the presenters? Please let us know through the chat function whether you'd like to be recognized.

MR. BETSILL: Is it okay if I answer your first question?

MR. STEIGERWALD: Yeah. Who is this? Is this Lee?

MR. BETSILL: Yeah, this is Lee. Sorry. I was trying to give some others an opportunity to jump in.

I think the operational resilience is a really important factor. Within the CCP community, as well as our FCM clearing members and other participants, were almost in their entirety having to work from home. I think that as an industry, we have benefitted from --

(Audio malfunction.)

MR. BETSILL: Sorry. I heard interference there. I think that over especially the last five or more years, we have all worked hard to develop tools which enable a working-from-home environment. In addition, we've gone to kind of global support for our markets. I know in the case of CME, we operate a follow-the-sun risk management regime, so we have staff, who are working in Asia, in Europe, in the Americas, to support and monitor our markets, and that's necessitated developing tools to be able to carry out those tasks. And a very important part of our business continuity planning is the ability to be able to work from home, so we do that as part of business as usual.

And in response to the COVID crisis, we moved to a near 100 percent working from home, which did present some challenges to the capacity of, you know, our networks. But, my view is that it has worked extremely well, at least in our default management processes. We did during this period have to go through a liquidation event of a clearing member, and that default management process, our liquidation and auction processes, were all -- all had to be done using tools that we've developed to be able to do so remotely and using web-based tools. Even that, we were able to carry out.

So, you know, with that, I think the industry has done a very good job of adapting, and as such, we were able to cope with this sudden crisis.

Thank you.

MR. STEIGERWALD: Thank you, Lee. Would anyone else like to comment on their experience?

(No response.)

MR. STEIGERWALD: I'm not hearing any, and I'm cognizant that time is growing short for this discussion. Nadia, if we have no questions from the committee members, I would propose to turn this back to you so that the committee meeting can be concluded.

CHAIRPERSON ZAKIR: Thank you, Robert.

And, once again, thank you to all of the MRAC members for today's discussions. This concludes today's agenda. Thanks again to our presenters for joining us today, and many thanks to the subcommittees and their chairs for their hard work, and we look forward to hearing your final reports at the end of the year.

I'll turn it over to Alicia Lewis.

MS. LEWIS: Thank you, Nadia. Before we go to closing remarks, I'd like to revisit the -- I guess the three members that were not able to get on the record just to make sure that they are on the call. Can you please unmute yourself and indicate your presence once I call your name?

Dick Berner?

MR. BERNER: I'm here, Alicia.

MS. LEWIS: Excellent. Derek Kleinbauer?

MR. BERNER: And have been all the time.

MR. KLEINBAUER: Yes, same here. It's Derek Kleinbauer.

MS. LEWIS: Thank you. And Marcus Stanley? Marcus Stanley?

VOICE: Alicia, he asked a question earlier, so --

MS. LEWIS: Yes.

VOICE: -- he was clearly on part of the call.

MS. LEWIS: Janine Tramontana?

MS. TRAMONTANA: Yes, Alicia, I'm here.

MS. LEWIS: Excellent. Now that I have you all on the record, thank you again.

So, now it's time for closing remarks. We'll start with Commissioner Berkovitz, then go to Commissioner Stump, then Commissioner Quintenz, Chairman Tarbert, and then Commissioner Behnam.

Commissioner Berkovitz?

COMMISSIONER BERKOVITZ: Thank you, Alicia, and thanks to all the market participants. The presentations today were really exceptionally informative. I appreciate the data-driven analyses and the extent of data analysis that went into the presentations.

I'm heartened to really see in the data the robustness of the markets in the face of these unprecedented challenges. This is really a testament to the strength of the Dodd-Frank reforms and the market participants' commitment to these reforms in the way of trading.

And, on trading, also to see the market

moving towards SEF trading and more transparency even where not mandated, on the 10th anniversary of Dodd-Frank, that's a great birthday present to hear this news.

So, I thank all the market participants and Alicia and Nadia and Commissioner Behnam. This really was an excellent presentation. Thank you.

MS. LEWIS: Thank you Commissioner Berkovitz. Commissioner Stump?

COMMISSIONER STUMP: Thank you, Alicia. I just want to echo what Commissioner Berkovitz has already said. I thought the presentations were really well done, very informative and timely. And I also want to commend all of those who have continued to work on the legacy priorities of the MRAC that were ongoing long before the current pandemic overtook events. It's important that we not allow those things to take a back seat; that work is critically important. I appreciate all of the effort that has gone into the meeting, but also the work leading up to the meeting. So, thanks to everyone who was involved.

MS. LEWIS: Thank you, Commissioner Stump.

Commissioner Quintenz?

COMMISSIONER QUINTENZ: Thank you, Alicia. Thank you to you for your hard work putting today together. Thanks, of course, to Commissioner Behnam, Nadia, and all the subcommittee chairs.

I agree with both my colleagues. The presentations were excellent. Very informative, very insightful, and seems as though we have, you know, the key people putting those together and giving us their viewpoints, which makes these advisory committees so special for our agency. So, thank you for a very productive day.

MS. LEWIS: Thank you, Commissioner Quintenz. Chairman Tarbert?

CHAIRMAN TARBERT: Thank you, Alicia, as well, for your hard work in putting this together. Thank you, Nadia, for chairing it. And, of course, thank you to Commissioner Behnam for your leadership as the sponsor of the committee.

Like my colleagues said, this has been a really terrific session filled with lots of perspectives from all of you, from what you've seen during the last few months since the last MRAC meeting, and particularly during the COVID crisis. The stories that you've told, the facts that you've put forth, have all sort of helped inform us as we think about our ongoing response to the crisis and also sort of larger policy issues in the future. And then, as well as the longer term projects that all of you reported on, it was really helpful to understand where you are on those. All of them are very important, and I encourage you to consider moving them forward.

So, once again, thank you so very much for your time. It was really a productive session. Thank you.

MS. LEWIS: Thank you, Chairman Tarbert. Commissioner Behnam?

COMMISSIONER BEHNAM: Thanks, Alicia. I'm going to take a few more minutes and identify the individuals who participated and did all the hard work as we did in the morning. But, it's worth taking the time because the work has been tremendous. Today has been fantastic.

Obviously, none of this could have happened without the leadership of, of course, Alicia Lewis and Nadia Zakir, as the chair and the DFO. Tom Wipf, Bob Litterman, Lisa Shemie, Stephen Berger, Lee Betsill, Alicia Crighton. Thanks for all of your work as subcommittee chairs.

A tremendous amount of sort of lifting going on given what we're dealing with with COVID. As Commissioner Stump said, your commitment to these issues, regardless of what we're dealing with both at home and in the workplace, is tremendously valuable and important to the long-term success of our markets.

I do want to thank the chairmen and Commissioners Stump, Berkovitz, and Quintenz for participating today again. We have a busy week ahead of us starting tomorrow and Thursday, so their commitment and willingness to take time this morning and this afternoon is hugely beneficial to all of us to have them hearing -- listening in, and of course as we deliberate policy for the agency going forward.

Just a few points about today's discussion, you know, starting with the SOFR, the benchmark reform conversation. I'm reiterating some of the things that

Tom Wipf said. The CFTC remains committed to the transition process.

Thanks to the entire subcommittee for all of the work that they've been doing. Truly critical to the entire process of transitioning. And, as I've said from day one, which is now several years ago, I'm trying my best to ensure that the CFTC sort of remains a supplement almost, in part, but an additive workstream to the larger effort being done by the Fed domestically, especially New York and overseas bodies, including the FCA and Bank of England.

So, we'll continue to work, I think, as requests come in, as things change, as we work towards the end of '21. And, as I said, be nimble and flexible where appropriate to provide relief when it's appropriate, but certainly doing what we can as quickly as we can to ensure that the transition process continues.

Thanks to Bob Litterman and the climate subcommittee. As Bob mentioned, we were hoping to have a report I think sometime in the early summer, but obviously with all things and all the subcommittees, the COVID pandemic has slowed things down, understandably. I know they're continuing to work very hard and looking forward to the work product that they're hopefully able to deliver in the next couple months.

But, I really appreciated Bob's parallels and the question I think Nadia asked about COVID and climate. And I think there are things that we should sort of recognize and identify and piece together as we're dealing with one pandemic, one health crisis, and how we have to manage and think about the climate crisis that is starting -- has been going on for a number of years. But, the data and the science, which we so much rely on within the context of our work, is telling us that we need to be better prepared.

And, then, finally, I'm going to sort of -- the market structure and the CCP Risk and Governance discussions were fantastic. I'm going to start with Chris Barnes. Thanks to Clarus for participating, but love the notion that transparency works.

And Commissioner Berkovitz, you know, touched on this a little bit. But, 10 years past Dodd-Frank, you know, certainly didn't get everything perfect, but there's a lot -- I'm thinking what Chris said about pre- and post-trade transparency reporting, central clearing, I mean, these are hallmarks of, of course, Title VII, but also the larger Dodd-Frank goals.

I think as people are reflecting on what was accomplished, what works, what doesn't work, I think those are core reforms that I think -- that I mentioned were sort of shock absorbers for the March-April period, but certainly things that we should all be mindful of and proud of as we sort of look to the future and look to future risks.

That said, I think it was pretty clear that not, you know, as much as, you know, the markets worked and that I think we are largely pleased with what outcomes we have from the March-April period, there certainly are a number of issues, and I think those were raised today. Anything from execution, which I know Eileen mentioned, to Alicia's excellent deck from FIA. Customer margin, the number of FCMs and sort of that relationship. And, of course, customer money -- excuse me -- and then obviously the IMs' demands that we saw in the March-April period.

So, a lot of things that I think we can elevate and shine on as positives about the past few months, but certainly more work to be done to sort of fix either some minor issues or issues that didn't result in breakdowns or larger systemic problems, but certainly things that we have to be cognizant about, I think as a group.

And I think as for my perspective, we'll continue to advocate for these issues, speaking about them, using the MRAC to sort of discuss them in a collaborative way. And then, if it's appropriate, you know, raise them to the Commission for more in-depth policy considerations.

So, a lot of work to be done. I think a lot to be proud of, but certainly many good things to glean from the past few months, but also many lessons learned, which I think demand and require more conversations and more work from all of us to ensure, again, more transparency for markets. I think we should be happy with what we accomplished, but that shouldn't be a reason to rest on our laurels here. We should move and sort of strive for, you know, perfection even though it's, you know, largely unattainable. We should short of point our north star there and try to get there as best as possible.

So, I look forward to helping and, you know, be a part of that conversation, leading it, and if I can, sort of learning from all of you to the best extent possible.

And I do want to mention one more thing before we wrap up. You know, I mentioned some of the -- made some comments in my opening statement about some of the issues going on in our country with respect to, you know, sort of unrest and racial inequality. I've asked Alicia Lewis and Nadia, as the DFO and chair, to sort of put their heads together over the next couple of months and start thinking about a panel, just a sort of informal panel discussion at our next meeting, which will likely be in December of this year, to talk about diversity and inclusion in our markets, in our industry at large.

It's something I care about. I've talked to my fellow Commissioners and I -- you know, I think there's a number -- and the chairmen, as well. There's a number of steps that obviously have to sort of be accomplished before we get to the panel discussion, but I think given the conversations I've had with my colleagues and with Alicia and Nadia, I think it's the smart thing to do. I think it's the right thing to do. And I think the Commission and my colleagues, as well, support it and having this -- you know, planting the seed in terms of figuring out if we can have an in-depth, positive, forward-looking conversation about diversity in our industry.

And, you know, I couldn't be more pleased with Nadia and Alicia. Alicia, obviously, fulfills many responsibilities at the CFTC not only as an attorney, but also as the DFO of the MRAC. She's also the leading voice on diversity issues at the CFTC, so I can't imagine someone better to sort of help spearhead some brainstorming about invitations to individuals in our industry. And I would welcome any of you if you are individuals or institutions who have been thinking about this. I know many of your institutions do. If you want to be a part of that conversation, I'm sure

Nadia and Alicia would welcome that.

So, we can look -- and, of course, hopefully some deliverables from our subcommittees and just more work in the next few months. Certainly, I hope everyone remains safe, has some time to break in the next few weeks in August, before Labor Day, with their families. Obviously, challenging times, but I'm confident we'll get through it.

And, as always, I am here to discuss things, to talk about things. You know, I said this in March to a few of the subcommittees, if not everyone on the entire committee. You know, work life and home life is priority. This is a huge benefit and something that I care about deeply. But, given the challenges we're dealing with, certainly prioritize what's most important in life. But, if there's anything I can do, please don't hesitate to reach out.

So, thanks again to everyone. Stay safe, and I appreciate all of the work.

Alicia, I hand it back over to you.

MS. LEWIS: Thank you, Commission Behnam. In addition to everyone that's been thanked so far, I wanted to also extend thank-yous to our AV and Logistics team. You know, carrying out these virtual meetings is not an easy task, but they help us do it seamlessly. So, thank you to our AV and Logistics team, and thank everyone for attending this meeting. The meeting is now adjourned.

(Whereupon, at 1:32 p.m., the meeting was adjourned.)