UNITED STATES OF AMERICA

COMMODITY FUTURES TRADING COMMISSION

MARKET RISK ADVISORY COMMITTEE MEETING

Washington, D.C.

Thursday, July 12, 2018

PARTICIPANTS:

Commissioners:

COMMISSIONER ROSTIN BEHNAM (CFTC and MRAC Sponsor)

CHAIRMAN J. CHRISTOPHER GIANCARLO (CFTC)

COMMISSIONER BRIAN D. QUINTENZ (CFTC)

Key Speakers:

DAVID BOWMAN
Advisor
Federal Reserve Board of Governors

WILLIAM DE LEON
Managing Director and Global Head of Portfolio Risk
PIMCO

ROBERT MANGRELLI
Director, Global Real Estate Hedging and Capital Markets Team
Chatham Financial

MAURICIO MELARA
Associate Director, Office of International Affairs
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AGHA MIRZA
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P R O C E E D I N G S

(10:05 a.m.)

MS. LEWIS: Good morning, everyone. My name is Alicia Lewis, and I'm the Designated Federal Officer for the Market Risk Advisory Committee.

As the Committee's Designated Federal Officer and as Acting Chair of this meeting, it is my pleasure to call the meeting to order.

Before we begin this morning's discussion, I would like to turn to Commissioner Rostin Behnam, the MRAC sponsor for the welcome and opening remarks.

Chairman Giancarlo and Commissioner Quintenz will then give their opening remarks.

COMMISSIONER BEHNAM: Thanks, Alicia. Good morning and welcome to the CFTC Market Risk Advisory Committee's second meeting of 2018. Since our last meeting in January, I renewed the Committee's Charter for two years and reconstituted the membership.

I'm pleased to welcome each and every

one of our new members and also our existing members that are coming back to us.

The Committee members represent a balanced and diverse cross-section of interested derivatives market participants, including dealers, exchanges, clearinghouses, public interest groups, academics and swap execution facilities.

In selecting among the candidates, I'm committed to insuring that each member has demonstrable experience in the areas I envision addressing in the next few years and a point of view from which to engage.

I believe the membership demonstrates these qualities and will bring depth and breadth to the public forum designed to tackle a full spectrum of critical market risk issues.

Before we move into the substance of today's meeting, I want to thank Chairman Giancarlo and Commissioner Quintenz for being here today and for their contribution to today's discussion.

I also want to thank today's moderator, Tom Wipf, Vice Chairman of Institutional Securities at Morgan-Stanley. Tom has more than forty years of experience as an industry leader and has served in multiple capacities in New York, London, and Tokyo. Tom has willingly shared his time and expertise here in Washington for many years.

Currently, he serves as a member of the Alternative Reference Rates Committee sponsored by the Federal Reserve, which will be particularly relevant to today's conversation.

I want to thank each of the panelists for their willingness to travel to Washington in the middle of the summer and contribute to this important conversation. We have gathered a distinguished group of speakers, and their readiness to participate is greatly appreciated and critical to our discussion.

I want to thank Alicia Lewis, the Committee's Designated Federal Officer, as Alicia demonstrated in January at our last MRAC meeting, her discipline, intelligence and her hard work are the reasons these meetings go so smoothly.

This Advisory Committee is tasked with critical responsibilities that can have profound effects on the health, transparency, and strength of our financial markets. I believe it's important that all of us, as a unit, embrace this responsibility and use the opportunity to provide the Commission with thoughtful recommendations directed at core principles, including identifying and reducing systemic risk, market transparency, safety, and efficiency and prioritizing customer protections.

The task is not easy, but with focus, and an all-hands-on-deck approach, I believe the MRAC can add value to an effort that is greater than each of us individually.

Our first order of business today will be an open discussion of the MRAC's priorities and agenda. MRAC's agenda has and will continue, to be shaped by what members identify as the most pressing market risk issues today.

I look forward to hearing from all of you about what issues you would like to raise and see discussed.

Thereafter, we will begin a Committee discussion on an issue that has surged and ebbed to the forefront of our market over the last decade: The erosion of the unsecured interbank term borrowing market, which underlies the world's most prominent benchmark LIBOR. LIBOR has been subject to pervasive fraud, abuse, and manipulation in the recent past. Since June 2012, the CFTC has levied sanctions of more than $3.3 billion for LIBOR-related misconduct.

These important enforcement actions initiated by prior CFTC leadership, not only addressed the bad actions of numerous individuals, but also a failure of financial institutions to properly police employees.

What much of the public also learned, as a result of these enforcement cases, is that LIBOR is not merely a tool for financial institutions. LIBOR directly impacts the everyday lives of

Americans across our nation, from the terms of the most basic home mortgage to student loan agreements, auto financing contracts, and credit card agreements, LIBOR is pervasive throughout our real economy.

At the expense of millions of Americans, a few individuals intentionally manipulated LIBOR to enrich themselves. These actions, however discrete, are a cautionary tale that shows how important today's exercise is to not only fix benchmarks but insure this type of fraud never happens again.

Our first panel will discuss the role of interest rate benchmarks in the economy, the impetus for LIBOR reform, and the current status of global reform initiatives. The discussions will focus on the efforts of the Financial Stability Board and the ARRC, as well as other public and private sector coordination efforts in different jurisdictions.

Our second panel will do a deeper dive into current initiatives. Specifically, the discussions will address efforts led by the ICE Benchmark Administrator to improve LIBOR in the development of the Secured Overnight Financing Rate and SOFR derivatives.

Our third panel will discuss the effect of LIBOR reform on the derivatives markets. The discussion will focus on LIBOR reform's impact on legacy derivatives, the development of fall-back language, and key risk management and governance considerations for market participants.

Finally, end-user and dealer representatives will discuss the risk their firms and clients face with respect to LIBOR reform and how they, or their clients, are preparing to mitigate those risks.

In closing, I want to recognize the tremendous work of the ARRC, and also the work done overseas by the U.K.'s Financial Conduct Authority, the Bank of England, and the European Central Bank, and other key stakeholder groups.

The timeline of events since the financial crisis is a compelling story of recognition and reform as well as collaboration and innovation in the benchmark space.

We have a few years to reach consensus and lay the foundations for the next generation benchmarks.

Working today with several members of the ARRC, my goal is to use this venue, this Committee, as a solutions-oriented body that sheds light on the challenges ahead, identifies the potential risks for financial markets and individual Americans, and seeks to support the ongoing work of the ARRC through deliverables that both recognize the critical importance of benchmarks, but also demand integrity and credibility.

The derivatives markets play an integral role in benchmarks, and as I am sure, we will hear throughout today, finding solutions to the many issues and concerns about benchmark reform and transition rest within the markets overseen by the CFTC.

I am certain the Market Risk Advisory

Committee can play an important role in supporting all of the work that has been done dating back more than five years, but also in the few years ahead.

I look forward to today's discussion, and I appreciate everyone's participation and look forward to the future of the MRAC. Thank you.

MS. LEWIS: Thank you, Commissioner Behnam. And now we will have opening remarks from Chairman Giancarlo.

CHAIRMAN GIANCARLO: Thank you, Alicia. Thank you, Commissioner Behnam. Good morning, Everyone. A warm welcome to the MRAC Committee members, to today's participants and presenters. Welcome to the CFTC, to those here and on the telephone.

All meetings of CFTC advisory committees are important. But today's meeting is particularly important. The discontinuation of LIBOR is not a possibility; it's a certainty.

We must anticipate it, we must accommodate it, and we must adapt to it.

The transition from LIBOR to SOFR and the other risk-free rates requires thoughtfulness and preparation in order to support and not jeopardize systemic stability.

It requires dialogue and planning, such as that that we will conduct today under the rightful auspices of the Market Risk Advisory Committee sponsored by Commissioner Behnam.

Some brief and selected history on this issue: In July 2013, the Financial Stability Board established an official sector steering group, which includes senior officials from the central banks and regulatory agencies, including the CFTC.

The OSSG serves to focus the FSB's work on the interest rate benchmarks that are considered to play the most fundamental role in the global financial system.

The FSB published its recommendations in July 2014 and called for the development of alternative interest rate benchmarks. And in November 2014, the Alternate Reference Rates

Committee, or ARRC, was convened by the Board of Governors of the Federal Reserve System and the Federal Reserve Bank of New York.

The ARRC consists of a group of banks, market participants, industry associations and other U.S. financial regulators. The ARRC also includes the CFTC, first under Chairman Timothy Massad, and I've been pleased to continue that service.

The ARRC was tasked with two primary goals: First, identify an alternate reference rate to replace LIBOR, and second, to develop a market strategy and to make the transition.

After deliberating for over two years, in June 2017, the ARRC selected the Secured Overnight Financing Rate, or SOFR, as a replacement for LIBOR.

SOFR's publication began in April of this year. Trading in SOFR futures began in the United States in May. And the initial trading volumes and liquidity are quite promising. ARRC 2.0 is now busy with the education and implementation of the transition from LIBOR to SOFR.

Yet prior to all of this, as Commissioner Behnam noted, LIBOR was well in the headlines of the mainstream press. In large part, that was due to the CFTC's vigorous enforcement efforts, first initiated under Chairman Gensler.

The CFTC's leadership and policing benchmark manipulation continued under Chairman Massad, and is sustained by the current Commission, where it remains bipartisan in importance and serves as the global standard for enforcement of benchmark integrity.

It is undeniable that a major contributor to LIBOR's ability to be manipulated was its weakening foundation. Simply put, money center banks no longer rely on unsecured interbank lending to finance their daily operations. As a result, LIBOR is a widely-used benchmark that is no longer derived from a widely-traded market. It's an enormous edifice, built upon an eroding foundation, an unsustainable structure.

Yet because LIBOR is so widely used in a broad range of financial products and contracts and for our concerns at the CFTC, derivatives, such as swaps and futures, we must not, we cannot stand still.

Insuring that LIBOR and other such benchmarks are not readily susceptible to manipulation is a key part of the statutory mission of this Agency. That is why the CFTC supports the transition from LIBOR to SOFR and the other risk-free rates. Rates built upon sturdy foundations of markets with deep, endurable trading liquidity.

And that is why we continue to serve on the ARRC Committee, through the change in administrations. It's why we continue to cooperate closely with our fellow U.S. financial regulators, in particular, the Federal Reserve, regarding benchmark reform.

We also work closely with the FCA that has regulated LIBOR since 2013 when the ICE

Benchmark Association took over the administration of LIBOR.

A year ago FCA chief executive, Andrew Bailey, signaled loud and clear that there is great uncertainty about whether banks will continue to make LIBOR submissions through the transition period. That's that eroding foundation that I referred to.

Last week, Andrew Bailey, David Bowman of the Fed, and I, along with senior CFTC staff, including Sayee Srinivasan, met in New York to discuss next steps in the transition to SOFR. The three agencies are united in determination to move forward.

Earlier this morning, Andrew Bailey gave a powerful speech stating that the underlying weakness of LIBOR cannot be remedied. LIBOR's discontinuation is not something that may happen, but it's something that will happen. And market participants must prepare accordingly.

It is, for this reason, that the work of this Committee and the work of ARRC and the other risk-free reference rate working groups is so important. And it's why the discussions today are so important.

We're going to be hearing from the experts on the current state of play, the plans for the months ahead, and the many complex issues to be addressed. And, of course, the hopes and challenges for both market participants and the official sector. Today is an excellent program.

Clearly, we are in some uncharted territory, and there's a lot to be done. Yet the forward course is clear, it is away from LIBOR, and it is toward SOFR and the other rates drawn from robust trading markets.

The means of travel is also clear: It's a market-driven one, led by the private sector, with participation from both the buy side and the sell side. The official sector, of course, will assist and will stand close by the course helping to coordinate and encourage, prod and explain, and yes, if necessary, give a shove or two. We intend to get there.

On this side of the Atlantic, the Federal Reserve, and we at the CFTC remain committed to working with the market participants with the ARRC and the various trade associations, and global regulatory authorities to facilitate a smooth transition.

We commend ISDA for their work, specifically the recent consultation on the functioning of derivative contracts through LIBOR discontinuation.

As I said at the beginning, this is an important issue and today's meeting is an important meeting. Fortunately, it is an issue that has been and continues to be, non-partisan. There are no Republican and no Democrat issues when it comes to benchmark integrity.

And I want to particularly commend Commissioner Behnam for taking up this important topic. I anticipate that he, Alicia Lewis, and all the members of this Committee will bring an impressive level of thought, leadership and intelligence to the discussion. Thank you for taking this on.

Your work will also help educate the market about the transition to LIBOR and its chosen replacement, transition from LIBOR and its chosen replacement. That, in itself, is a critically important public service.

Thank you all, again, for participating. Let's get to work.

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

COMMISSIONER QUINTENZ: Thank you, Alicia. And thank you for your work in organizing and putting together today's meeting.

Thank you, Commissioner Behnam, for your leadership and sponsorship of this important committee. I'd like to associate myself with both your comments and the comments from the Chairman. Thank you, Tom, for agreeing to facilitate the conversation today.

And a welcome to all of our returning members of this important advisory committee and our new members who are taking a lot of time and effort and just adjusting your schedules to be with us and to provide us with the benefit of your views.

I'm delighted to join everyone here and look forward to hearing from all of you about your priorities for using this advisory committee to advise us, the Commission, as to issues and problems and foresights that you see that we may need to address in the coming months and years.

I'm also very pleased today that our meeting is devoted to addressing the issues relating to LIBOR and to a transitioning to SOFR and other alternative risk-free rates.

I support the ongoing benchmark reform initiatives and the development of alternative risk-free rates, in particular, the efforts of the ARRC, to establish SOFR as a new benchmark rate for a U.S. dollar-based business.

It's essential to the vitality and stability of global derivatives markets that participants trust the integrity of global financial benchmarks. Over $300 trillion of financial products are tied to LIBOR or other interbank offer rates. It's critical that reference rates reflect an honest assessment of the cost of borrowing unsecured funds in the interbank markets.

Given the decline in activity in the unsecured bank-funding market, in the absence of an FCA mandate for LIBOR submissions post-2021, the development of alternative RFRs that are based on actual transactional data from robust underlying markets will provide a transparent, viable alternative to LIBOR for market participants.

I think it's incumbent upon the Commission, our international counterparts, and the markets themselves, to carefully consider how the widespread adoption of SOFR, and if necessary other RFRs could be accomplished, in a manner that avoids unnecessary confusion, fragmentation, and disruption.

The introduction of RFRs pose a number of significant challenges for derivatives markets.

For starters, the markets must develop a forward-looking term structure for overnight rates like SOFR, the new cash and derivatives products referencing alternative RFRs must be created, and robust markets for those products must be cultivated, so that market participants continue to have access to liquid and efficient trading.

On that front, the launch of SOFR futures this past May is a very positive, but yet still a very preliminary, step. For market participants transitioning to other RFRs, there is much work that lies ahead.

For its part, the Commission can and should look to provide market participants with regulatory certainty regarding the treatment of legacy LIBOR-based contracts that are amended to reference new RFRs, including how margin trading and clearing requirements would apply to such amended contracts.

And finally, I would just like to note something that we are not addressing today, which is the European Union's Benchmarks Regulation, which took effect this past January, and sets forth a comprehensive regulatory regime for benchmark administrators.

Proposed amendments to this regulation could impact U.S. firms. These amendments could result in yet another example of extra-territorial overreach by EU authorities, analogous to the proposed amendments to EMIR regarding the regulation of Third Country CCPs.

The U.S. has not issued regulations analogous to the EU Benchmarks Regulation. Instead, U.S. regulators have encouraged U.S. Benchmark administrators to abide by the principles for financial benchmarks, published by IOSCO in 2013.

Given the cross-border implications of the EU's proposed amendments, I hope U.S. Regulators and their counterparts can coordinate on this issue, so that benchmark administrators do not become subject to conflicting requirements across jurisdictions and that regulatory deference is respected.

In closing, I'm very eager to hear the presenters on the panels today, and from all of you, on how benchmark reform can be supported and what additional steps the Commission can take to foster the development of active derivatives markets referencing RFRs.

Thank you very much. And thank you again to Commissioner Behnam and Alicia for your work.

MS. LEWIS: Thank you, Commissioner Quintenz. Again, thank you all for your opening remarks.

Before starting our discussion on MRAC priorities, there are just a few logistical items that I've been asked to mention to the Committee members.

Please make sure your microphone is on when you speak. This meeting is being simultaneously webcast, and it is important that your microphone is on so that the webcast audience can hear you.

Also, if you would like to be recognized during the discussion, please change the position of your place card so that it sits vertically on the table, or raise your hand and I will recognize you and give you the floor.

For those of our members that are on the phone, we will provide an opportunity for you to provide comments during the discussion.

As Commissioner Behnam stated, our first order of business today will be an open discussion of the MRAC's priorities and agenda. I'd just like to turn it over to Commissioner Behnam for brief remarks.

COMMISSIONER BEHNAM: Thanks, Alicia. As I mentioned in my opening statement, the months and years ahead will be informed by this Committee. So these next forty-five minutes or so or however long we need are critical in the sense of what we will be discussing in the future.

And as I've stated previously, and as I've stated this morning, myself, and I think I can speak for Chairman Giancarlo, Commissioner Quintenz, and Alicia, I will make my decisions based on what you all suggest and recommend as key and critical market-risk issues that you are facing today, or that you anticipate in the future.

I do believe that today's discussion is one of them, but there certainly are many that we've heard from you in the initial phases of setting up the Committee. But in this forum, while we're all together, I think it's important for us to hear from each of you to the extent that you'd like to share, issues that you're facing in dealing with, from a market perspective.

So I look forward to your comments and the discussion ahead. Thanks.

MS. LEWIS: At this time, I'd like to open the floor to the membership for comments.

Bill De Leon?

MR. DE LEON: Thank you, Alicia. And thank you, Commissioner Behnam, for the opportunity to join the MRAC. And thank you, Commissioner Giancarlo, for all the work that you and the CFTC have done. And thank you, Commissioner Quintenz, as well. We appreciate being here today and wanted to bring to the attention of the Committee a few things that we, at PIMCO, worry about. One of them, obviously, is LIBOR, which I realize we're going to spend a lot of time at and we think it is clearly an important item.

As you know, PIMCO is a member of the ARRC and very focused on that; however, we think it might make sense for the MRAC to consider potentially having a working group focused on LIBOR as one of its side projects, given its importance and its linkages with the funding market, how CCPs and other market participants fund themselves and finance things; and how it is an integral part of the market, so that may make sense for it to consider.

Additionally, another item that we worry about at PIMCO, and we think is something that is not--we received enough attention and would like the MRAC to consider is the risk associated with CCPs and the amount of skin in the game that they have.

We know that that has come up, frequently, and certainly is a topic of concern. Our worry is that the way the waterfalls are constructed, where the losses fall--and I know that there's been a lot of discussion about the end of the waterfall--our concern is before you get there and what the incentives are, and the risk frameworks associated with the CCPs. Our concern is do they have the appropriate skin in the game. Do they view themselves as market utilities or should they be viewing themselves as a higher standard, and should they be having their own capital in there, given the vast amounts of capital that they're managing and the risk frameworks that they're running?

So that's something else that we think that the MRAC should be considering and spending a lot more time on, given the phenomenal amount of capital that is being managed by the CCPs, and with the continuation of moves to have more and more products centrally cleared. We think that this is something that needs more focus, not less.

MS. LEWIS: Thank you, Bill. The Chair recognizes Jim Shanahan.

MR. SHANAHAN: Hi. I'd like to thank you for hosting this meeting, and I appreciate you providing access to many end users, in terms of the markets and understanding, you know, the aspects that we're dealing with on a daily basis.

I also want to compliment you: the LIBOR issue is probably one of the critical issues that we have right now. And working through this aspect, especially to get some smaller end users to understand that, and then having an efficient transition is critical.

One of the other points that we probably need to consider at some point is access for end users to the FCM market in both limits and in a cost-effective manner, especially, you know, end users with one-way, long-term exposure, who don't churn portfolios very often. There's been a resistance within FCMs because of the costs, and just access, there's an aspect that probably needs to be dealt with at some point.

MS. LEWIS: Thank you, Jim. The Chair recognizes Marnie Rosenberg from J.P. Morgan.

MS. ROSENBERG: Thank you. Thank you, Commissioner Behnam and Alicia, for reappointing myself as J. P. Morgan's representative to the MRAC, and I look forward to serving for this term.

So I wanted to talk about two topics today, the first on benchmark reform and the second on clearinghouse risk.

As most of you know, and the Chairman and Commissioners mentioned, Sandy O'Connor of J. P. Morgan has led the Alternative Reference Rate Committee, or ARRC, on U.S. rates benchmark performed for the industry since it was established several years ago. And she'll be speaking to this on background objectives and accomplishments on the first panel.

Under the ARRC framework, there are many working groups that are engaged in important work to achieve the ARRC's overall objectives, and all key stakeholders and regulators, including the

CFTC, across the industry are involved in the various groups.

Therefore, what we don't want to do is create efforts, processes or forums that would be duplicative or inefficient for the industry overall.

However, we would be very supportive of a subcommittee being formed that would add to the equation, focus on efforts and incentives on how to encourage market liquidity, in-depth, and depth in the derivatives markets, referencing the new U.S. benchmark SOFR, as this is what will be needed to promote financial stability over the long-term.

On clearinghouse risk, as a leading provider of access to clearing globally, as well as a major dealer, settlement bank, custodian, and lender, J. P. Morgan has been a leading advocate for strong and effective CCP resilience standards, as well as robust recovery and resolution planning.

In this regard, we believe much progress has been made by regulators, including the CFTC, to insure CCPs meet very high regulatory and risk management standards. However, we do believe there are a few specific CCP risk topics that should be considered as priorities that could be taken up by the MRAC, which could serve the Commission and the broader market, given the importance that CCPs play to financial stability.

So there are three topics I would like to mention specifically. The first one is on CCP risk governance. We have observed that CCPs have different structures and forums for communicating risk management changes and obtaining member feedback on changes the material impact to members' liability.

A discussion of CCP governance structures, risk governance structures, including processes for receiving and considering member-inclined input on any material developments impacting the risk to the membership; and sufficiency of transparency to members and other market participants would be very useful to educate the market on how this actually works in practice, as there seems to be a perception that if members sit on risk committees, then they have a say in how CCP risk is managed, which is not always the case.

The launch of bitcoin futures was discussed previously in this forum in January, and we are encouraged by the CFTC guidance on cryptocurrencies, requiring CCPs to seek member input, and other stakeholders. We think these topics should be discussed more broadly.

CCP margin calibration is the second item I wanted to mention. In light of recent large market moves, which caused significant initial margin breaks, we think it would be very useful for the MRAC to cover how CCPs calibrate margin models, how some of the key parameters are chosen, and whether anti-pro-cyclicality measures would be effective in a period of severe liquidity and market stress.

And the third topic I want to mention is non-default losses and resolution planning. Much progress has been made, as we all know, on addressing default losses and resources. However, we believe that work on addressing non-default losses still remains in a nascent stage. We think more could be done on assessing the potential impact of non-default losses, such as operational and cyber loss, from both a capital and resource perspective, as well as an operational resiliency perspective.

We also understand that U.S. Authorities are working together on CCP resolution planning, and providing an update to the ARRC on this would also be very useful.

Given that these are critical market infrastructures on which we all depend for continuity of critical services, particularly in light of mandatory clearing, we think CCP risk is a topic the MRAC should take up.

I do want to finally comment on Bill De Leon and PIMCO's comment on CCP capital and skin in the game. We continue to believe that this is also a very important topic that should be considered in the context of both resiliency recovery and resolution. Thank you.

MS. LEWIS: Thank you, Marnie. The Chair recognizes Tyson Slocum, Public Citizen.

MR. SLOCUM: All right. Thank you so much. So I'm Tyson Slocum with Public Citizen, which is a public interest research and advocacy group here in Washington, D.C. And I just want to thank Commissioner Behnam for the opportunity to serve on the Committee, and I want to thank the rest of the Commissioners for their support.

And I also have the pleasure of serving on the Energy and Environmental Markets Advisory Committee, under the sponsorship and leadership of the Chairman. And I look forward to our next meeting as well.

So I think there may be two issues that I'd like to have the Advisory Committee consider.

One is the proliferation of machine learning and artificial intelligence in operations, and specifically in issues related to regulatory compliance. I think that, you know, one of the big motives for a number of firms to expand the use of machine learning in regulatory compliance is cost savings, but I think there are a number of potential risks, especially given the opaque nature of some of the machine-learning operations; that I think it introduces a number of third-party entities into systemic risk issues. And I think that it would be smart of the Market Risk Advisory Committee, to better understand the role of machine learning, particularly in compliance programs and regulatory compliance programs; and to try and determine what risks if any, the proliferation of this machine learning and artificial intelligence may pose.

A second issue deals with designated contract markets. The CFTC has been contemplating designating more responsibilities to these entities, in light of some financial constraints at the CFTC. And I think that it would be of interest to examine whether or not there are conflicts of interest in the structure of some of these designated contract markets. They are for-profit entities, for the most part, that the profit motives for some of their operations may have conflicts with some of the market-monitoring operations that the CFTC may seek to delegate, and understanding better how their internal firewalls work and whether or not those are effective, and whether or not improvements need to be made.

Thank you very much for your time.

MS. LEWIS: Thank you, Tyson. The Chair recognizes Biswarup Chatterjee from Citigroup.

MR. CHATTERJEE: Alicia, thank you. And thank you, Commissioner Behnam for sponsoring and asking me and our firm to return to the Committee.

I think some very good points have been made, some issues around CCP, so I will not go around repeating some of them.

What I'd like to focus, and what I'd like to draw the Committee's attention, in the future, is to the transaction and trading part of the market. While we focus on systemic risk, while we focus on risk management, if we don't have robust mechanisms for risk transfer and transaction, between parties, we will, I think ultimately fail the market in this responsibility.

I think Tyson made some good points about changing market structure, introduction of technology, and we'll see, probably even with the process in today's discussion of rate migration that there will be scope for a lot of new products to be launched as the market evolves around these processes.

So I would like the MRAC to continue to focus on the trading aspect of the marketplace, the launch of new product, the appropriate governance, and regulation that accompanies it to make sure that while we encourage regulation, it does not create a marketplace where people don't have confidence in the product and the participants.

I think technology, operations, increasing level of automation could have impacts in the way the market behaves; market has liquidity, ops risk starts to become a big factor as we have large systemic pools of whether it's margin or funds concentrated in certain places. So the impact of operations risk continues to grow in the marketplace.

The last topic I would want the Committee to think about is a way for cleared markets. What about the fate of the uncleared markets. And that is a big part of the derivatives market and the part of the financial market innovation.

So rules around making sure we have the appropriate level of whether it's margins or frameworks to keep that market robust and transparent, but at the same time encourage trading and innovation in those marketplaces.

MS. LEWIS: Thank you, Bis. The Chair recognizes Marcus Stanley from AFR.

MR. STANLEY: Thank you. I'd first like to just agree with some of the things that Marnie said about CCP risk. I know that we've dealt with this already quite a lot in this Committee. So that we wouldn't want to just go over the ground that had been done in previous years. But I think that this baseline question of whether there is enough loss absorbency in the cleared derivatives market, and whether the risk, whether tail risk is being properly handled and addressed in the cleared derivatives market is a very fundamental question.

I think Marnie's comments show that major market participants still are unsure whether that question has been properly answered.

And I think that AFR probably disagrees with some of the people around this table in terms of the role of clearing member capital, in terms of providing that loss absorbency, but certainly that loss absorbency has got to be there somehow. And I think that should be definitely on this Committee's agenda.

Just in reference to what Commissioner Quintenz said about the IOSCO benchmark principles. I think SOFR and the LIBOR issue, there is a lot of consensus on, but there has been an enormous proliferation of benchmarks over the last decade. They're often used in automated trading.

I think there are a lot of governance questions on sort of lower-level benchmarks that don't rise to the level of sort of the core rates, like LIBOR; and there are a lot of questions and issues I think about whether those IOSCO principles are really being enforced for those benchmarks.

We had the benchmark questions come up in our cryptocurrency meeting last time. And where there was a discussion of how we get from an underlying market that's susceptible to manipulation to the benchmarks used to govern any crypto derivatives.

So I think there would be a lot of scope for discussing whether those IOSCO principles are being properly enforced across the broad range of private benchmarks in the market.

MS. LEWIS: Thank you, Marcus. The Chair recognizes Kevin McClear from ICE.

MR. McCLEAR: Thanks, Alicia. And thanks to the Commission for reconstituting the

Market Risk Advisory Committee. Fundamentally, ICE believes that it's extremely important to continue the work to incentivize central clearing.

Central clearing is fundamentally safe and sound and reduces systemic risk.

I want to talk on one particular point that's been raised by a number of MRAC committee members that ICE disagrees with. And that relates to the clearing capital and the default fund and the skin-in-the-game we referred to it.

ICE supports skin-in-the-game. In fact, we have more than 300 million invested in our clearinghouses around the world. But in the U.S., we voluntarily committed capital for commercial reasons, not for risk-based reasons. I think that's very important.

At ICE we do not take into consideration the clearing corporation capital of the-skin-in-the-game when we run our risk models. It's not taken into consideration when we determine the level of our default resources.

As a clearinghouse operator, as a

central counter-party, we are not a risk-taker. We're a risk-manager. We don't take on positions.

And when we consider our risk-management framework, our risk models, we go through a governance process. We don't have the discretion that many might think when it comes to determining margin.

We have member-based risk committees. We have independent board of directors. All of our risk models are independently validated by a qualified third-party. And we're regulated by multiple regulators that look at our risk models.

So we really don't have the discretion that people think, and we really don't--there is not a need for the capital to be at risk.

And I've been in the clearing industry for a long time, almost thirty years now. And I can tell you, before skin-in-game, the risk models worked just fine. It really does not offer the incentive that some might think.

So I question whether it's really an appropriate topic for this Committee.

MS. LEWIS: Thank you, Kevin. The Chair recognizes Isaac Chang from AQR.

MR. CHANG: Thank you. Thank you, Alicia, for organizing today's meeting, and Commissioner Behnam, for sponsoring the MRAC and also to Chairman Giancarlo and Commissioner Quintenz.

We certainly feel like--I certainly feel, like a number of the other Committee members have raised a valuable issue, important issues and I don't want to cover ground that's already been covered.

Just one point. I think that, in addition, or perhaps, I would like the Market Risk Committee, Advisory Committee, to consider is the market risk which arises from operational and technological dependencies across the chain, and from exchanging clearinghouse through end user. And I think it's worthwhile thinking about the risks, as the world moves, more and more dependent on technology.

But it's not just technology. I think

it's operational risks more generally. And even though they're operational, they do have market impacts. You know, I planned to bring up this topic anyway; but I have to admit on my trip to D.C. this morning, I was dealing with, as an end user, the after-effects of a failure at one of the world's largest exchanges and one of the world's largest FCMs unable to tell us our positions as of this morning of what we traded last night.

That raises real market risks, and I think an examination of those types of issues would be well within the--worthwhile for the Committee.

MS. LEWIS: Thank you, Isaac. The Chair recognizes Matthias Graulich from Eurex Clearing.

MR. GRAULICH: Thank you, Alicia. And thank you to Mr. Behnam for appointing me to serve on this Committee. It's a great honor, and I look forward to this continued cooperation.

I'd like to echo on one earlier comment that it's important that incentives to clear are maintained and being looked at.

I think there is a strong link between the activity in the bilateral world and the activity in the tiered world and that it is always important, if you change rules on one side of the market, that you don't create disincentives, for example, to Central Clearing.

I think Central Clearing has brought good, high-level transparency to the market and has made markets more robust and stable.

The market structure which has developed over the last five years, however, gives me, as a manager or a board member of the CCP, a bit of concern. That is we have a very strong concentration on only a very few clearing members.

Seventy-five percent, more than seventy-five percent of the client risk is concentrated on five clearing service providers in the OTC space. And this gives, in particular, concern when it comes to porting and the default of one or two of these large clearing brokers. And I think that the changes which are envisioned on leverage ratio side are the right step in the right direction.

However, I think it's not sufficient to address this market structural topic and that some attention should be, on this topic, how to create the right incentives to get broader diversification, new service providers into that space.

Thank you very much.

MS. LEWIS: Thank you, Matthias. The Chair recognizes Sebastiaan Koeling from FIA Principal Traders Group.

MR. KOELING: Thank you, Alicia. Thank you, Commissioner Behnam, for reappointing the MRAC. Thank you to the other Commissioners for all the good work you're doing.

I'd like to echo Matthias' point actually. I want to focus on the capital rules and constraints that have been put in place for banks. I can understand where a lot of these have come from, but at the same time, I think they currently pose quite a bit of a risk to the markets as they are right now.

As Matthias also mentioned, there's only a handful of clearing firms available, to facilitate the liquidity provision on all the centrally cleared markets that we have. And it's becoming disincentivized more and more, largely due to things like leverage ratio. Talking about a move from CEM to SA-CCR definitely are going in the right direction, but I think any serious disruptive market events would see a lot of liquidity providers having to pull out of the market because it's impossible for them to have their products cleared at only a handful of those clearing firms.

Recently, we've actually seen stories of firms having to shut their doors specifically for this reason. And I think it poses a serious risk also for potential new products that are going to come out there. And liquidity provisions will be needed.

Thank you.

MS. LEWIS: Thank you, Sebastiaan. The Chair recognizes Dale Michaels from OCC.

MR. MICHAELS: Thank you and to CFTC for creating the Market Risk Advisory Committee. It is a great forum. It has been in the past, and I look forward to it in the future.

I'm going to continue the same theme, from a CCP perspective on the leverage ratio. This has been a topic that the CFTC has been leading in other areas, but we haven't seen quite the advancement that we need to see, as far as getting push and getting new actual relief on the leverage ratio.

We've seen a lot of good information, and I think the CFTC has published some good information about the need to move from CEM to SA-CCR. But there hasn't been movement overall in the industry to really get to that, to the final efforts to actually get there.

And from a CCP perspective and a market perspective, we are seeing clearing members leave the business. We are, to Sebastiaan's point, seeing clearing members shut their doors on liquidity providers sometimes during the market, where they are no longer able to access, or hedge off positions, and we're seeing, most importantly, widening of bid-offer spreads.

We're seeing liquidity being drained from the market because of the leverage ratio that we're seeing today. So some attention on that would be very helpful. Thank you.

MS. LEWIS: Thank you, Dale. The Chair recognizes Stephen Berger from Citadel.

MR. BERGER: First I'd like to thank you for the opportunity to participate in the important work of this Committee. And I look forward to collaborating with all of my fellow Committee members in the months and years to come.

Three recommendations I'd like to make for MRAC to focus on going forward, some of which echo points that have already been made.

First, relates to concentration in the derivatives markets, both concentration of risk in the swap dealer community, as well as concentration in the market for the provision of client clearing services. I think in both these and other areas we can explore what factors may be contributing to that concentration and what steps can be taken to further diversify these critical markets.

Second, with respect to client access to clearing, I echo, you know, the points that a number of folks have made on that front already. I think we could also add to that a review of the forthcoming report that's coming out from a number of international bodies that have been looking at incentives to centrally clear derivatives. I think that would be quite timely as it's due to come out, as I understand it, at least in draft form in the coming months.

And also I would add to that an examination of what porting capabilities actually exist in the market today for customers. There's both I think capacity issues that folks have identified with the ability to have a secondary clearing member who could take positions if needed.

But I also think that there are

practical operational and technical aspects of that that are not as well-developed as they could be. And they would be beneficial if we developed them in peacetime, I think they would pay dividends in the time of our crisis as well.

And then the third area that I think would be worthy of further exploration is the benefits and potentially any cost related to greater pre and post-trade transparency in the derivatives markets. I think we now have a lot of different transparency regimes in place.

Our futures markets probably benefit from the greatest degree of pre and post-trade transparency. We have taken steps to, successful steps to improve pre and post-trade transparency in the CFTC-regulated swaps markets, but there is also a lot of other initiatives underway in related markets in Europe.

You know MIFID II has recently introduced a fairly comprehensive, in design, pre and post-trade transparency regime that hasn't fully been implemented yet. We are also actively engaged in discussions today here in the U.S. About what a post-trade transparency regime could look like in the U.S. Treasury market.

And over at the SEC, there was recently a recommendation for making revisions to how the post-trade transparency regime for corporate bonds works.

So I think given the number of different initiatives going on with respect to transparency, both pre- and post-trade, I think it could be interesting for this Committee to explore how they are working today in our futures and swaps markets and what, if any, refinements could be made to further improve how transparency contributes to price discovery, bid-ask spreads, market depth and other liquidity characteristics of our markets.

Thank you.

MS. LEWIS: Thank you, Stephen. The Chair recognizes Marcus Stanley.

MR. STANLEY: Yes, I've already talked but I just wanted to quickly comment on this issue of the leverage ratio that seems to come up every time there's space for open discussion in this Committee.

If one observes that there's an enormous concentration of client risk among a relatively small number of clearing members, one conclusion that could be drawn from that is that we better make extremely sure that those clearing members are solvent and sound.

And the capital position of those large clearing members is critical, precisely because they are so central to the system. And that, to me, calls for a strong leverage ratio, and strong capital in the derivatives markets.

And I do think that diversification is an issue. But there are a lot of ways to improve diversification, including the transparency and SEF trading and other areas that Stephen talked about, that would not reduce solvency requirements for these, for the large clearing members at the center of the market, so...

MS. LEWIS: Thank you, Marcus. The Chair recognizes Dennis McLaughlin from LCH.

MR. McLAUGHLIN: Thank you very much for the opportunity to be here.

I just thought that it might be a good idea to look at the systemic risk in the financial system because we haven't been really doing that. We've been more focused on micro issues, but in terms of how firms fit together, and how resilient the financial system is.

So, for example, we've heard a lot of people talk about non-default losses and operational issues and technology issues that may happen. For example, we don't run any--we do, we started to, but we don't run it system-wide, where we have a fire drill which might determine what would happen if there was a cyber attack. How would that propagate throughout the system? So things which are focused on the systemic risk of the financial structure, I think, would be useful.

MS LEWIS: Thank you, Dennis. The Chair recognizes Suzy White from HSBC.

MS. WHITE: Thank you. And thank you for adding HSBC to this Committee and for supporting my appointment.

Our priorities are in line with some of the things we've already heard, definitely clearinghouse risk, and most specifically the work-out and recovery resolution of an issue with the clearinghouse member.

I think the LIBOR is our top priority, so thank you for making that a priority for this Committee. It will be the biggest change our industry has had. And the--for HSBC and many of us around the table--the breadth of how it's going to impact us I still don't think is fully understood yet.

The third priority for us is cyber. We all have our own programs and our own defenses, but I don't think we're doing enough on the interconnectivity of industry around the cyber, the cyber story.

The defenses being put in place are great, but is there actually a workout if one of our clearinghouses or one of our SEF execution facilities were to be impacted by a cyber attack, how would we work together on that. And thinking about cyber from the interconnectivity of the market, not just all of our own programs that we have in place.

Thank you.

MS. LEWIS: Thank you, Suzy. The Chair recognizes Frank Hayden from Calpine Corporation.

MR. HAYDEN: Thank you. And thank you for having this Committee. It's a great privilege to be able to speak here today and to be part of this fine organization.

I think there are several issues. I'm just going to highlight, besides what folks have spoken about, regarding the benchmark reform area, I think we need to kind of address some of the simple plumbing with regard to how price indexing is reported, and how that happens. Because a lot of organizations just simply go dark. As soon as an enforcement action happens, they just turn off the lights. And I think that directly impacts market liquidity.

And so the governance issues around

that, I think, will be very relevant.

I think also the use of AI; someone mentioned that earlier, I think that is something we need to kind of deal with as a systemic risk issue. I mean as more and more computer modeling goes to some sort of mean regression modeling, you could, in fact, have market spikes or market-induced credit stress that would come into the market this, vis-a-vis this sort use of technology in it.

Additionally, even in the compliance area, as you use this sort of technology to kind of monitor and surveil, it introduces other risk factors that become very complex to manage and to oversee and run.

And, lastly, I think the issue about market liquidity. It's a big issue about the number of participants trading in the market, the ability to build up or get an offer in the back end of the market, to be able to hedge and actually transact. And it's very troubling when you do want to transact, and you physically can't transact vis-a-vis the lack of liquidity in the market.

So something to do with how do we bring participants back into the market and bring liquidity back into the market would be very helpful.

Thank you.

MS. LEWIS: Thank you, Frank. Now I'd like to open--well, Dennis, do you have another --now I'd like to open it up to members on the phone. If there are any members, who have any comments.

MR. ZUBROD: Hi, this is Luke Zubrod from Chatham. And I agree with a lot of the issues raised so far.

One thing I might add is the software consideration, which I think many of the risks that arise in the market, I think a lot of the assumption is those are products of system design challenges.

And I think that's not untrue, but I think, in addition to that, they arise out of cultures that give rise to those risks. And I think it could be interesting, as a group, to consider things firms are doing to address the cultural issue that gives rise to risk and risk cultures.

And I think it gets at the notion that, you know, when we try to address things purely from a system design perspective, often the result is increasing degrees of regulation to fix sort of an endless chain of problems, you know, whack-a-mole problems that arise because there's always yet another problem untouched.

And I think that compromises the vibrancy of the market. And so I think if we optimize on the efficient frontier of systems design and still have a problem, that is no doubt the result of cultural considerations that produce that problem.

So I think engaging around the topic of risk culture would be valuable to us.

MS LEWIS: Thank you, Luke. Is there anyone else on the phone that would like to speak?

MR. PRIYADARSHI: This is Sam Priyadrashi from Vanguard.

Thank you, Alicia, Commissioner Behnam, Chairman Giancarlo and Commissioner Quintenz.

Thank you for having Vanguard on the MRAC. I sense that this Committee could address market structure for peer-derivatives, as well as the new SOFR-based swap that will come about as a transition to SOFR swap. In particular, the trading protocol, fixed coupon swaps such as the market-agreed coupon swaps for SOFR swaps, the market determination, and Chairman Giancarlo has addressed a lot of the issues surrounding a swap-trading onset, so we should fully address the concerns for SOFR swaps and pre and post-trade transparency and clearing for SOFR swaps. Thank you.

MS. LEWIS: Thank you, Sam. Is there anyone else on the phone?

MR. KLEINBAUER: Hi, this is Derek Kleinbauer from Bloomberg. I just wanted to thank you for the opportunity to be here today. I would like to thank Commissioner Behnam, Chairman Giancarlo and Commissioner Quintenz for sponsoring the MRAC, and again for allowing Bloomberg to participate in this forum.

Also thanks to Alicia for help driving this. I really appreciate the work that goes into this.

I definitely look forward to the discussions today. And over the next couple of years, so I would definitely echo the other themes on clearinghouse risk. Benchmark reform, which I looked forward to the discussions today. Clearly, as a SEF, we're working with market participants to support these from an execution and clearing basis.

I would like to say as a swap execution facility and multilateral trading facility, and clearing service provider, I think it's important that as we discuss these topics within the MRAC, take into consideration the impact regulation that's either being implemented or proposed on a global basis, on what that may have on all market participants in the various utilities. And to the extent, we can share that outcome of these discussions with those global regulators, it would be a good byproduct of this meeting.

MS. LEWIS: Thank you, Derek. Is there anyone else on the phone that would like to speak? Okay. Now we're going to turn to Lisa Shemie from CBOE.

MS. SHEMIE: Thank you very much. And also I want to thank the Commission for including us, very excited to be part of this conversation.

I also just, a great segue from what Derek just proposed, as, we know that there is so much work being done now on the Commission's side with regards to swap execution facilities.

And I know there are ample additional forums to discussing proposed SEF rules and changes to the SEF regime. But one aspect that I think Derek just touched on as well, that we're really interested in, is the great work that the CFTC has already done in connection with international cooperation on trading venues and equivalency determinations, et cetera.

And would love to have more of an opportunity to explore the effects of those determinations, and hopefully future determinations, and encouragement for more international cooperation on that, in that I think we are now beginning to navigate the effects of the first determination, and possibly limitations of them, and concerns about fragmented liquidity, and just difficulties in being able to really expand on the membership to SEFs in the U.S. and feeling a lot of resistance from international regulators.

So future discussion, in this forum or any other, on international cooperation on encouraging the policy goals of the Commission to encourage trading on SEFs and DCMs would be very interesting to us.

MS. LEWIS: Thank you, Lisa. And that will be the last question. I'm sorry, Dale, we're kind of over on time. But I'd like to turn it over to Commissioner Quintenz for remarks.

COMMISSIONER QUINTENZ: Yes. Thank you, Alicia. I just wanted to make a quick comment as the sponsor of the Technology Advisory Committee. I think it would be a little remiss for me not to take note of how many technology-related issues are coming up in this context. And I certainly think that's appropriate.

We can't form walls between these different advisory committees. I think they're obviously inter-related. There are a lot of technology issues that could pose risks, and there are a lot of risks that I think could be appropriately addressed through technology.

And I think analyzing the automated trading environment and policy responses to it, have long been central to the TAC's mission and have had a lot of substantial discussion at prior TAC meetings. But the different memberships of this Committee, and all these committees, I think provide for a robust consideration of these issues collectively. I view this Committee as addressing those issues, as additive to that conversation, not duplicative.

So I welcome everyone, everyone's views here on the issues that the Technology Advisory Committee has already discussed and is going to continue to discuss. So I look forward to any of your recommendations on those topics.

MS. LEWIS: Commissioner Behnam?

COMMISSIONER BEHNAM: Just wrap up quickly, thanks, everyone. That was a great first panel to kick off, everything sort of as we envisioned, Commissioner Quintenz, Chairman Giancarlo of course, look forward to working with both of you in your capacities within the Commission, of course, but as sponsors of each of your respective committees. So we will take all of those considerations, all of those recommendations into consideration.

If there is anything else in the future that you want to talk about, obviously open-door policy. But this was a great first start, I think, to what will be a very robust and deep sort of menu of issues to discuss in the years ahead.

So thank you.

MS. LEWIS: So the Commissioner and I will probably review your comments and work on presenting an agenda to the MRAC for our next meeting.

So at this time, and keeping with the meeting agenda, we will take a five-minute break because we're kind of behind. So we'll start again at 11:20 A.M.

(Recess)

MS. LEWIS: It's my pleasure to call this meeting back to order. And now we'll start our discussion on LIBOR reform.

As Commissioner Behnam stated earlier, Tom Wipf will facilitate and help shape the discussions today during our panels.

As noted in the agenda, the first-panel discussion will be an overview of LIBOR reform. Tom?

MR. WIPF: Thank you very much. And before I begin, I'd like to thank Chairman Giancarlo, Commissioner Quintenz for their remarks today and their support on this important issue. I'd like to thank Commissioner Behnam and Alicia Lewis for putting us in a position to discuss this issue here today. And for all their efforts in bringing together this topic for this senior group.

And I'd also like to thank the panelists today and thank you for assembling this group because I think we have an outstanding panel of people here today who will, I think by the end of the day, wherever you are on the trail of alternative reference rates, I'm sure there are things that you'll find, not just educational but clearly actionable as we take this forward.

As we begin, my name is Tom Wipf. I'm Vice Chair of Institutional Securities at Morgan Stanley. And I represent our firm on the ARRC as well as the board of ISDA.

Before I start, I'd like to begin -- I'd like to note that I will not be commenting on behalf of Morgan Stanley, the ARRC or any other organization today and any views that I represent will be strictly my own.

The transition to Alternative Reference Rates is a massive but achievable task ahead of us. And to achieve success, it's paramount that we have close coordination between the public and private sectors.

I'd like to begin our discussion with a few points regarding the interest rate benchmarks and how we got here. So as we begin, fundamentally reference rates are critical to efficient markets. They help enable trading and standardized contracts which can help lower transaction costs and increase liquidity.

They also provide transparent and independent pricing. Accordingly, reference rates, like LIBOR, your LIBOR, et cetera, are widely used in the global financial system in large volume and through a broad range of financial products, contracts, and other activities, from complex derivatives to residential mortgages.

In USD LIBOR alone the Fed estimates

total exposure to be approximately 200 trillion, globally we've seen that LIBOR's exposures are about 370 trillion or more.

Given the sheer scale and wide-ranging financial products and contracts, industry groups and regulators have honed in on potential threats to financial stability. Without advance preparation, cessation of such a heavily-used reference rate will cause considerable disruption and impairment to the markets.

As many of you know, LIBOR started in 1986, and it sought to provide the market with an answer to the following question: At 11:00 a.m., at what rate could you borrow funds and where do you do so by asking and accepting any interbank offers that are reasonable market size just prior to 11:00 a.m.?

The issue with this question is that post-crisis, as has been discussed earlier today, this sort of unsecured interbank funding has all but dried up. This, despite ever-growing notional amounts of cash and derivative products tied to

LIBOR, and as a result, volume of contracts tied to LIBOR dwarf the wholesale unsecured-term bank funding markets that LIBOR is meant to represent.

The median volume of three-month funding transactions, which is the basis for three-month LIBOR, is less than one billion. In fact, there are many days when this volume is less than 500 million. Thinking that for a moment, 500 million in transactions provide the benchmark rate for a significant portion of over 200 trillion in financial contracts.

Clearly, there's structural imbalance in the market that needs to be addressed; and as former New York Fed President Bill Dudley put it: This is an inverted pyramid.

Confirming this, the International Organization of Securities Commissioners, IOSCO in July 2013 published their financial benchmarks, Principles for Financial Benchmarks.

In this document, the Commission specifies that to be an IOSCO-compliant benchmark, the data sufficiency principle must be met. A quote from the report, "A benchmark should be anchored in observable transactions." This brings the question as to whether or not LIBOR is a non-IOSCO-compliant rate, a designation that we all take very seriously.

As it relates to the LIBOR submission process today, the lack of underlying data is problematic because when a panel bank cannot source transaction-based information, they are expected to submit LIBOR on what is "an expert judgment submission."

In other words, submitting members are expected to take their best guess at where unsecured funding rates should be offered, despite on most days not seeing a trade actually occur.

Accordingly, panel banks assume that litigation risk, which is very real and puts pressure on the continuity of that group. These structural issues that threaten the validity of each daily LIBOR setting, which is why regulators and market participants alike are working to devise a lasting solution to the LIBOR dilemma by creating and implementing new reference rates globally.

We've talked about this over a long period of time and I think there's a lot of work that's been done to get us here; and I'm just trying to take a moment to sort of catch people up on a bit of the history, but this work has been going on for many years, and I think we have been describing this as a bit of the, as the Five Stages of Grief. And I think that over the next--over the last few years we have moved very quickly, I think, away from sort of denial and anger to the point of widespread market acceptance that there is work that needs to be done and work that will be done.

So while many market participants have sort of moved forward on this, with the work of the Alternative Reference Rates Committee, which was tasked with finding a replacement rate, as we've discussed earlier.

So basically, with the introduction of SOFR, which we've talked about already, there is a basic tentative transition timeline for the U.S. Derivatives market. There are several steps left to be completed, but the punchline is that if a timeline is followed, the market will be prepared for the potential cessation of LIBOR by year-end 2021.

A few key steps have taken place. As we've discussed, April 3rd, the Fed began publishing SOFR. May 7th, the CME launched SOFR futures, and as you'll hear from our panelists over the course of the day, there are many other key steps, including clearing, PAI discounting and term rates that need to be discussed.

We were encouraged to see the European Investment Bank issue a billion in five-year SONIA-based debt and look forward to primary issuance in the U.S., which we hope will create more organic hedging demand for SOFR.

Despite the considerable progress that's been made so far, much of the heavy lifting is still in front of us. And if we are to meet our year-end 2021 goals for a transition to SOFR, we need to get started now.

One of the key issues that remains is how to deal with the 200 trillion in existing LIBOR-based contracts. I personally think that the multitude of challenges ahead of us are in two key buckets: Documentation and spread methodology.

With regards to documentation, not all LIBOR-referencing contracts are created equal. Derivatives may be easier to fix than cash products. Our focus on derivatives is here today but with derivatives ISDA is actively working on a protocol that will be helpful in defining proper fall-back procedures, and I think there's going to be a lot of discussion on that when we hear from ISDA today.

I think it's important to note that even though more than 95% of USD LIBOR contracts are for derivatives, we are hopeful that those protocols can settle a lot of those issues on a go-forward basis. However, there are many questions that ISDA is working through, particularly as it relates to spread methodology, which you're going to hear a lot about today.

Although it's only a small part of the LIBOR market, potentially 10 trillion but by far one the bigger documentation headaches is the cash market. We reference that today because the interplay between the cash and derivatives market for this group will be significantly important, as they all live in the same eco-system; so although we're very focused on derivatives here today, there's a critical component of this that takes place in the cash market, and we want to make sure that there's at least some degree, an aspiration for consistency across all that.

I think the biggest issue we see in the cash market is that documentation is very difficult to change post-production. So things like floating rate notes, where we need a 100 percent of bondholder approval to change a reference rate is a good example of that.

So what we see here is, although there are very significant differences across each product and derivatives is obviously the vast majority of the issues that we're dealing with, particularly here today. There is a correlation to the cash market that we can't ignore.

So when we think about the work in focus, it is important as we look at fallbacks across all products, that fallbacks for legacy contracts will not be perfect. There is no perfect fallback to deal with this, and it's a lot of great work happening, and there's going to be things that are going to make this much more - put this in a much better position than we stand today. But by no means will any of this be perfect.

So that helps us in some degree because I think it serves to focus us on the fact is that new production is how we can actually do this. And I think that the approach we want to think about, as we start looking at the fallbacks and we look at everything that's in front of us, and the work ahead, is we really have to stop digging.

And I think the point to make here is

that we can actually begin as market participants to utilize these new rates, when appropriate, to begin to utilize the roll down, which can really be a friend of the market. If we think about this, due to some of the nature of the products, you know, more than 80 percent of these contracts will roll off by 2021.

So presented with an opportunity that we want to have the smallest legacy book of business as we approach 2021, a lot of the preparation we're doing is going to be really thinking about how to more quickly utilize SOFR, and the other alternative reference rates, in products where appropriate/when appropriate, and begin to have the fall down be our friend, and utilize that roll, that roll down, I'm sorry, that roll down that will take us to a point that, as we approach 2021, that the legacy activity will be at the smallest possible level and with the hope that these fallbacks, at some point, will not have to be used, or if used, will be used on a small amount of risk.

So just really next steps from here, it really is important that we take opportunities like this today to discuss this topic in an open forum. As I said earlier, it is only through coordination and collaboration that we will get to a good solution. I think the CFTC has done an excellent job in picking today's panelists. You'll find that their commentary and their offerings differ and will give you different perspectives and a lot of fresh content.

And again, wherever you are on the path to Alternative Reference Rates, I think that you'll find things here not just educational but actionable. So I would like to introduce the first panelist for an overview of LIBOR reform.

We will begin by -- each panelist will give a three to five-minute preamble on where we are in the market and what we're seeing.

So I'll start by introducing David Bowman, who is an Advisor of the Federal Board of Governors and the Senior Sponsor of the ARRC, along with Sandy O'Connor, who is the Chair of the

ARRC, Chief Regulatory Affairs Officer J. P. Morgan Chase; and Mauricio Melara, Associate Director of Office of International Affairs, CFTC.

So we will begin with the themes of the panel, which is the impetus for LIBOR reform, Financial Stability Board's review, creation of the ARRC, reconstitution of the ARRC, International Coordination of the Global Development of Alternative Reference Rates. So why don't we start and I will pass the floor to David Bowman.

MR. BOWMAN: All right. Thank you, Tom. I want to thank the Market Risk Advisory Committee and the Commodities Futures Trading Commission, especially Chairman Giancarlo, Commissioner Behnam, for inviting me to this panel.

As Tom noted, I'm a Senior Advisor at the Board of Governors. I'm the lead staff member coordinating the Federal Reserve's work with the Alternative Reference Rates Committee or ARRC. I've also had the pleasure of working with Chairman Powell in his capacity as co-Chair of the

Financial Stability Board's Official Sector Steering Group on interest rate benchmarks, and of serving as the Board's representative as an observer to ICE Benchmark Administrations, or IBA's, LIBOR oversight committee.

Despite these various roles, my comments today should be taken as my own and not necessarily reflecting the views of the Federal Reserve Board.

Let me start by being clear in stating that the official sector, particularly the U.K. Financial Conduct Authority as the benchmark regulator, has supported LIBOR for some time, encouraging banks to remain on LIBOR panels, as reforms were put in place, and in securing a voluntary agreement with submitting banks to remain on the LIBOR panels through the end of 2021.

The Federal Reserve Board has also worked very closely with IBA, the FCA, and other international authorities in developing the details of its roadmap for LIBOR. In my own view, LIBOR might well have collapsed some time ago without these official sector interventions.

However, while these efforts have greatly strengthened LIBOR's governance, and offered a valuable further period of stability, it is an inescapable fact that LIBOR remains in a potentially unstable position and that it could eventually be forced to stop publication.

As Tom noted, the wholesale, short-term funding markets that LIBOR is meant to represent have become quite thin. The ARRC has estimated that the typical daily volume of transactions underlying three-month U.S. dollar LIBOR is about 500 million, and oftentimes, less.

I'm hopeful that we can present further information, number of transactions underlying three-month LIBOR, all the LIBOR tenders at the roundtable that the ARRC will hold next week. And the number of transactions is quite small.

By comparison, there are an estimated 200 trillion in outstanding contracts that reference U.S. dollar LIBOR of perhaps 270 trillion or more that reference all of the LIBOR currencies together.

With so few transactions, LIBOR is necessarily reliant on submitting banks' willingness to continue to provide expert judgment, and many may eventually choose to stop their submissions after the voluntary agreement with FCA ends.

And as Andrew Bailey, CEO of FCA, noted this morning, FCA is also required to judge whether LIBOR is representative. And if it is not, then supervised entities within the European Union may be precluded from entering into new LIBOR contracts, which could severely diminish LIBOR's usefulness and liquidity to participants outside of the EU, even if it does not stop its publication.

These instabilities are what led the Federal Reserve to convene the ARRC in 2014, in cooperation with the CFTC, Department of Treasury and Office of Financial Research.

The formation of the ARRC was in line

with the Financial Stability Oversight Councils' recommendations that regulators and market participants work together to seek robust alternatives to U.S. dollar LIBOR and plan to achieve a smooth transition.

The work of the ARRC has been, as the FSOC recommended, a collaborative effort between the private sector participants and the official sector.

The Federal Reserve, CFTC, Bureau of Consumer Financial Protection, Federal Deposit Insurance Corporation, Federal Housing Finance Agency, Office of the Comptroller of the Currency, Office of Financial Research, Securities and Exchange Commission and U.S. Treasury Department are all ex officio members of the ARRC.

And the Federal Reserve Bank of New York, in cooperation with the Office of Financial Research, is producing the Secured Overnight Financing Rate, or SOFR, chosen by the ARRC. This rate represents the deepest and most liquid rates market at a given maturity in the United States.

Our support for the ARRC is necessary because despite the warnings of the FSOC, most financial market participants had not previously really considered that LIBOR might stop and the contracts written on LIBOR, in most cases, do not adequately protect against this possibility.

Of the estimated 200 trillion in contracts referencing U.S. dollar LIBOR, roughly 190 trillion are derivatives contracts covered by the ISDA definitions. If LIBOR were to stop today, the ISDA documentation specifies that the calculation agent obtain quotations from an unspecified set of banks. It is unlikely that banks would be willing to provide such quotations.

And if they do not, the ISDA definitions do not currently specify what those 190 trillion in contracts would then pay or receive. This is why the work that ISDA is undergoing, which Scott O'Malia will discuss later, is so crucial.

Other products, including floating rate notes and securities in most securitizations, would fall back to a fixed rate at the last published value of LIBOR in these circumstances, while most business loans would fall back to the prime rate, which is currently sub a hundred basis points above LIBOR. Parallel to the ISDA effort, the ARRC is seeking to recommend safer contract language for these types of cash products, although dealing with legacy contracts would be more difficult.

Better contract language will help to mitigate these financial stability risks. But ultimately, we need to reduce the stock of contracts that reference U.S. dollar LIBOR if the risks are to be fully addressed.

This is why the work of the ARRC is so important, which I will now turn over to Sandy to discuss.

MS. O'CONNOR: Thank you. Thank you, David. Thank you again for the opportunity to be here, Commissioners and Chairman Giancarlo.

So I think you heard quite a bit already from Tom and from David about the risks. I want to take you back a little bit further. When the

Financial Stability Board looked at the potential horizon scan of financial stability issues, they realized they wanted to insure resilient and robust benchmarks.

And in that effort, they took a multi-rate approach, and they said, "Well, let's see what we can do to shore up LIBOR in and of itself," and you've heard, there's not a lot of there there. There aren't - there is not a lot of activity going on, but they put really important governance and waterfall approaches so that despite the fact that judgment is used, there's a framework for understanding that judgment. There's not much more that can be done there.

Simultaneously, they recommended that alternative risk-free rates would be sought out and determined. And as David had mentioned, in 2014 the Board convened the ARRC, along with CFTC and others, to figure out what could be appropriate alternative risk-free rates that could be used as the alternatives to LIBOR for derivatives contracts.

And that is what was the key part of the mandate of this Committee. And in addition to identifying that rate, also the Committee, the ARRC 1.0, as we like to call it, was responsible for determining an appropriate implementation plan that was usable, non-disruptive and that would enable and support the voluntary adoption of this new rate, again for use in derivatives; and then also to work on some improvement to create more robust contract language around that.

And so as the ARRC 1.0 began its journey, it had to determine, what would be the appropriate criteria to select a rate, and, in fact, it incorporated things like durability, resiliency, the item that Tom mentioned, deep transaction-based to create an appropriate framework, and of course they wanted to make sure it was fit for purpose and consistent with those IOSCO principles as defined.

And for those of you not familiar with IOSCO principles, I'll go through just a quick couple of them. Firstly, the benchmark quality.

Is it durable, will it be good on a day that has normal business activity, as well as under stress?

Will it be consistent, will it be transaction-based, will it be resilient. The data around it. Is there adequate historical data, is the information available and transparent, and then, of course, does it have appropriate governance around it?

And as the ARRC looked around the available rates in the marketplace that could potentially be used as a risk-free, or a near risk-free rate, and consistent with meeting market objectives, we realized that there actually wasn't one out there.

Now there were rates out there, but not a benchmark. So ultimately, the work led us to the crafting, if you will, of a repo-based benchmark, which today is called SOFR and is ultimately the rate that was selected. And that is comprised of tri-party repo activity, bilateral cleared repo activity and GCF Repo; and is representative, broadly, of where financing, repo financing can occur. And, by the way, not only between and among banks or broker/dealers.

There are broader swaths of the market that transact in this financing activity, and that includes money market funds, securities lenders, other types of investors, hedge funds.

So it is broadly more durable. And just, we've talked quite a bit about that inverted pyramid, seven billion dollars worth of trades in LIBOR activity against a 200 trillion U.S. dollar swaps market, well, when you look at SOFR, we're talking about daily 750 billion dollars of transactions -- and importantly, those are not happening via submissions. They are collected and consolidated by the New York Fed and the OFR; they are published by the official sector.

So this one really stands up strong and hard around all of the criteria set forth. And as David mentioned, the deepest, most liquid fixed-income market in the United States. So it's really, really valuable and viable.

As we got to the selection process --

and I want to talk just briefly about the Committee structure. ARRC 1.0, given the challenge that was put before it, was comprised of the fifteen derivatives houses, and ultimately expanded its non-voting membership to include ISDA, given underlying contract work, and of course selection of central counterparty infrastructure folks, because the second charge that we had was to insure that we build a viable implementation plan, as I mentioned.

As we selected the rate, the one other piece I'd like to also mention is the rate was not selected in a vacuum. We have all of those ex officio members and hit the criteria. But before selection, we put out for-consultation to the marketplace, and we set up a sub-advisory committee, which was chaired by Fannie Mae, to sit and gather more information from large end users and large participants in the derivatives market.

And their recommendation was also more support for SOFR versus any other choices.

So ultimately that's how we got to this

selection. And we realized to transform a market --you needed a place to go. You needed something to aim for. So that is what was put in place.

Now the implementation plan: The implementation plan, again, is about how do you build liquidity? How do you create a market so that it becomes viable to be used, that people can become familiar with it?

So, in fact, we set the rate up, the rate's being produced. You heard about that. That was on April 3rd of this year.

On May 7th of this year, CME launched futures contracts that are all referencing the SOFR rate. And we're seeing volume begin to develop. We have 69,000 contracts that have traded so far; daily volumes are around, you know, 40 billion or so. We've got open interest of nearly 15,000 contracts.

Now, the numbers aren't huge yet, but by the way, they're actually a little bit bigger than what we saw in 1981 when we launched the Euro dollar futures contract. So we are hopeful.

And this is where we need people around this table, and people in the marketplace at large, to add liquidity to this market. On Monday, LCH is going to be launching cleared swaps tied to SOFR.

So this is how we are collectively building this market. And there's a very specific plan on the steps that need to be taken so that this rate becomes viable and usable over time.

And Tom also mentioned, ultimately the key here is through the cleared swap business, to insure that we move the discounting rate, and the PAI rate, to this new SOFR. Why? Because that will embed demand into the derivatives market for this new rate, which is what, in fact, will make it viable.

So that's the big picture around the implementation. So ARRC 1.1 did what it needed to do: create a plan. We are on the journey. As Tom said, there's an awful lot more to do. But we know what needs to be done.

So when Andrew Bailey spoke in July.

July, today is July, too, he spoke again today, when he spoke about it last July, about LIBOR and he told us all that two reference banks left the U.S. dollar LIBOR panels, and after 2021, he would no longer be able to use his ability to compel to submission. That it was no longer a potential stability risk; it was actually a likely risk if we didn't address it in short order.

So what he did was basically put an end date on it for us. 2021, all bets are off. And it doesn't mean there necessarily will be a cliff effect, but it's not likely to last past that, from a LIBOR publication perspective.

So now, not only did we need something viable for derivatives and moving the market to something new, we needed to make sure that we have appropriate plans for all cash products and all end users that are not dealing in derivatives because LIBOR impacts them as well. And while 10 trillion dollars is a small piece of the amount tied to LIBOR, 10 trillion dollars is a lot of money.

And so ARRC 2.0 was reconstituted. And now the membership is substantially different. The ARRC 2.0 Committee has 26 members, and they vary and span a variety of segments and products. So we've got, you know, all of the--several of the derivatives houses, we've got asset managers. We've got mortgage users. We also have trade associations, like SIFMA, because it was very important to insure that we have a broader access to other voices given the fact that the Committee is limited.

And as David mentioned, we also expanded the ex-officio membership because we were covering now broader swaths of the marketplace.

So what does ARRC 2.0 need to deliver? One, we need to deliver on this paced-implementation plan in an ongoing way, and we need to work on a curve term. Because cash products may very well need access to a term curve.

Item number two, you're going to hear a lot more about contract fallback language. In addition to fallbacks for derivatives -- which right now are inadequate and we will need a protocol around, and ISDA has launched information today -- we need protocols around, while the fallback, which ISDA is already recommending, will be the risk-free rates that are being recommended across the committees around the world; two, what is the appropriate spread and calculation related to that to minimize value transfer if a fallback is, in fact, triggered; and, by the way, what is the trigger?

We need transparency around what the trigger to fallback will look like when LIBOR is over, because it needs to be clear for every participant in the entire marketplace. There can be nothing vague about this.

And, by the way, while I think there are some obvious triggers, like if the administrator says LIBOR is done, or if the FCA declares LIBOR is done, is there a need for something sort of in between, where it's sort of limping along but is no longer even adequately fit for purpose.

So that's work that is ongoing. In addition to that, as I mentioned, we have lots of participants who transact in those other products: Mortgages, corporate loans, syndicated loans, securitizations and things of that matter.

And we've got work streams related to those on what will be the appropriate language for those contracts. Because we need, as Tom mentioned, we need to start writing new language right now. Because if we start writing it right now, by the time we get to 2021, one, we will have a new interest rate that we're using; and, secondly, we will have appropriate fallbacks, and 82 percent of the risk will be sort of off the books.

So that's the important work there. And in addition to that, we've got support committees around what do we need from the regulatory community.

You heard Commissioner Quintenz mention this morning, if we're going to put new fallback language into existing ISDA contracts, what does that mean, with regard to margin? What does that mean with regard to redocumentation or confirmations? So we'll need some guidance to the marketplace.

We're also--we also have work going on around tax and accounting. Because the reality is, for example, SOFR's a new rate. It needs to be able to be used as an effective hedge, or we will not be able to move the marketplace to it. And FASB has put out a consultation on this. And we're awaiting their decisions around that. Also very important.

And lastly, and I will say most importantly an outreach and communications committee. Because this is a fundamental change to the entire marketplace, and its operating model, so to speak; and it impacts across the globe, nearly 300 trillion dollars worth of contracts that span, you know, small investors, holders of retail mortgages, to the biggest derivatives houses in the world and governments who are issuing against it.

So that sort of frames the issue. That is what we are delivering against. You have an extraordinary commitment of a variety of market participants. There is, in fact, a game plan. But the one thing I will leave you with, before I turn the floor back over, is this cannot be done solely by the professional buy and sell side houses.

We are the ones that can build the liquidity up front, but ultimately, there will need to be issuances, there will need to be demand, and there will need to be broad participation. And we can't wait until the end of 2021 to get there. So that's framing the issue for you.

MR. WIPF: Mauricio, thanks, Sandy.

MR. MELARA: Thanks, Tom. My remarks will be shorter. I expected to timeline certain international efforts. And from the opening remarks, up to now, I think folks have done excellent in covering that ground.

Maybe what I'll do is focus my time a

little bit on the work of IOSCO. And IOSCO has already been mentioned as having constituted--initially the tests were shown on financial benchmarks which produced the principles for financial benchmarks.

That became a guiding document for administrators, for regulators to think about financial benchmark reform and in particular some of the--certainly the conflates of-- and governance aspects of those principles but also importantly, fallback planning, and the considerations that participants should have in the context of the cessation of a major financial benchmark.

IOSCO has continued to work in this space and has continued to form consensus amongst securities regulators on the issues and most recently, in January, published a statement that was targeted for end users, in particular, the considerations they should have in thinking about the contractual terms that they should be aware of. That they should sort of strive to embed into their documentation.

And also to contemplate a world in which a major financial benchmark, like LIBOR, would cease to exist.

Now, what I'm hearing today so far, not only from the introductory remarks, but from David and Sandy, is that we're entering a phase of important advocacy all around the table.

So, not only are the working groups coming up with action plans and executing on them but there will be a push and I think a need for market participants who had never considered these issues to understand them well, understand them deeply and to plan accordingly. Now I believe that the international regulatory community has always been good, not only at forming consensus but being able to emphasize certain considerations that market participants should have in mind. So this sort of work is exactly the kind of function that IOSCO can facilitate going forward. The OSSG has become an important platform for authorities to continue to organize the work, to interface with the ARRC, to meet deadlines that are moving very fast. I would say that IOSCO has a role here to continue to plug in as well and to hopefully provide more clarity and expand knowledge in this area.

I would say also that in terms of the transitional period that we're under right now leading up to 2021, that 2020 is a target date for IOSCO to revisit and contemplate where its various objectives and set agenda are. I would say that the time is apt for IOSCO to contribute to this effort. So I would say that going forward from the international regulatory community what we need is further cooperation with the OSSG and put a good foot forward to deliver on these efforts. So with that, I'll turn it back to you, thanks.

MR. WIPF: So thank you to all the panelists. I think we would now move to questions. Just as a reminder, if you'd like to be recognized, either put your card up or raise your hand and Alicia will recognize you and give you the floor. Questions for the panel.

MS. LEWIS: The Chair recognizes John Murphy from the Commodity Markets Council.

MR. MURPHY: Thanks very much. This question I guess is for Sandy or anyone of the panelists. First of all, thank you very much for your information and comments. You did mention trying to build a term curve and there was discussion work around that process. Can you give us a little more information as to where we're at with the term curve currently and where you think we might head?

MS. O' CONNOR: I'll start and then David can jump in on this. I think one of the most important things is getting those futures contracts launched. You are already seeing the futures contracts being trade out to 2019 or so. Because the three month, in particular, you can start to get the inferred rate that is creating a forward curve. There may be a possibility to construct some bootstrapping around that to get to a useable term rate. I think the key here that we are all very focused on, the liquidity actually exists in the overnight. That is where the repo market, in fact, is. There isn't a lot of cash -- well there's close to zero cash trading in the term curve. And as we see, the potentially term trading occur in derivatives, the question is going to be depth of market and fix for purpose again, back to those same criteria we set when we were willing to agree around the overnight being the benchmark, both fit for purpose and consistent with IOSCO principles. So that's where we are sort of so far. But the real question is and I think we've really assessed in the derivatives market for the most part there is not a fundamental need for a term curve. In the cash markets, there may very well be and that's what we're working on. Let me hand it to David to see what he will add.

MR. BOWMAN: Yeah I would agree with all that. I would note that the FSB put out a note this morning talking about where for financial stability concerns it would be appropriate to look at the overnight rate and where the forward looking term rate could be appropriate. They're clear that for derivatives it really needs to be primarily based on the overnight rates such as SOFR. But that there is scope for the creation, at least in some currencies of a forward looking term rate like the kind that people are used to with LIBOR and that can be used in cash markets.

So it would not just be futures necessarily it could be OIS too or a combination of those data. I think Sandy's actually may show some indicative rate of what this kind of term rate could look like. And the ARRC, I think, is helpful that it can produce that kind of indicative rate for now so people can become familiar with it. But for it to be a reference rate that people could use in their contracts, we need to build up the depths of these markets. And that's why everyone, I think, has a stake in helping develop these markets. The sooner we build them, the sooner we can get the term rate, the sooner and easier it is going to be for you to transition in the cash products you have.

MS. LEWIS: The Chair recognizes Frank Hayden, Calpine Corporation.

MR. HAYDEN: Yes, so some simple questions just hearing you guys talk. So on the cash market perspective with these legacy contracts, how much systemic risk do we believe is laying out there. And then B, if there is a need for fallback aren't there some sort of terms within the contract that they can bilaterally agree on what the rate would be or something along those lines to contractually manage that?

MS. O' CONNOR: I'll start and again, David please. So the biggest component of stability risk is going to be related to the derivatives market because one, it is the largest component of the market and two, as currently structured has the weakest fallback language. Which is why the work that ISDA is doing has been so important. The fallback language as it exists today is if LIBOR is not available, because it really didn't contemplate its ceasing to exist. If LIBOR is not available, give a call to two of those reference banks that didn't submit. That's the fallback language. So the reality is if a reference bank is not willing to submit into a panel, it is not likely to be willing or able to provide a rate on a phone call.

MR. HAYDEN: So there is no contemplation that the trader at the repo desk would call the other guy and say hey, what is the rate for tonight.

MS. O' CONNOR: But let's think about that. Think about doing bilateral renegotiations simultaneously on $300 trillion. So that's the systemic risk. So what we need here, and this is the work that's going on, how do we embed now into existing contracts, a protocol of what the fallback will be. So it will be very clear and doesn't need to be negotiated bilaterally for all derivatives contracts. It will go to SOFR. The question will be what is the spread over SOFR to minimize the transference of value to true it up to LIBOR and then, of course, the identification of the triggers.

Similar work is being or needs to be done in the cash products. David mentioned a little bit here, you can have some level of bilateral negotiation there too. But there is a frame that could be provided to make it obvious and usable. At the beginning of this week, in fact, the ARRC published guiding principles on how to think about protocols and fallback language to minimize stability risk disruption and to support both feasibility and fairness. Because you don't want people negotiating from different vantage points but rather we need to get to the right point that is appropriate for everyone.

MR. BOWMAN: So I agree with all that. To answer your question, in some cash products there is scope for bilateral negotiations, so corporate loans. I would note that the problem of, well can't we just agree on a price. In a word, LIBOR has stopped, what is the worth of a LIBOR contract if LIBOR won't be published anymore. It will be hard to agree to that after the fact. What the person, who might have to make some payment and says well it stops, there is no value to this at all. So better to negotiate before than after LIBOR stops.

While some cash products could be negotiated, there are others that would be difficult. So floating rate notes to change the rate would require a unanimous consent of the bond holder currently and that would be very difficult to obtain. Securitizations might have a role for a trustee but there are certainly questions about whether a trustee would be prepared or able to take steps to name a new rate. That's why the work that the ARRC is doing on recommending safer language for cash products is so important and why it is so important to get these contracts with poorer language rolling off so we don't just simply keep repeating the current problem.

MR. HAYDEN: So there is no protocol or addendum being worked on right now to amend these contracts?

MR. BOWMAN: We're lucky in a way. In derivatives there is a history of using protocols and there is a process for doing that which is why ISDA's work is so important. In cash products, there is no scope for a protocol. These are bilateral contracts and so language has to go in on a better language on a case by case basis.

MS. O' CONNOR: Right but we're trying to do it in a different way. By providing these guiding principles of what decent language can look like, we are hoping that people will find that acceptable and while it is not formally called a protocol, I would question if I were in charge of a group of folks who tried to veer off of that or do something fundamentally different. Even though it is voluntary to say well why, what is better about your language and why don't we feed that back then in to the ARRC because then they can improve their own language. So that's what we're hoping for.

I think the opportunity here is you actually, think about the use of technology over time. This is an opportunity where you can actually get to substantially more standardized contracts versus ISDA contracts as well. There is benefit to all participants in the market fine if the catalyst has been LIBOR. But there is truly value here and we should really be thinking about that as well.

MR. HAYDEN: Thank you.

MS. LEWIS: The Chair recognizes Matthias Graulich from Eurex Clearing.

MR. GRAULICH: Thank you, I will have two questions. My first question is what is the rate differential between LIBOR and SOFR and how big is the correlation between LIBOR and SOFR. I think that matters if you look at the legacy portfolios and try to convert the legacy portfolios at some point. My second question is the repo markets usually show spikes on month end, quarter end and year end. How is it dealt with in establishing SOFR to reflect or to manage these spikes which usually turn up in repo markets.

MR. BOWMAN: Okay, your first question was--it will depend on economic conditions, I believe, currently that SOFR which is an overnight rate is around 25 basis points below say three month LIBOR but that can fluctuate over time. That is why ISDA's consultation will be about what is an appropriate spread adjustment, an important part of their consultation. If LIBOR stops, there is no rate like LIBOR to replace it with. So whatever the fallback is you would need a spread adjustment and that is an important part of ISDA's work and the work that the cash products will have to think about in terms of fallback language.

In terms of correlation, that is an interesting question. So if you take a long view and go back to 2000, the main thing most times that moves money market rates is monetary policy. So over the long run, all of these rates move fairly closely together and mathematically you get a correlation of 99 percent between any of these rates. That said, there are differences. So during the financial crisis LIBOR blew out, SOFR would not have. It would have stayed in the middle of the range and gone down slightly. So there are periods where you can see divergence or you could see it during the episode in the U.S. Around money market reform where LIBOR went up or around recently this year where again, LIBOR went up and other money market rates really did not besides term unsecured rates like LIBOR.

Your second question, it is the case that SOFR is more volatile on a day to day basis then say the Fed Funds Affective. But we have experience of this. So the futures contracts that CME is writing or the OIS contracts that LCA will soon clear, they are written on the overnight rate but the floating rate is a compound average of SOFR, say over a quarter. That compound average is historically actually a bit smoother than LIBOR. You don't really see the potential swings in the quarter-end or year-end or month-end in that compound average, it is very smooth. That's what I expect most financial contracts would refer to, some kind of compound average. If you look at the indicative for looking term rate, it too is smooth because of this kind of averaging affect in the floating rate payment.

MR. GRAULICH: Thank you.

MS. LEWIS: The Chair recognizes Jim Shanahan from CoBank.

MR. SHANAHAN: Thank you, I have two questions. The first relates to the work the ARRC is doing. Is there some significant issues being developed because things are being developed in silos. And coordination of methodologies and triggering events that needs to all be brought together. Because the cash markets and the derivative markets need to move together, otherwise we're going to create this huge new basis risk that is going to be really difficult to manage on an ongoing basis.

The second aspect is the legacy contracts in dealing with that, there are a significant number of contracts outstanding beyond 2021 that probably are deficient in terms of rotating to a new language. Is there a way that, especially regulators, can look at some aspect that could create and extend that on passed 2021 to allow more time in transition. Because, I think it is a little short term look to think that we're going to be able to do that, especially given litigation risk and legal complexities that are going to be created. I could see class action lawsuits lined up around the block. That consideration in terms of how a regulator could help do it of if it is maybe a legislative fix. With that, I'll stop.

MS. O' CONNOR: I'll start. So firstly, in the expanded membership of the ARRC, we have all of those silos, if you will, under the umbrella of working on the language that is appropriate and representative for each of the specific underlying products. And it is being driven by experts who engage in the development of those products or the purchasing of those products which is very, very important. As I was mentioning to Bill who happens to chair one of those working groups on FRN's, while each of those cash products are developing their language the expectation is to bring the chairs together then to review the language that each has felt most fit for purpose. And to have an appropriate discussion around where they vary, is there a true basis for that variance or can the language be made more consistent. So that is part of the ongoing discussion.

Clearly if the approach to cash and derivatives is foundationally different there will be basis risk. But I believe it is in the extraordinary best interest of market participants to try to ensure we minimize differences. That means by coming to the most appropriate marketplace outcome as opposed to an individual firm participant, trading body perspective. So there is work to do but now you have a little bit of a flavor for the understanding of what we're trying to achieve.

I think I will turn to David to answer the question on the regulator. But I will say, because conversations often veer to litigation risk. I think that is fair, particularly in the U.S. where there is a lot of litigation risk. But I would posit, if LIBOR doesn't exist and you have no rate and you have no fallback language, what is anyone going to sue on? In fact, the reality is you need to sort of look inward as Bailey was talking about today, why are you not developing an appropriate plan and fallback language that is fair and feasible now. Because we have, we have the benefit until 2021 so that doesn't mean there won't be lawsuits but the reality is, I think, here what the ARRC, what the official sector is offering, what the OSSG and the other committees around the world are trying to do is to say here is a plan to avoid financial stability risk that you, we, all have. I think that's what we're trying to get to if there is further to add.

MR. BOWMAN: Yeah I would add the working groups I am on, almost all the calls. They are not silos, they are talking to each other. So the other working groups on other cash products like loans, have seen the language of Bill's floating rate notes group. And consistency clearly is a goal of the ARRC and it is why we set up the structure to try to achieve wherever we can. I think we can achieve a lot.

In terms of your question, I'm not sure exactly you may have been asking whether regulators couldn't keep LIBOR alive past 2021. I guess I would simply say there Andrew Bailey made clear in his last July speech that they have behind the scenes been helping to keep it stable for a number of years. And that this voluntary agreement through the end of 2021 is essentially the last best effort they had available to them to give up further added period of stability. So I don't think people should assume that there is some magic way for the regulatory community to guarantee that LIBOR will continue to exist past that point. I think he was fairly clear on that.

In terms of legacy contracts, as I noted and you are right, there are some very long, outstanding floating rate notes out there, some securitizations. It is something the ARRC is going to have to think about, there aren't easy answers for those questions. Our goal right now is to basically stop the bleeding, stop putting out new contracts with bad language. And then, I think we will have to turn and see what solutions might be available for someone with a 70 year floating rate note if that will fall back to fixed. We will work as hard as we can but there aren't easy solutions for that.

MS. LEWIS: The Chair recognizes Jonathan Raiff from Nomura.

MR. RAIFF: Thank you and Sandy, thank you for an excellent summary of what the ARRC has done so far. I have two questions and the first is around liquidity. On the question regarding building a term structure for SOFR we can debate whether or not the derivatives market really needs one or the cash market really needs one. I'll point out that cash issuance almost always leads to derivative trades in some form. The two, I would argue, are inextricably linked.

Currently, while SOFR futures have only been trading for a couple of months now, liquidity is quite light. There is very little size that trades and there is really no natural buyers or sellers in the marketplace and certainly not further out the curve. Your comment that you can bootstrap the curve is, of course, correct, but if there is zero liquidity in the long end, that curve becomes somewhat meaningless.

My question for you is there is still tremendous liquidity in the Eurodollar curve. Most market participants are quite active there. What is the impetus for them to change to SOFR as long as liquidity remains in Eurodollars?

My second question eludes to the PAI issue you raised. Clearly you're going to have difference CCP's clearing basis swaps and presumably SOFR swaps at some point. To the degree they use different discount curves and you have a different basis there that too will harm liquidity. Any thoughts about how that could be addressed? Thank you.

MS. O' CONNOR: So let me take the second one first. Both LCH and CME were part of ARRC 1.0 and as part of ARRC 2.0, ICE is on the committee as well. LCH and CME is part of the work in the transition plan of the first committee have both committed to working toward moving on an appropriate timeline to shifting from fed effective as the discounting in PAI rate to SOFR. So that is in flight and agreed and it is going to be based on appropriate timing.

I think when you go back to liquidity, back to my opening remarks, the futures contract has been basically trading for three months. In fact, the liquidity in it as it exists today is equal to or more than, as I said, when Eurodollars were launched. Remember, we are starting a new market based on a new rate that did not exist before April 3, 2018, of this year. So the question is, we also have folks that are participants of the ARRC who are signed up to providing liquidity and building the market. That's part of the commitment to creating something that is a viable alternative for the marketplace to use.

So yes, it is not nearly deep enough yet. And by the way, it only becomes deeper, I think, once you get to the ongoing demand for PAI and discounting. Then when we begin to see real issuance and real loans, for example, being tied to it. And that again, part of our objective is to get corporate treasurers, financial houses, members of government ultimately to begin issuing tied to this new rate because that too then will draw a demand.

So there is an awful lot going on with very specific understanding of how we do think liquidity can build. And then the reality is let's step further if we know that LIBOR has a high possibility of ending in 2021 despite the fact that Eurodollars are currently very liquid. I would pause it that we will see a level of migration of that activity into SOFR and then ultimately if LIBOR is not produced, there will be a question around how will price the Eurodollar contracts.

MR. RAIFF: So if I may, would you advocate at some point, a switch of the PAI to SOFR for non-SOFR contracts?

MR. BOWMAN: That's already part of the Paced transition plan. That is the fifth step of the plan for everything to move over.

MR. RAIFF: Thank you.

MS. LEWIS: The Chair recognizes Bill De Leon from PIMCO.

MR. DE LEON: Thank you. Sandy, thank you for singling me out.

MS. O' CONNOR: It's in a good way.

MR. DE LEON: Yes. I just wanted to bring up, as Sandy pointed out, the working groups on the ARRC are trying to develop language for the replacement of LIBOR when it goes away or if as some point to. I would tend to agree with most here that it is a when not an if. As Sandy points out, we're working to be as consistent as possible to reduce basis risk between different markets and different types of instruments. Although, I think it is unreasonable to expect that there will be no basis risk. There will be basis risks between different instruments and different markets. The goal is to minimize those things.

There are different legal risks associated with different contracts and different instruments. Swaps, for example, are governed differently than cash markets, they are different conventions. So the language that ISDA is working on and yet again we commend their work, they are limited by what they can do in their fallback language which will be different than what applies to cash instruments and different cash instruments will have different fallback languages. So basis risk will be different.

Additionally, our belief is that people will most likely move voluntarily in derivatives. They will not wait for the fallback to occur. They don't want to be stuck at the last minute having the fallback effect for them the change. Whereas, cash instruments, as he talked about if you're in a 70 year floater, you're stuck unless you trade out of it or there is a voluntary change. Given how many instruments there are and how many issuers there are, I think there is going to be a different pace or movement. So I think there will be basis risks no matter how much you'd like it to not exist. You can't synchronize these things so I think that is an important market development to be conscious of.

One thing I do think and Sandy touched on this as did David is the CME, LCH difference. And while the Paced plan put out by the ARRC does have everyone moving to PAI to use SOFR I think it is important that for new contracts that they start using SOFR. So if you have a new contract that has no open interest you should use SOFR as the PAI. Because otherwise, you are creating more legacy problems. I think that LCH is still debating whether or not their SOFR interest rate swap is going to use PAI off of Fed funds or off of SOFR. Whereas CME has declared that they're going to use SOFR. I think that it is important that LCH use SOFR-SOFR, not SOFR-Fed funds because otherwise they're going to end up with a contract that is sort of a bastard contract. I think that is an important thing to consider and as a best practice, we should encourage new contracts not to be in between.

MR. WIPF: David?

MR. BOWMAN: Just to be clear, I want to thank CME and LCH. They have been extraordinarily constructive members of the ARRC throughout its history. They have both agreed and we'll talk about their commitment to the Paced transition plan. On the issue of PAI discounting just for SOFR instruments I think it is likely that in the short term they will come out in slightly different places. That is not a change to the plan it's just a business decision on both their parts. I would say that the ARRC respects both of their decisions. They have consulted widely and made the best decision for their business and their members and their clients. I think the ARRC has really profited from Bill's points of view and I think it has had a positive impact on the discussion around these things. But I do want to make clear that the ARRC itself is quite respectful of where both CCP's have come out at this moment on that particular somewhat minor issue.

MR. WIPF: Other questions in the room? Okay we're going to go to a few questions that we've had that have been submitted. One I want to touch on, Sandy, as we've gone through this first session here we're seeing that clearly that market participants from various parts of the market are in very different phases of progression--whether that be risk management, whether that be what can be done today. I think one of the questions is and you touched on this briefly in your comments about market outreach. Because outside rooms like this we do find that as even these discussions begin, people are somewhat further behind, some further ahead. How is ARRC thinking about this idea because it is certainly a new concept within ARRC 2.0. This market outreach approach and how can we get this educational moving from theoretical to practical to actionable. How is that group going to take that on?

MS. O' CONNOR: So thank you for that, Tom. You're going to hear later from Charles who is co-chair of our Outreach and Communications Committee. I'm sure he'll go through a lot more of that in detail. But first and foremost, and you can see the survey results from ISDA as well. You'll get a sense of who is progressing who is doing what. I would say broadly speaking, the members of ARRC 1.0 are probably the furthest along, as Tom would have said, in their five stages of grief. Because they've gone through the understanding that LIBOR is not fixable, that there needs to be an alternative. The alternative is going to be an overnight secured rate and now really it is a matter of implementation. We've seen across that group sort of their internal working groups being put in place. Enterprise wide programs so they can begin addressing implementation with their own organizations. And by the way, with their commitment to supporting the buildup of liquidity, they've had to launch, if you will, as new products, the ability to transact against anything that is going to be indexed to SOFR. Of course, they also, broadly speaking, need to deal with any of their client contracts in the cash space to prepare for, as Bailey said this morning, what is not a black swan event but a reasonably probable outcome that LIBOR will ultimately cease to exist.

I think with regard to again, over the course of last year with Bailey's comments, you have more participants in the cash markets that have become much more aware of what the risks are. Again, members of ARRC 2.0, probably the second furthest along in their development in understanding and their five stages of grief.

Now, what does it mean for the rest of the world. And the piece that I think we on the ARRC are most focused on is that $10 trillion of activity that is occurring outside of derivatives. So we have engaged some of the trade associations who have that type of membership so that we can begin not only educating but also potentially providing recommendations on how they might think they can, in their firm, become more prepared for this eventuality. We have engaged in working with, again, trade associations or conferences, David and I, and members of the communications team, to talk about where we are, what needs to be done, what the risks are. Walking people through that fixing LIBOR is not the solution but the reality is moving to an alternative risk free rate.

Then we are preparing, if you will, a consistent set of slides and documents. Now beyond that, the ARRC itself has hosted three roundtables. Our next one will be next week, that will be our third. We've engaged in public consultations, we've taken feedback on our website, we make all of our minutes public. ISDA who is working on this fallback protocol language has just put into the marketplace, a consultation for feedback. So we really are trying to make this as open, transparent, communicative and feeding information in and out as we possibly can. And we're always taking recommendations to make it better. So that's how we're going about it.

CHAIRMAN GIANCARLO: Sandy on that

point, you and I have spoken about this, the importance of taking this conversation out of the New York Washington corridor and taking it out into the rest of the country. We at the CFTC make just as we're doing today through the good offices of the MRAC, use this as an opportunity to get the word out about this inevitable transition. We continue to offer our good offices whether it is here in Washington or our offices in Chicago or Kansas City or use of our podcast series and other means. And I've also had a good conversation with David last week and recently with Randy Quarrels this week about using the Fed's presence in its 12 districts for the communications team of ARRC to get the word out.

One of the things that we at the Commission have been doing the last few years is realizing that if we want to speak to our ag interest it is not from Washington but it is out in the heartland. I would strongly recommend that the ARRC also take advantage of the good offices of the CFTC or the Fed to get the message out in

Minnesota, in Kansas City, in Dallas and through all the regional Fed offices. It is really important that the message get out. This group gets it but you've got to get down into the small and medium sized financial institution mindset and let them know about what is happening here. Strongly take advantage of our offices and working with the Fed, those offices as well.

MS. O' CONNOR: So we're taking all good ideas so thank you for that, Chairman Giancarlo. And thank you for hosting this and the forum because I think it is these very important kinds of conversations that raise awareness and it is great that we're raising awareness now in 2018 because we do have until 2021. But you and I both know it will be like that so thank you for that and the offer of that.

MR. BOWMAN: While Tom is conferring, let me just say I certainly agree and I think it is why it is important that we have a number of associations on the ARRC not just SIFMA. But Government Finance Officers Association representing a lot of the municipalities that issue LIBOR products that's an important group. Independent Community Bankers Association which most of the members are not in New York or Washington, D.C. by any means. American Bankers Associations, National Association of Corporate Treasures and with the Bureau of Consumer Financial Protection we're also reaching out to consumer groups. So it certainly is a goal of ARRC. Many of those groups, what they want is for someone to tell them what they should do. They don't want to be expected to reinvent the wheel and come up with their own strategies so they really in many cases are looking for guidance from the ARRC which will be very useful to provide.

MR. WIPF: One question we've got here. Are there particular areas of focus for the CFTC? Where in this dialogue can CFTC add value today?

MR. BOWMAN: Sure. Well I would note that the CFTC has already offered tremendous value. As Chairman Giancarlo noted, they have been at ground zero of this issue since the beginning. He has certainly continued in that leadership so I want to thank them for that. I think Sandy might have some thoughts. The ARRC today is releasing a letter to US regulators around Title 7 issues. There is a need, I think, none of us would want to pose unintended hurdles on to people either adopting the ISDA protocol or moving away from LIBOR to SOFR is that's appropriate for them. So the ARRC has identified a number of areas where regulators could help round considerations for clearing. Obviously CFTC is front and center at all of those issues.

MR. WIPF: One other question we had here. Sandy, you touched on this and I think we've spoken a lot about the depth of SOFR and the volume and the administrator and everything else around it. I just think for the benefit of the broader group, could you just go quickly just how ARRC 1 did arrive at that? What were the other choices, what got them there? I think this is just one more question around SOFR. In some of your other comments outside of this room, you have talked about this concept of not running away from LIBOR but running to SOFR. I was hoping you could touch on that.

MS. O' CONNOR: I'm a glass half full kind of person. I do believe it right? So the whole effort started out, like you said, running away from LIBOR because it is no longer usable for the extensive contracts that we have. But now that we have this lovely SOFR rate, it really again, going back to on average it's $754 billion worth of daily repo activity. The deepest, most liquid repo market in the United States, I would probably argue probably the world, but I haven't fact-checked that.

So you look at that and we are offering up to the marketplace, granted because something is going away, an opportunity to use a better rate that is all transaction based that is produced and prepared by the official sector. Right, and ultimately, that will be much more durable over time because it has a broader swath of market participants. So back to running towards something, what did we look at.

First of all, we looked for some term rates. Again, it suffers from the same issue that we see with three month LIBOR. One, two, three trades a day and sub $500 million so that certainly wasn't a good replacement. We looked at things like the IOER, rather the Fed effective activity and under the guidance of the official sector didn't want to go to a policy rate. And then you also looked at what was trading in the overnight rates and, in fact, if you look at Fed effective, which by the way, is only $80 billion or so a day. Only $80 billion dollars or so a day and really amongst only a handful of market participants, most of whom are only doing it because it is an arbitrage opportunity because they can't, in fact, place their money on deposit with the Fed itself. So they're doing it through the intermediaries. So those are some of the choices.

And then generally, one of the other questions that comes up, well why didn't you just pick the T-bills, that's a good a short term rate. Okay $13 billion worth of average activity. Again, not a large number. More than LIBOR but only $13 billion and it is reflective of government financing. Not sort of general market financing and it is highly technical and highly seasonal so you have quite a bit of volatility that could be around something as simple as supply and demand dynamics given government issuance.

So those are the handful of items that we looked at. All the usual suspects, as you can imagine. And we came to the conclusion that where does real financing real broadly occur. It occurs in that secured market. Not shockingly, every other risk free rate committee around the world that has been set up has chosen overnight rates because that is where the activity is. And secondly, you've got a split between some choosing unsecured, some choosing secured. That's reflective of the dynamics of those marketplaces. Back to the comment that Bill made, you know what, there will be more basis risk. It will be different because we will not all have collectively around the globe, currency denominated unsecured LIBOR. There will be a variety of choices, they will be secured versus unsecured which is more reflective of what is appropriate for a local market. Then, by the way, it's consistent with Bailey's remarks today which talked about Euro currency markets as a unit are not really the same as they used to be.

MR. WIPF: Thank you, Sandy. One question, David, with the reconstituted ARRC with the new diverse membership. Different voices heard from different products being dealt with. What are a couple of the big priorities that you're looking forward to over the next several months?

MR. BOWMAN: Well, the ARRC's goals for this year are to develop SOFR markets. Three months in, I'm very happy with the progress there. People do forget that we are just only three months in. But the number of things that have been accomplished have taken other products years. I believe it took the SIFMA--MUNI Index 20 years to get on FASB's list and FASB was already working towards including SOFR even before it began being produced. So a lot of great work has been done in terms of ramping up SOFR derivatives markets as quickly as can be.

The other really big push that the group is doing this year is to make recommendations on cash language to help compliment the work that ISDA is doing and to try to be as consistent as they can. Again, they viewed that as crucial because the sooner you stop the bleeding the quicker you can let that roll-off begin and the safer everyone is going to be if they want to keep using LIBOR.

And then I think I am still having discussions with a lot of cash market participants offline about what it would take for them to begin offering issuing SOFR products. I'm hopeful, again it would be unreasonable to expect to have seen a lot just three months in two months of futures trading. I think a lot of people are considering that and as they grow familiar with the ARRC and with SOFR and the kind of way the futures market and the way the term rate might behave, I am quite hopeful that we will begin to see some cash product issuance.

MR. WIPF: Thank you, David. We're just going to go to the phones quickly, any questions on the phone? Okay. Just to quickly wrap up here as we head around the first turn, we've spent a lot of time on the history of this, how we arrived here. I think a lot of discussion, good discussion about the importance of fallbacks and understanding of the current risk landscape that we all have as market participants and what we should be doing today. I think we also have just wrapped up with the understanding that SOFR is so good, I guess Sandy, is the best way to put it. We're going to just try to wrap here and move to our next panel which will be, what are the things that we can now do in the here and now to begin to move this forward from where we are today. So I'll pass the mic back to Alicia.

MS. LEWIS: Okay at this time, not in keeping with the meeting agenda because I think it is 12:45, we will break for lunch. We will return at 1:30.

(Recess)

MS. LEWIS: It is a pleasure to call the meeting back to order. And now we will have the second panel of the day, the Latest Developments with LIBOR, SOFR, and SOFR derivatives.

Actually, I'm looking for our last panelist. Is Phil Whitehurst -- Phil Whitehurst in the room?

Well, we'll get started and he'll just join in. I would just like to ask that all the participants, all the members, as well as our panelists, if you can please speak into the mic. We did get some feedback from folks in the room saying that there's difficulty in hearing us. So please speak into the mic. Thank you.

And now I'll turn it over to Tom.

MR. WIPF: Okay, thank you, Alicia. We're just going to get rolling here with our next panel. As we mentioned earlier, we did a lot of work today in the first panel to kind of get us up to speed on where we are, what the current risk landscape looks like, and now we're going to sort of move on to what's taking place actually in the here and now. So the themes of this panel will be improvements that have been made to LIBOR, benefits and challenges of SOFR implementation, current experience with SOFR futures and plans for cleared SOFR swaps, liquidity in SOFR derivatives, the future of LIBOR in relationship with SOFR. And we're going to begin; I'll introduce the panelists and we'll just get right into it.

So first, Emma Vick, who is the director of ICE Benchmark Association. We have Agha Mirza, who is a managing director, global head of Interest Rate Products at the CME Group and an ARRC member. Scott Rofey, managing director of Goldman Sachs and also an ARRC member. And Phil Whitehurst, who just got here. Just on time, Phil. Phil Whitehurst is an executive director of Products with the LCH.

So we can begin. And we can kick things off again. We'll do three to five minutes with each panelist and then we'll roll into questions. And again, use the mic, and you know how to get called on by Alicia.

So why don't we start with Emma?

MS. VICK: Thank you. First of all, I would like to express my gratitude on behalf of ICE Benchmark Administration for the invitation to be here today to talk about the improvements that we've made to LIBOR. I'm very pleased to be here myself, so thank you.

What I would like to say first and foremost is that LIBOR today in 2018 is so very different from LIBOR in 2008. I think we're all well aware of the history of the problems with LIBOR. There was a complete lack of oversight and governance. However, now at IBA we have put in place very strong governance. We are authorized and regulated by the Financial Conduct Authority in London, and all the LIBOR banks are subject to very stringent regulation as well.

We have put in place a lot of new technology. We have a lot of surveillance technology, a team of dedicated surveillance analysts who are ex-market traders who really understand the market and they examine submissions all day, every day. So we are happy that we are producing a benchmark that has integrity.

And, of course, I think everyone will be aware that the UK introduced legislation which makes any attempt to manipulate LIBOR a criminal offense.

So our number one job every day is to produce LIBOR, to make it the best rate we possibly can. Behind our technology and our teams we have an independent board. It is made up with a majority of non-executive independent directors, and we have the LIBOR Oversight Committee, which helps oversee what we do on LIBOR; the benchmark methodology, our regulatory processes, and procedures; and also, very importantly, the LIBOR code of conduct for submitters.

The committee has very broad

representation from the industry. It has finance professionals, associations, market infrastructure providers, and also, representation from the panel banks.

So, our number one job, as I say, is integrity of the benchmark every day. Number two is evolving LIBOR. When we became the administrator in 2014, that was part of our mandate, to evolve the benchmark. So we have produced after considerable consultation with very many stakeholders -- sorry. We have produced a waterfall methodology, which is a standard methodology that banks will be required to use. At the moment, all banks use a methodology that they have devised internally. And for us, it was important to introduce some standardization.

So we have the waterfall methodology, which has three levels. The first level is the volume weighted average price of eligible, unsecured borrowing transactions. If a bank has the eligible transactions, they must use them. If they don't have them, they move on to level two, which is using historical transactions and also market data. Again, if they can make a level two transaction, they have to do that. Only if they cannot make a level one or a level two submission do they move on to level three, which is market databased expert judgment.

Now, what I would like to emphasize about expert judgment is that it is not some sort of guestimate that an individual within a bank produces. It is very thoughtfully devised, thoughtfully articulated, carefully documented, and fully approved within each bank's oversight function. Then, when it's agreed within their oversight function, IBA agrees that methodology. And once we have agreed to methodology, a bank cannot diverge from that unless we give our specific consent to that. So expert judgment is exercised within a very tightly set framework.

So, our overall approach is therefore designed to produce a robust benchmark that is data driven to the greatest extent possible. And we also seek to de-risk the process for the banks as much as possible.

But, of course, not withstanding these improvements, we all know that LIBOR faces an uncertain path. In the discussions this morning there was quite a lot of mention of Andrew Bailey's speech last year, July last year, in which he said that there were severe concerns about the sustainability of the benchmark because of the reduction in wholesale borrowing by LIBOR banks. And we recognize that there are some currency tenor pairs which do not have a lot transactions, and that is why we have the waterfall.

Mr. Bailey also stated that the FCA would no longer use its powers of influence or compulsion for the LIBOR banks to make them remain as submitters beyond the end of 2021. And that's his speech last year, not his speech this morning.

As you can imagine, after his remarks last year, IBA had a lot of market participants expressing concern to us and asking us to try to find a path for the continuation of key LIBOR currency tenor pairs beyond the end of 2021. And what we're doing at the moment is we have embarked on surveys of the market. We've started one with panel banks to find out what currency tenor pairs they would regard as crucial to their businesses beyond the end of 2021 and for which they would be happy to work with IBA to try to find a path forward.

We are imminently about to launch a survey of financial institutions and large global banks, and in a few weeks' time we'll extend our survey out to end-users all our license holders, and it'll be available through the Internet. And all of those surveys will close in the middle of September. Following that, we will make a public announcement as to the results of the survey and which LIBOR tenors we will work to seek to continue and which LIBOR currency tenor pairs we will not be publishing after the end of 2021.

So the purpose of those surveys is to guide our work and to seek that path forwards. And we believe it's a beneficial path for stakeholders because it essentially does four things. It provides a choice of benchmarks, which we support. It provides a benchmark that incorporates bank funding costs, which is particularly important for lending arrangements. It gives time for new alternative rates to be adopted and to gain liquidity. We heard this morning that good progress has already been made but that there is still a place to go. And finally, it helps to address the very large number of legacy contracts that will expire after the end of 2021.

We can't make any guarantees that we'll be able to do that, and I think Andrew Bailey was very clear in his speech this morning that he regards the discontinuation of LIBOR as not being a black swan event.

And so we are looking to the industry to come up with a path for voluntary agreement for those currency tenor pairs that they regard as critical. And we would seek to have that agreement in place until probably the minimum of the middle part of the next decade. But as I say, there are no guarantees that we will achieve that.

My final remark I'd like to make, please, is whether LIBOR and SOFR and the other rates can exist together. In our view, yes, they can. We fully support the development of alternative interest rate benchmarks and we believe that they can sit together, side by side, but serving different customer needs.

And that concludes my opening remarks. Thank you.

MR. WIPF: Thank you, Emma. We'll go to Agha now.

MR. MIRZA: Thank you, Tom. On behalf of CME Group, I would like to thank the commission for the opportunity to participate on this important issue.

CME Group has been deeply involved in the interest rate benchmark reform initiatives for several years. We are a member of LIBOR Oversight Committee, as well as a member of ARRC and some of its working groups. We believe that development and introduction of SOFR, a fully transactions-based, interest rate benchmark consistent with the IOSCO principles is highly constructive for the marketplace.

CME launched SOFR futures on May 7th. These were designed with the benefit of extensive consultation with the marketplace. SOFR futures are trading alongside CME's highly liquid Eurodollar Fed Fund and Treasury futures with margin offsets available. Since the May launch, over 60 market participants are active and over 70,000 contracts have traded. Unusual for new contract offerings, the participant base is highly diverse, including banks, proprietary trading firms, and buy side institutions comprising both asset managers and hedge funds. Average daily volume, as you heard before, is around 1,700 contracts, or approximately $5 billion in representative notional terms.

Open interest has grown steadily and continues to grow and has reached over 12,000 contracts before the joint expiration signifying over $40 billion in representative notional terms. A term structure of contract interest rates is available with tied course out to 18 months or sometimes two years through early 2020. Bid ask spreads in the first year are frequently at the minimum price increment of half a basis point.

Next, I would like to share our views on how the SOFR futures market will grow further. Over long-time spans, months or quarters, SOFR dynamics are positively correlated with those of other familiar money market interest rates such as Fed funds or LIBOR. But over shorter intervals, days or weeks, SOFRs behavior is financially distinct. This enables SOFR futures to trade alongside the highly liquid Eurodollar and Fed Fund futures as a natural complement to them. With enhanced spread trading capabilities, we are CME Globex's intercommodity spreads.

In addition, there are margin offsets of up to 85 percent between SOFR futures and adjacent Eurodollar or Fed Fund futures positions which provide capital efficiencies. The SOFR futures markets are supported by well over a dozen market makers in our liquidity incentive program. SOFR futures actionable course are also generated by Globex, CME's electronic grading system implied pricing functionality using intercommodity spreads and very deep order books in Eurodollar and Fed Fund futures.

Additionally, many important market participants have agreed to provide liquidity in the privately negotiated block trades in SOFR futures. These are published on the CME website, and they include Alston, Citi Group, Credit Suisse, Goldman Sachs, J.P. Morgan, Morgan Stanley, Nomura and W.H. Trading. Overall, clients have indicated that SOFR futures will have immediate investing, risk management, and hedging applications for repo and relative value traders. We hope and expect that the liquidity generated on the CME Globex electronic trading platform will combine with these initial applications to foster a liquid SOFR derivatives market over time with wider interest rate benchmark applications.

Finally, I would like to share an update on our plans for CME-cleared SOFR swaps. After careful consideration and several detailed conversations with a variety of market participants, CME has decided to move forward with SOFR price alignment amount PAI and discounting of our cleared SOFR OIS and basis swaps targeted for September 2018 launch subject to regulatory review. While this decision differs from the original vision for SOFR swaps as expressed in ARRC's Paced Transition Plan, the encouragement of numerous market participants has convinced us that by expediting one step, we will put the market on the best path to wider adoption and application of the SOFR benchmark.

Thank you.

MR. WIPF: Thank you, Agha. And now if we could, Scott, from a perspective of a Southside firm and implementation, if we could, Scott Rofey.

MR. ROFEY: Sure. Commissioners and committee members, thanks very much for inviting me to participate on the panel. I thought I'd share some thoughts along three main topic lines.

First, the high level description of SOFR, how it's fundamentally different from LIBOR and what people mean when they talk about term rates and term structure.

Second, a quick discussion of the potential attachment points for SOFR-based swaps in the derivative markets.

Third, an attempt to put LIBOR transition into a risk management construct, which I think is a helpful way to evaluate potential outcomes without having certainty about the probability of anyone.

So SOFR is a broad measure of the interest rate trade on a very large stock of overnight U.S. Treasury financing on a given day. It encompasses the stock of trades between known counterparties intermediated by the Bank of New York Mellon, known as tri-party repo. GCF transactions done through broker intermediaries and facilitated through a DTTC clearing service. Plus, bilateral trades referencing either GC or specific securities done via the FICC's delivery versus payment or DVP service. There is a trimming mechanism on DVP to knock out some of the influence of special securities, which makes SOFR a very valid index, a very broad-based, short-term interest rate index.

While it is true that understanding the repo market is helpful for intuition around SOFR, that is not much different from the fact that insight into overnight unsecured funding needs, access to administered rate facilities helps intuition around fed funds affected, monitoring bank issuance conditions and short-term money markets is important to understanding LIBOR.

Surely, the best argument for SOFR as a LIBOR alternative is the robust transaction volume. Repo is an enormous part of the short-term interest rate product market, and as such, it is a great indication of money market rates and is less vulnerable to the subjectivity and administration challenges around LIBOR.

Just as the unique qualities underlying

LIBOR, chief among them the term credit extension component can make LIBOR useful or somewhat mismatched to risk taking or risk management needs. The same can be said about SOFR. It is obvious that no one benchmark will be perfectly suited to all end-user needs. The degree to which market participants value things, like the term unsecured credit component of LIBOR as a necessity could govern part of the will for market transition.

This is a good segue to a discussion of term. It is important to separate two different term-related topics. The first is what I would call the term rate topic. This describes the fact that SOFR is an overnight rate and LIBOR is often a three-month rate. I'd further break this difference down into two components. First, an overnight rate obviously only encompasses rate dynamics for the coming day, whereas a three-month rate includes information about things like future monetary policy actions and term risk premiums. Second, LIBOR is specifically representative of an unsecured financing and a three-month period of unsecured financing compared to an overnight period that includes collateral security which can create potentially important interest rate dynamics.

SOFR can easily provide exposure to a similar maturity term as LIBOR. SOFR derivatives are likely to accomplish this through structures that observe and compound interest daily and pay it quarterly. This limits the difference to a situation where LIBOR is exposed to an a priori point in time assessment of near-term rate dynamics and SOFR to a realized path of short-rate dynamics over the same period.

When rate risk is spread over many observations, as is the case for a five-year interest rate swap or for a seven-year mortgage, there is no clear need for markets to prefer one method to another. Regardless, if end-users insist on a single point in time a priori exposure to SOFR over a three-month term, such a rate could be constructed from the derivatives market. But were it to become more of a benchmark product than the overnight rate compounded, it would denigrate somewhat the value of the high transaction volume underlying the SOFR calculation itself.

The second part of the term conversation is a more palpable and pressing issue. There can be arguments that the LIBOR swap market is used to hedge exposures that themselves have term credit components, such as an unsecured loan or bond. One might expect unsecured term rates to trade above secured overnight rates, and both the excess yield and the potential to track credit risky product more closely could serve as valid arguments for end-users to prefer LIBOR derivatives to SOFR derivatives. Or at least, to consider passing on costs associated with hedge ineffectiveness to financial market end-users if they had to attach SOFR risk management to LIBOR-like risk.

While this can clearly be the case, term derivative markets don't just react to fundamentals like the credit component inherent to

LIBOR. One need look no farther than the negative spreads between LIBOR and long-dated treasuries that existed in the 2016 and 2017 experience to draw a conclusion that there is a strong supply and demand aspect to the derivatives market as well. For instance, many end-users allocate investable funds through a mix of funded investments with various maturities and use derivatized duration as an overlay without strong regard to possible credit dynamics.

The second term-related topic is that of term structure, which is to say how far out along a yield curve will SOFR trade. Can it span maturities and trade liquidly out to say the 30-year point? How long is it going to take to get there? Clearly, it needs to get there in order to be a good alternative to LIBOR. In fact, it needs to get farther than there. It needs to grow an options market a cross currency basis market and it needs to proliferate into wholesale and retail financial products.

The birth of the futures market is

showing open interest and three-month contracts out to about the 18-month point, much of it concentrated in one year and shorter maturities. This is a good segue to my second topic, which is attachment points.

It makes plenty of sense that the SOFR markets should trade out about a year in its infancy for two major reasons. The first is the holding period of risk. Were SOFR swaps or futures to experience illiquid yield movements as a result of a large end-user trading in one direction, that could require tactical risk-taking on the other side and it makes sense that for the tactical risk-taking community a shorter holding period is better than a longer holding period.

The second reason is that the largest fundamental comfort with SOFR valuation right now and withholding some risk over days rather than minutes if necessary probably lies with repo and short-term interest rate trading desks. It's common in markets for those desks to have prominence over 18- month or shorter maturities.

I'd note that it's a local tailwind for the adoption of SOFR that short-term interest rate dynamics have been very vibrant recently with tax reform, increased issuance, and monetary policy actions all driving.

So how does SOFR find longer maturity attachment points? A handful of near-term and longer-term catalysts, as well as some potential headwinds, some of which interact with regulation come to mind. Three developments that could manifest in the near term would be the issuance of a SOFR-linked wholesale product, like a bond; the potential for SOFR to emerge as the most preferred asset swap vehicle for U.S. Treasury notes given that its underlying characteristics are likely closer to that of a treasury than either LIBOR or Fed Funds; and in the longer term, CSAs and clearinghouse PAI can generate SOFR risk through bilateral agreements to change the interest rate paid on cash collateral and to change its equivalent in cleared swaps trading.

We should be cognizant of the fact that

the high liquidity of LIBOR in the Fed Fund swap markets relative to SOFR is a tough nut to crack. Without a tangible forcing mechanism with little perception of a first mover advantage, and with the need to cross what might be at first wider bid offers for significant size risk, SOFR has a hill to climb.

It is important for it not to have disadvantages in addition to being an asset market. A handful come to mind. Among them the ability to clear SOFR swaps, the ability for dealers to achieve good notional compression. It is clear that even with good compression utilities, trading a third short-dated swap market will grow notional at the dealers, and through the notional-based counterparty risk exposure calculations and the complexity calculations in the basal frameworks, there is a headwind here.

There are also setup costs, and I think these are relatively greater for the buy side than the sell side. Since SOFR follows a lot of the same conventions as Fed Funds OIS, setup for the dealers has not been free but it's not been a big challenge.

There is a huge stock of LIBOR risk and almost no stock of SOFR risk. In the beginning, the reasons to trade need to be very organic. And this leads well to my last topic, which is that of transition planning.

As a trader looking at a range of possible outcomes, I can't help but frame the transition for myself in the context of a risk management framework. In all the possible outcomes, how would my business fare? Where is the risk? A good way to start is to probe the tails of the distribution of possible outcome and decide how best to risk manage them.

The market's attachment to LIBOR is very strong. The attachment to Fed Funds is also strong but it is clearly a secondary benchmark. The attachment to SOFR is just beginning. How is this going to change?

At one end of the distribution, LIBOR could go away quickly. This could come around the time of the 2021 time horizon that has been a market focus. It could come sooner or later. At the other end of the spectrum, transition could fail to take hold due to entrenchment of the current indices in market participants placing less weight on the setting vulnerabilities. In the middle lies the sort of outcome envisioned by the ARRC's Paced Transition Plan, one where the market will make a full transition in an organic way. SOFR could become the primary benchmark. It could supplant Fed Funds as an OIS index. It could coexist with a reduced stock of LIBOR business. It could replace LIBOR all together. A good risk manager needs to be able to prepare for all of these eventualities.

In the LIBOR cessation, which is the most disruptive of all the outcomes, the mind goes to two places. What do my contracts say about fallbacks? And what would I do to measure my risk impact and replace rates exposure where possible? It's clear that fallbacks should be an urgent focus, and they are. It's also useful for participants to ensure that they can access alternative instruments like the market for SOFR OIS, futures markets, repo markets, all of the sources of unfunded rates exposure.

All major derivative users are probably to varying degrees addressing this issue by convening working groups among their key internal constituent departments. From what we have seen in markets, it is clear that some end-users are also already contemplating transition probabilities in some of their trading activity. We've seen marginally more trading of alternative products in users business mixes, whether that be OIS swaps, treasury futures, or treasury forwards.

That said, it's clear that the market thinks that the modal outcome is somewhere between the organic and orderly transition and the possibility that LIBOR stays on as a major market index. We know this because trading in LIBOR-based contracts is still highly liquid at high volume, continuous, and broadly used.

I'll stop there and be glad to

participate in the open discussion.

MR. WIPF: Thank you very much, Scott. We're going to move forward now to Phil Whitehurst from the LCH.

MR. WHITEHURST: Thank you, Tom. Commissioner Behnam, Chairman Giancarlo, members of MRAC, thank you for the opportunity to participate in today's important discussion.

Through SwapClear, LCH is a leading provider of clearing services to the global derivatives market. On average, each day SwapClear clears four to five trillion worth of swaps across 21 different currencies. So far in 2018, just over 50 percent of this volume has been denominated in U.S. Dollars, which is an average daily volume of around $2,400 billion. Of the dollar-dominated contracts we clear, average daily volume for contracts referencing U.S. Dollar LIBOR are around $1,500 billion. So that is approximately two-thirds of the dollar volumes that we clear and one-third of the total contracts that we clear. These numbers illustrate the relevance of dollar LIBOR to our business and to the U.S. Derivatives market as a whole.

By contrast, we do not currently clear SOFR swaps. The ARRC identified in summer of 2017 as has been referenced by many already today that SOFR was its recommended alternative to U.S. Dollar LIBOR. The contrast in trading volumes illustrates the gap that needs to be bridged. To fulfill its role as a LIBOR alternative, SOFR needs to be adopted as an actively-traded swaps benchmark. With this in mind, ARRC developed its Paced Transition Plan, and after considerable discussion and debate, formally adopted it in October last year. This plan seeks to enable industry-wide adoption of the SOFR benchmark and its adoption in derivative contracts specifically.

The availability of cleared SOFR swaps is a very important step in ARRC's plan. There were important precursory steps. For example, the publication of SOFR itself which began in April and the development of a definition to allow SOFR to be used in swaps contracts. And we thank ISDA for its work in providing that in May.

Following those informed steps, we intend to begin clearing SOFR swaps this coming Monday, the 16th of July. We're doing so in support of ARRC's plan and we're very pleased to be delivering this capability approximately six months ahead of the original Q1 2019 target date for that.

Now, the picture of the dollar derivatives market would not be complete without a mention of a second important benchmark, the Fed Fund's effective rate or Fed Funds. Referring back to my earlier figures, swap contracts referencing Fed Funds make up the majority of the one-third of dollar derivatives that we clear that are not linked to dollar LIBOR, and that's an average daily volume of around $900 billion.

SOFR has not been identified as a recommended alternative to the Fed Funds effective rate. While there is no doubt that the market volumes underlying SOFR are much larger than those underlying Fed Funds and that its closer cousin, OBFR, also has greater volumes, there is no question that the market underlying Fed Funds is sufficiently robust as to satisfy the tests associated with IOSCO's principles for financial benchmarks, which as Commissioner Quintenz mentioned earlier are the basis of U.S. Guidance on benchmark suitability.

Now, as well as being the benchmark referenced in one-third of LCH's dollar volumes, the Fed Funds effective rate is also the rate at which variation margin balances are compensated. And that goes both for cleared swaps and also for noncleared swaps. The use in this context extends to all dollar derivatives, not just those with a contractual reference to Fed Funds. It will be used in this context by LCH when we launch SOFR swaps clearing next week.

Now, use for PAI discounting does give rise to a risk known as discounting risk. This is distinct from the projection risk associated with being the reference for floating leg payments. This means CCPs have exposures to the Fed Funds effective rate even if they only clear LIBOR contracts. This is relevant, and it's particularly relevant in default scenarios. So specifically, in a CCP default management process, we wish to neutralize the open risk in a defaulter's portfolio. The discounting risk in such a portfolio can be long dated and can amount to several million dollars per basis point. In preparation for a successful auction, the CCP will want to hedge this sensitivity. We believe that we have a sufficiently deep and liquid Fed Fund swap market across the full yield curve in which we can do this.

I've laid out these considerations because they help to explain why the eventual move to PAI and discounting with SOFR under ARRC's Paced Transition Plan are so important. We remain committed to supporting ARRC's Paced Transition Plan. The target date for the introduction of SOFR PAI and discounting is Q1 2020, but we are, of course, in constant dialogue with the market regarding progress towards that capability.

The ultimate transition to SOFR being utilized as the dominant benchmark for PAI and discounting purposes must be market led. This will organically lead market participants to run down trade populations discounted at Fed Funds, and where necessary, convert them into SOFR discounted equivalents.

Indeed, it is the greater volumes in the underlying market for SOFR that give rise to its utility and ultimately will drive its widespread adoption.

As noted in our second report issued earlier this year, SOFR reflects an economic cost of lending and borrowing to the wide array of market participants active in these markets, including not only broker-dealers but also money market funds, asset managers, insurance companies, securities lenders, and pension funds. We remain on course to deliver to ARRC's plan and to support the market and the industry in this important work.

That concludes my opening remarks. I

look forward to participating in the forthcoming discussion.

MR. WIPF: Thank you very much, Phil. We will now move to questions from MRAC.

MS. LEWIS: The chair recognizes Biz Chatterjee from Citigroup.

MR. CHATTERJEE: Emma, if I could turn to you. You mentioned about, you know, life beyond 2021, and obviously, the regulatory reform coming in the future about decisions about LIBOR not officially existing. I think there's been some discussion, questions, thoughts about if it doesn't exist through the official sector but you receive requests for voluntary contribution and for people to somehow manage or roll off the legacy risk, have you had any thoughts or considerations within the organizations about how you would support that or any discussions in the regulatory forums about whether, you know, there could be a possibility of that existing?

MS. VICK: Thank you. As I mentioned, we are embarking on a fact-finding exercise at the moment with the surveys. Whether we can continue LIBOR beyond the end of 2021 depends very much on the banking industry's support. A number of participants have told us that they really need LIBOR and that they would like to continue to support it. We will wait for the results of the survey to see which way we go. If the survey is positive towards people wishing to continue to support LIBOR, we will seek to find a way.

Now, I know there's been discussion of a sort of zombie LIBOR where there's a slow attrition of panel banks. I don't actually think that will happen because I think if we get the voluntary agreement, it's because the banks really want LIBOR. And I think they will stick with it until the alternative rates have the requisite liquidity, which as I say, we think LIBOR will be needed at least until the middle part of the next decade through some sort of voluntary agreement.

I'm sorry; you also mentioned about the regulatory aspect of it. We are always in very close contact with the FCA as our regulator and other regulators on everything that we do.

MS. LEWIS: The chair recognizes Jonathan Raiff, Nomura.

MR. RAIFF: Thank you. Just one quick question for anyone who wants to take a stab at it.

Do you have any concerns or do you worry about how counterparties can be incentivized to renegotiate CSAs to account for SOFR collateral versus OIS?

MR. ROFEY: Yeah. I think the chief concern there is that the credit support index is a bilateral document and it's incredibly widely held, which is to say that, you know, every broker-dealer has thousands of these documents across the landscape. And so I think the good news is that if CSA renegotiation--and to be clear, I think what you're referencing here is that in current CSAs, it's very common for the interest rate paid on cash collateral should cash collateral be posed as what most people know as variation margin, if it's cash, then the interest rate is usually credited at Fed Funds. And it's certainly possible that if bilaterally counterparts were willing to amend that to SOFR, that anytime a future cash flow in a swap were to gain or lose value, one would have to discount it in SOFR. And that would force liquidity into the SOFR curve.

I think the good news here is that although it's true that there are many, many parties that trade in the market and have CSAs, there is a critical mass, a high quantum of concentration amongst parties who use the market very, very frequently. And I think that the key would be that if CSAs were to be a part of transition, to identify the ring, if you will, of end-users that is both diversified enough in the way that they access derivatives, meaning a hedge fund uses derivatives differently than an insurance company, differently than a bank--if you got a critical mass of large end-users that were diversified across a suitable number of utilities, then I think it's the sort of thing where you could go through protocol frameworks or keep timing of amendments tight and have that be a part of the liquefaction of SOFR.

MR. RAIFF: Thank you.

MS. LEWIS: The chair recognizes Stephen Berger, Citadel.

MR. BERGER: Thank you. Two questions. First, interested in your perspectives on whether you see liquidity developing in the cleared versus uncleared iteration of SOFR swaps. And I guess I suspect I know what the CCP's answer is going to be, so I'd be interested in, Scott, your view on that topic whether, you know, both will grow or whether there will be more growth in one versus the other?

Then I guess the second more directed toward the CCPs, how will SOFR swaps and other SOFR-based derivatives fit into portfolio margining programs across the interest rate complex generally?

MR. ROFEY: Great. So I'll take the first one. As it relates to cleared versus uncleared, I think to a large extent the liquid market for swaps has moved into a cleared regime. And of course, the cleared regime has a number of advantages from a regulatory capital perspective. And so my sense is that the dealing community will look to use the clearing utility where it can. It also, obviously, has lots of macro prudential benefits that, you know, recognize and would want to keep.

That being said, you know, many of our end-users may have reasons to prefer a bilateral trade. And I think all the dealers, you know, as customer service industries, will have to take that into account where they provide liquidity.

And the last thing I would say is in a nascent market, growing an exposure, either in a clearinghouse or growing an exposure bilaterally, or for instance, having an offsetting exposure in a cleared pool versus a bilateral pool has costs in the form of initial margin posted to both entities. And so I would imagine that that will also factor into the decision as to the will to try to aggregate trading in a single place.

MR. MIRZA: So I can take the second question, how will SOFR swaps fit in with portfolio margining?

You know, as you may know, at CME, the Fed Fund-based OIS swaps and LIBOR swaps are part of the same risk netting pool, same guaranty fund. The SOFR swaps will also be part of the same risk netting pool and guaranty fund. So net margin netting there will be seamless.

As far as portfolio margining, at least at CME, we use the term client portfolio margining which provides the ability to participating clients to offset futures risk versus swaps. For that, clients have to port positions, futures in particular, to the OTC portfolio given a setup and given approvals. The plan is for us to include SOFR futures in the coming months and quarters subject to regulatory review and client demand into that portfolio margining. And as I mentioned earlier, we will be launching SOFR swaps in September 2018, and subsequent to that, subject to client demand and regulatory review, we will be including SOFR swaps as well into portfolio margining across futures and swaps.

MR. WHITEHURST: Thank you, Agha. If I could add, we don't have as much to say on the portfolio margining ETD versus OTC, but I think within OTC, I think the points that we want to make is really a balance between allowing the correlations that exist between SOFR and existing dollar risk factors which are there and would give rise to efficiencies as far as an OTC context is concerned. But you've also got to make sure that you reflect the sort of idiosyncratic risk profiles of the risk factors that you're clearing. So in this case, in the case of SOFR swaps, relatively young product, relatively less liquidities than the dollar LIBOR or the Fed Funds market, and you'd want a risk model that would pick that out as well.

MS. LEWIS: The chair recognizes Jim Shanahan, CoBank.

MR. SHANAHAN: Hi. So the ISDA

benchmark work groups have done a lot of work on preparation for cessation of LIBOR in the bilateral space. Can you speak to what the CCPs, what action they're taking to deal with legacy contracts in the event of a cessation of LIBOR?

MR. MIZRA: So in the CCP space, on the exchange traded derivatives, which would be Eurodollar futures and options, the CME rules empower the clearinghouse to bring outstanding Eurodollar futures and options to final settlement should need arise. So I think in that sense we have a process and rules in place. CME has contributed to and is part of the ISDA benchmark fallbacks working group. As the fallbacks are defined and adopted by the industry, we fully expect to review those and stay aligned with the rest of the derivatives industry in use of those fallbacks.

MR. WHITEHURST: And if I could just add to that, I think it's important to clarify that typically a cleared swap is not governed by an ISDA master. There is often a cross-reference to

ISDA's definitions. So we certainly would apply that. We have a rulebook which we have strengthened in order to cater for this eventuality and certainly we have robust plans in place for what to do in the circumstances that there are a cessation, and certainly, we're delighted to see ISDA's consultation today. We'll look forward to following how that develops and what is chosen in the bilateral context as far as fallbacks are concerned and certainly pay close attention to those as the outcomes emerge from that.

MS. LEWIS: Isaac Chang, AQR.

MR. CHANG: So as I'm listening to the discussion, I'm struck by the magnitude of the change across the industry that we're talking about, and I'm thinking about potential other analogous changes. One of them that comes to mind is the implementation of client clearing for over-the-counter derivatives that was mandated by Dodd-Frank. And that's one of the things in my head I'm trying to resolve which is that took an act of Congress and then regulatory rulemaking. Here, we're talking about organically hoping or maybe regulators using some moral suasion to get the industry to move along. What's the impetus? And Scott, you kind of referred to this in your comments. What breaks the log jam? What starts and unlocks the liquidity in SOFR derivatives? And will it, in your view, do you think it does require some sort of regulatory action beyond what's already occurred?

MR. ROFEY: It's a very good question. So what I would say is the thing that's motivating it is exists sort of at two ends. The one end is clearly the possibility of a sunset of the key benchmark. And I think whether or not it turns out to happen or be in the 2021 time horizon, just a discussion of the possibility publicly, you know, out in the ether, has catalyzed some action. And I think that the continued discussion, you know, lots of publication today will continue to catalyze attention and action. It's too big an issue for anyone that has any stock of risk to

LIBOR to ignore or to kind of sweep aside and say, you know, this isn't going to be a risk. And so I think everybody has to pay attention to it. And I think that's one end.

I think the other end is, you know, you're quite right. There is a lot of inertia and entrenchment. And so if you're going to contemplate an organic change in markets, at the very least you need to bring together as many of the key participants and ask questions about their will to participate and listen to the things that they have to say about hurdles to participation and try to as an industry come to a place where those hurdles can be met, surmounted, and where you can really find will amongst many, many participants. It's obviously not enough to just have the dealers, although the dealers are clearly critically important. And I think it's the reason that ARRC 2.0 was constituted to include a much broader set of market participants. And I really think that is the other avenue.

As to your last question, the answer to

whether or not there will require a more hawkish, if you will, action to cause the changeover, I honestly do not know the answer. We all know that there's no official benchmark regulation in the United States, but of course, there are actions that could be taken. And I think that, you know, we're still in the infancy of the SOFR market and there's still quite a lot of time to watch the organic transition take place before those types of ideas are discussed.

MS. LEWIS: Are there comments from any of our MRAC members on the phone?

The chair recognizes Marnie Rosenberg, J.P. Morgan.

MS. ROSENBERG: Thank you. So I had a question about the default management process during this transition or interim period. So as the market liquidity moves more towards SOFR, how will LCH and CME think about the liquidation of a defaulter that has a very large legacy LIBOR portfolio without a lot of risk appetite among the other non-default -- among the non-defaulters to absorb that risk in such an environment?

MR. WHITEHURST: Well, it's a very good question, Marnie. I think from our point of view we take the market as it develops. So at the moment we do have still strong volumes in LIBOR, all areas of the curve, and so from our point of view that presents no challenges at present. We will monitor that and we have a risk management framework that allows us to adapt and adjust according to what we see happen in that market. Obviously, again, SOFR swaps, a little early to say. We'll know over following weeks and months as liquidity and volumes build there. But again, you might imagine perhaps even a reverse process occurring now where we are opening up with some reasonably tight constraints on the way in which we will handle the initial risk coming in. But as we get evidence of more volumes we should be able to be more accommodating for that kind of risk. So it's really, we feel the framework we have is perfectly capable of adapting to these situations. The default management process that we have is robust against these criteria, but certainly, it's a question of we have to watch as the market develops I think.

MR. WIPF: Phil, to follow along on that, I would ask that I think at the beginning of the launch of SOFR futures there were, you know, certainly, when you think about the typical metrics that you would look at to measure success and to give you the kind of view that you want to see going forward, I think it was pretty clear, whether it be number of participants versus number of contracts I think at the launch of the futures, what are the types of things that you'll be looking for in terms of the metrics to sort of measure the types of things you just described at the launch?

MR. WHITEHURST: Yeah, well, we'll certainly be looking for the diversity of participation. We'll be looking at the nature of the activity, what sort of tenors we're seeing, business being done in. And nonetheless, we do have a launch framework that caters for what we think is a sort of de minimis level of activity if you like. So we're protected and can manage according to what we see. And as I say, as the volumes develop, which we're sure will happen, then that's something that we can respond to.

MS. LEWIS: Lee Betsill, CME Group.

MR. BETSILL: I can just add, on the point of the default management process from a CME point of view that like LCH, our risk management framework and our default management processes in particular are such that we are still in an environment where the CCP is one of a mutualized risk where everyone has an interest in ensuring that the markets function properly. And that includes the default management process.

So for our swap service, we do have an environment where our market participants and clearing members participate in the liquidation process. Parts of that process are obligatory, and that will also apply for the SOFR swaps.

I would just point out that for all of the swaps, market participants and clearing members who have that obligation, we look to those who are offering the clearing service to participate and provide incentives in the liquidation process.

MS. LEWIS: Thank you, Lee. The chair recognizes Biz Chatterjee, Citigroup.

MR. CHATTERJEE: Thank you, Alicia. Agha, if I may, I'll turn to you and just ask you some background, your feedback on the nature of participants in the SOFR futures. Without obviously giving away any confidential details, what is your sense? I mean, do you think it's the same set of participants that are coming from the Eurodollar futures market that are active participants in the SOFR future markets? Or are these new people that have SOFR exposure in other cash products or repo markets and are using this now to establish a hedging or a risk-taking pattern? If you look at the percentage and the size of contracts that trade between, below block, above block, does that mirror--obviously not in scale, but in percentage--what you see in the

Eurodollar futures? And what has been the experience of the participants?

MR. MIZRA: Absolutely, Biz. You know, as has been said earlier, SOFR futures launched at an extraordinarily quick pace since the start of publication of the SOFR rate itself, April 3rd to May 7th. Typically, the market participants, our clients, need a certain amount of time for new product approvals, trade capture, systems readiness and so on. And in this case, you know, the level of engagement turned out to be very, very high and very impressive, not only that CME was able to get over 100 in-depth meetings on client import for design of SOFR futures. And I hope that this also sort of partially provides the marketplace some information on Isaac's question before us, too, you know, impetus and readiness, willingness for the market to organically participate. These are probably small indicators but they are good indicators that we were able to have 100 plus meetings in a matter of a couple months to get input from clients who took keen interest.

Fast-forward, we launched within just over a month of the daily publication of the rate. Since the first week and to come to your question, there have been 60 participants active. And within those, as I mentioned earlier, we have global banks, proprietary trading firms, asset managers, hedge funds, and other client types, and I think it's reasonable to say that in terms of number of clients, the percentage representation would be roughly in line with Eurodollar futures and Fed Fund futures.

The second question you asked as to what type of participants are active, the ones that I am aware of, they are all the large ones who you would expect, who you would want to see active. In addition, clients have given us feedback that the product, SOFR as an index and the product design are highly useful at the moment for risk management, hedging needs of repo traders, and relative value traders. And relative to that, you know, there is held the continuation of activity.

But as has been said before, there will be two tracks for this to continue to develop as a futures contract on a broad treasury repo index. You know, perhaps there will be reasonable or significant growth. But for the derivatives market on SOFR to get to much higher levels in terms of depth and liquidity become comparable with Eurodollar futures and LIBOR-based swaps. Obviously, one would need to see cash market applications.

MS. LEWIS: We're going to take two last questions. Sorry, Frank. It'll be Dale Michaels and then followed by Dennis McLaughlin.

Dale?

MR. MICHAELS: Thank you. I just want to hit the one topic on default management from a CCP perspective because we kind of went quick there from a liquid market to an illiquid market and default. One of the things that most CCPs have is a liquidation cost or concentration premiums to their initial margin models. So as you see the liquidity shift to more liquid contracts and shift away from other contracts that suddenly become illiquid, the initial margins for most CCPs will contemplate that. And there will be a liquidation cost premium so that you will have higher markets at the outset to protect against the situation of a default or a concentration of positions when you see this type of transfer occur. So I just want to highlight the fact that the first offense is initial margin before we get into that default situation. And most CCPs, through their risk management, have this in place.

MS. LEWIS: Thank you. Dennis?

MR. MCLAUGHLIN: Yeah, similar question. This is all quite complex as the liquidity is building up. So there would actually be a highly, a much more complex environment for basis risk between the CCPs. I'm wondering has the panel thought through how that would evolve in the sense of how long would it take to get the equilibrium here? Because not only does it depend on how much liquidity is in SOFR or Fed Funds or whatever, it depends which CCP it's in, in order to get out of that position when you're in default. So it would be quite a complex environment that would be built up as you migrate to the nirvana.

MR. WHITEHURST: Yeah, I think certainly from LCH's point of view, one of the key considerations about our launch choices really was to make sure that we complete this journey if you like in digestible steps. And certainly for us, taking on a new risk factor is a big step for any CCP. And I think doing that, by adding as little complexity and as little complication as possible has been very important in our planning. And that's, you know, a very big part of why launching into the prevailing valuation environment is something that to us is the right sequencing. So from our point of view that's right at the top of the list I think of considerations.

MR. WIPF: Thank you. Go ahead. Sorry.

MR. MIZRA: Yeah, I was just going to add quickly from CME's perspective that as you mentioned, liquidity versus illiquidity, you know, we all know that the market tries many new products anticipating needs. Some succeed. You know, obviously, SOFR is very, very different. The new products that do succeed, you know, they do start from nothing. There is almost like a birth-giving process. So one just has to be patient and work through it. As liquidity develops in time, that will address a lot of concerns.

Yes, it's a fact. And if you read the ARRC's recommended envisioned Paced Transition Plan closely, there will be on the way several basis swap risks that will be created and the market will have to sort of live through those and manage those. This is really the key point that some of our key buy-side participants brought to CME on cleared SOFR swaps. They identified to us that there is an opportunity to simplify, at least relatively talking by expediting one step and moving SOFR swaps to SOFR discounting which led us to do extensive market consultations. And as I mentioned earlier, in September we will be launching SOFR swaps in the SOFR PAI and discounting environment with the as per feedback from most of our clients, especially buy-side, as complex as the situation is, will help to reduce one step or one layer of basis swaps.

MR. WIPF: Okay, as again, compliments to the quality of content and participation, we are over time, so again, thanks to Emma, to Scott, to Agha, and to Phil, for super quality content and all the participation here. That gives us a good view of sort of the things that are happening in the here and now. We'll be back in a few to talk about some other things that are happening in the not too distant future.

I'll pass the mic back to Alicia.

MS. LEWIS: Thank you, all. At this time, we'll take a 10-minute break. So be back at 2:54.

(Recess)

MS. LEWIS: And now we will have the last panel of the day, The Effect of LIBOR Reform on the Derivatives Markets.

And I'll turn it back over to Tom.

MR. WIPF: Thank you, Alicia. We're going to kick things off here. Let me first introduce the panelists. We have another great, great group of panelists. Very content rich. We're going to have a lot to discuss here.

As you can see over the course of the day, we're sort of going from the history to where we are today, what's happening here and now, and I think now we're going to get much deeper into the impact, current and future, of these changes on the derivatives market.

We have Scott O'Malia, the CEO of ISDA. We have Bill De Leon, who is the global head of portfolio risk at PIMCO. We have Robert Mangrelli, Director of Global Real Estate Hedging and Capital Markets team at Chatham Financial. We have Subadra Rajappa, Head of U.S. Rates Strategy at Soc Gen. And we have Charles Schwartz, Head of Derivatives at AXA US.

We'll use the same format. We'll go through the panel with three to five minute presentations and then we will open it to the floor for questions.

So without further ado, Scott, would you lead off, please? Thank you.

MR. O'MALIA: Thank you very much. Thank you very much to MRAC and the commission for inviting us.

I'm Scott O'Malia, CEO of ISDA Global Trade Association, 900 members in 68 countries.

I'm going to walk you through some of the efforts that we've undertaken to bring the market forward to help develop a seamless and effective solution to the benchmark work. Much of it is around the education effort. We'll talk about a new concept that has been talked about quite a bit today, the fallback consultation. And then I think there's some mention of the European benchmark work that has been raised a couple of times today. I'm going to leave that for you to review in the deck in light of the time.

So ISDA has been working with three trade--four trade associations in a multistage effort to help the education effort. And we are grateful for the cooperation we've had from AFME, ICME, SIFMA, SIFMA AMG, to bring together kind of the universe of derivative and cash markets to help educate the market. And the three-part step as you can see here is developing a global transition roadmap. This was a single point of entry to provide market participants with some familiarity with the global regulatory community, the risk-free working group. As was noted in the first panel, it went from kind of a bank-led effort to a much broader effort.

So making sure everybody is familiar with what's at stake here, the various jurisdictions. We surveyed five jurisdictions--Japan, Europe, the US, the UK, and Switzerland, to make sure that everybody understood what the major initiatives were, what is at stake in terms of the scope and size of the impact and what's in the contracts in both cash and derivative markets. And then developed some solutions around that and helped everybody get ready.

The second part was a survey. And this is essentially your homework. And what was important, if you did not read the roadmap, we were going to come calling on you to ask a number of questions. We reached out and spoke to 154 institutions in a little over 20 countries and asked them what they were doing to prepare for the LIBOR transition to risk-free rates. And as you can see there, it's all walks of life in terms of market participation.

Now, the third area was around a report that we produced as a result of that survey. And we collated the information from the survey participants and published it in the report that was released about a month ago mid-June. And all of these, both the transition roadmap, the first document that we produced in February is on our website, as is the newly published report. And we wanted to make sure that we identified--the most important element here is the survey information in terms of where people are in their readiness, but also at the end of the report is a transition roadmap which I'll address shortly.

So what did we find? We did find that there was a high awareness. The survey showed that respondents had a high level of awareness and transition issues with 87 percent indicating that they were concerned about their exposure to IBOR. However, what we did also find was that 15 percent did not have any knowledge of the effort, and for 29 percent of the respondents, this was their first touch. So in many respects this was a very important first touch and the survey did do its job.

There was good knowledge we found out around the risk-free rate working group effort and they understood what the objectives, the work products, and the goals of this group are in the various jurisdictions. We also found that most respondents, 75 percent had indicated that they were beginning to have internal discussions around their transition strategy, and 78 percent indicated that they were intending to trade products referencing risk-free rates. A lot of today's discussion was how do we get them to go? How do we get them to begin the trading? And the education will lead to momentum, and the momentum will be essential to facilitating the transition. So I would have to say that we're clearly in the education phase right now and every panel I think has confirmed that, but we do have to get to a momentum stage which is when the trading really begins.

So what are the key elements? And this is feedback that we received from the participants. And they were looking for a clear and coordinated regulatory message from the risk-free rate working groups. These markets are global markets, and therefore, they want to make sure that the regulators and the risk-free rate working groups are linked up. In particular, what is LIBOR, TIBOR, EURIBOR, how are those transitions going to be coordinated? How will we deal, as a theme that's come up here today quite a bit, is the legacy positions. And there's a hunger for more information from the working groups, and particularly on the client side.

And as Sandy noted, the communication strategies in the ARRC, in the Sterling risk-free rate working group are being developed, and there are various levels of communication and readiness at the different risk-free rate working groups. In particular, the European working group is probably the slowest of the five and they have not selected their rate yet but are in the process of consulting on that and should have something shortly. Seventy-two percent cited wide-scale adoption of the rates is critical and they identified the products down below.

The long runway. This is particularly an issue for EURIBOR. In the European benchmark reform there's some text that says you need to be ready by 2020. That deadline is ahead of even the discussion point around the Andrew Bailey comments of 2021, and preparing for a 2020 deadline is going to be very difficult, especially when they don't even have a rate selected yet. So I really think that that date needs to move, and that will require a level one text change. But I think it's beginning to, you know, the challenges are being communicated to the European benchmark reform groups of the challenges that they face.

There's a strong desire for term rates. And it was mentioned here, David mentioned it in the first panel, that the ARRC, the Sterling risk-free rate working group are looking at consultations on term rates, so that's important. What those term rates are will obviously be an important question, and the markets, trying to understand how they keep -- the rates they have today, what will it look like tomorrow?

The development of credit premium. This is an issue for the loan markets. And they're trying to understand what the borrowing rate will be going forward. So it's just making sure that the cash markets and the derivative markets are linked up. As I note at the top, this is, you know, we tried to survey everybody to make sure that there was a global effort here. So that's an issue that was raised by folks focused on loan markets.

And then some of this tax and accounting treatment cannot be overlooked as it's very important, making sure that we have appropriate hedge accounting. Clarity on that is one of the key issues that participants raised.

Now, as I mentioned, the important bit of this is the implementation checklist. And what we will be doing with this report is continuing to educate the market and addressing these things. In the interest of time I'll let you read that. I think many of these things are fairly obvious. Many of the things have been talked about here in this panel, but all of those things need to happen. Some are more difficult than others. You don't want to overlook repapering. You don't want to overlook some of the preparation around infrastructure and process changes. All of this is going to take time, education, and cooperation. And I think as we learn more and more about some of the data points in this last panel, what are the futures products going to be? What are the cleared products going to be? How do people trade this going out into the future? The benchmark, the fallback work, what does that mean? It's a derivative product right now but how can it potentially be used in conjunction with cash markets? So these are the things we want to educate the market on and just begin to unpick all the questions that need to be addressed.

Now, the item that has been talked about quite a bit today is our fallback consultation. And I guess the bid is, what is it? We were asked in 2016 by the FSB official sector steering group, which is a working group of the official sector, global official sector, coordinating efforts around fallback works. And they asked is it to address this largely because of the $200 trillion outstanding derivative exposure? We will get to developing fallbacks in the currencies listed there in the top line, but the fallback work that we're doing today, the comment period that we're looking at now addresses the UK, Japan, Switzerland, and Australia. Right now we didn't feel that there was enough data for the US dollar SOFR effort, and we will come back to that. But we do ask in this consultation for comments and thoughts around the US dollar transition so we can make sure that we begin to think about that and we'll use that for the next consultation.

It is important to note this is about the permanent discontinuation. And in the first panel we talked about the triggers and making sure that we had the clarity around those so that both parties understand when it ends. And it's when it doesn't not publish and it's up to the administrator or the regulatory body overseeing the administrator to make that call. Could there be other solutions? Possibly. And that's why we're going to ask that of the market to figure out what's next.

I think most of this has been covered. The consultation will last for three months. And it's been talked about how important it is, and the important bit about it is we get feedback from the market. Everybody around the table should look at this, should read the consultation, and should feed back to this to make sure it's a robust and careful consultation. This only works, as noted in the main third bullet, this is completely voluntary. We cannot compel people to adopt a protocol that they don't want to adopt on a fallback they're not going to do. We will use the feedback that we receive from the market to make a decision about a spread premium. We're not selecting the rate. The rate is the risk-free rate, and we're trying to develop the spread premium and term structure between that so it's transparent, reliable, and clear. And we will adopt a single term structure and credit spread for use and we will change that in our interest rate definition. So going forward, new contracts will reference that fallback. And we will develop a protocol to fix and to address legacy contracts.

In the meantime, ISDA is not going to publish this rate. We will reach out to a vendor to do that. That is not our expertise, and there are plenty of people that can do that in the market today. So we will be working with vendors to have that published independent of ISDA.

So this is what we're asking you for input on. We have listed three spread methodologies--the forward approach, the historic mean and median approach, and the spot spread approach. In the consultation, in the appendix, there is the math that is so important to understanding what each of these means and how they will be used. In addition, we have worked with our colleagues over at Bloomberg and we will be publishing about 100 charts and graphs to support the calculations behind this and to give you a sense of how this can be used in relationship to the IBORs. So that will be published shortly. Those charts are in progress and probably will be published within the week.

We also have prepared term adjustments. And you can see the four options there. Not all of these work together and that's noted in the consultation. So make sure you read it carefully and not select things that don't work together. But at the end of this three-month period, we hope to have a good, robust consultation, feedback from all walks of life in the market. And I should point out, this is not only for ISDA members, but non-members as well. We will take everybody's consultation.

And I should also point out, this is derivatives only. There are a lot of conversations about the basis risk and how do we deal with those kind of things. We do believe and we do want to make sure that we have good collaboration and consistency in terms of our fallback approaches. But this is only for derivatives.

I think in the previous panel, Scott mentioned that there might be two different fallbacks, as appropriate. ISDA does have the benefit of being able to change its documentation through protocols. Not all asset classes have that luxury. And as has been mentioned here today, some of this stuff we're just going to have to roll off. So we know that this is not, you know, this is not going to solve everybody's problem but we are offering this for everybody's review and input. We do hope that it will be largely consistent with the cash markets as well.

This talks about the timelines. We will be getting to the next set of fallbacks and rates, and we will consult on US dollar, the Euro LIBOR and EURIBOR, potentially HIBOR, the Hong Kong-reference rate. But we'll continue to work through this process until it's complete. And hopefully, we have good, robust comments on this so we have a clear and definitive winner and that it will enjoy broad market adoption. And I would just suggest you just review what's in your packet on European benchmark work. And the fallback does align with this and it's important work to make sure that everyone can comply with the European benchmark rules and the fallbacks will be key to that.

Thank you very much. Happy to answer your questions.

MR. WIPF: Thanks very much, Scott. And if we're giving our awards for compressing three years of work into a five minute presentation, I think you've got it. And thank you. There's plenty there and I think people should take away these materials. There's a lot there.

So we're going to move forward and we're going to pass the mic to Bill De Leon from PIMCO. Thank you, Bill.

MR. DE LEON: Thank you, Tom. I want to thank the Commodities Futures Trading Commission, Commissioner Behnam, Chairman Giancarlo, and his staff, for the opportunity to participate in today's Market Risk Advisory Committee panel on current initiatives to reform LIBOR.

I am Bill De Leon, Managing Director and Global Head of Portfolio Risk Management at PIMCO.

I will make a few opening remarks on attrition from LIBOR to SOFR and look forward to elaborating more on these issues in the general discussions.

In the fall of 2017, the Alternative

Reference Rates Committee ARRC 1.0, came out with the Phased Transition Plan from LIBOR to SOFR. This past spring, ARRC 2.0 was reconstituted and various working groups have begun to map out the work required to move from LIBOR to SOFR. This transition is unfortunately much more complex than meets the eye as it cannot be accomplished simply with a big bang protocol as various dependencies across products will likely result in scenarios where transition timelines diverge across products and jurisdictions, resulting in basis risk across the industry.

While ISDA is working on a protocol for enhancing fallbacks in derivatives which reference LIBOR, this will not apply to all products that refer to LIBOR. For example, listed futures, bonds, loans, mortgages, and securitized products, to name a few, do not refer to ISDA documentation and have their own stylized fallback language. Sometimes this language is vague and leaves the discretion to a calculation agent would further muddy the timing if and when the transition from

LIBOR to a fallback rate occurs.

Additionally, as LIBOR and SOFR each represent different and unique underlying rates and terms when the switch between rates occur there is a potential value transfer unless there is a spread adjustment which creates fair value. Our biggest concern at the time is the handling of nonderivative legacy securities or loans. As a first step, market participants should review existing securities, contracts, and current fallback provisions. We have found that certain products do not provide a fallback beyond reference banks, which could lead to potential contract frustration if the rate is discontinued and banks are not willing to provide quotes. Our view is that the buy side should advocate for and collaborate with issuers, securitization firms, and other members of the industry to propose replacement fallback language. It is imperative that new notes adopt this new language ASAP to prevent more proliferation of the problem.

PIMCO, as a member of the ARRC, has

produced replacement language for floating rate notes, and a draft of that language was published in the April ARRC meeting minutes. The draft is intended to be consistent with ISDA's approach on fallbacks and triggers. It should be noted that given legal and structural considerations, it may not be possible for ISDA's and the ARRC's language to be identical, and it is important to note that the flooding rate note working group language is designed for cash products which may have nuances different from derivative products.

As derivatives intend to utilize NOIS-based rate and start to build liquidity in that rate over the next few years, the triggers proposed by ISDA reflect current thinking regarding the likely triggering events. We expect those triggers may evolve over time, and toward the end of transition period may closely align with the cash product triggers and incorporate additional triggering events. These additional triggers contemplate scenarios that if not addressed could impair the functioning of the cash product relative to how it is intended to function as in the case where the number of LIBOR contributors declined significantly. There are also more practical considerations for the cash market, including if the administrator does not publish the rate for multiple days.

PIMCO also believes that the market needs certainty and very prescriptive guidance to ensure clarity. We believe a calculation agent's role, if any, should be limited to them making objective calculations. Provisions giving calculation agents unilateral discretion will increase the risk for disputes and incorrect adjustments.

It cannot be overstated that the continued focus and support from the official sector has been a key and powerful influence towards the adoption of an alternative reference rate. The Fed's support and guidance in establishing principles for fallback contract language and facilitating ongoing discussions has been crucial in the progress towards establishing a fair template for fallback language for new rates. The draft language helps address many of the concerns escalated by PIMCO, including those related to calculation agent discretion and basis between LIBOR and the alternative rate and the process for drafting the language is allowed for incorporating insights from a wide variety of market participants.

Thank you again for the opportunity to talk today, and I look forward to productive conversations.

MR. WIPF: Thank you very much, Bill. We're going to pass now to Robert.

MR. MANGRELLI: Great. Thank you for the opportunity to be here today and to share some perspectives on the LIBOR transition as it relates to derivative end-users. A lot of what I have covered in my prepared remarks has been spoken to at some length today throughout the panels, so I'll try to keep this relatively brief.

For background, Chatham Financial is the largest and leading independent risk management advisory and technology provider to derivative end-users. In that capacity, we serve a wide diversity of clients. So that ranges from financial end-users, like small and medium size community banks and regional banks to nonbank lenders on the financial end-user spectrum, to nonfinancial end-users, which could be real estate investors, manufacturers, and other corporates. In that capacity as advisor, we advise on and transact on about $2 billion of derivative notional daily, much of which is indexed to LIBOR and arises from LIBOR risk that relates to cash products.

After these trades are completed, Chatham also assists our clients throughout the lifecycle of those transactions, and I think that's an important point that I'll touch on further. But things don't stop once a trade is booked. Obviously, those trades need to be continue to be valued. They need to be accounted for. Payments need to be calculated both on the cash product side and on the derivatives side, and we offer support in all of those areas.

Like I said, a lot of the topics I wanted to touch on have been covered today, but I'd like to just hit on a few kind of higher level key themes as it relates to end-users.

So first, from the end-user perspective, a key issue is minimizing basis risk and value transfer. And the point here is that each and every day end-users are facing new LIBOR risk, and many times are facing that as arising from cash products as new loans are being originated. In many of those loan agreements, it shouldn't be dismissed that there are hedging requirements. There's oftentimes a covenant that requires that a derivative be entered into to manage the interest rate risk in that loan product. There's terms that govern what that derivative needs to look like.

And so as we think about the topics of triggers and fallbacks, I don't think it should be forgotten here that the impact on the cash side will also impact the derivative side. And particularly, when there is a hedging requirement, thought needs to be given on how that hedging requirement is impacted. And obviously, timing differences introduce the possibility of increased basis risk and value transfer.

The second topic, and Scott mentioned this in his remarks on fallbacks, but while ISDA and other market participants think about fallbacks, and in particular, spread methodology adjustments, I think it's hard to ignore the fact that there's math involved. There's modeling involved here in all of this. And many of these fallbacks are reliant on curves and building curves. And you know, I'm not a quant by practice but I've worked with some quants over the years. And even if we can agree on methodologies, curve construction in and of itself, and some of the finer points there, there could be several sources of disagreement or debate. Overarching theme there though is that access to the data and inputs used in any of these fallbacks needs to be made widely available, accessible, and fair, at a fair price.

And lastly, I hit on this already, but lifecycle events. Again, valuation. It's not just a derivative issue. It's a cash product issue. Many loans are carried at fair value. Many debt instruments are carried at fair value. So issues around transitioning of all products on the valuation side, hedge accounting as well, a major topic of concern for end-users as they need to consider what happens to their financial statements in the event that LIBOR is degraded and ultimately being replaced.

I'll stop there and appreciate responding to questions.

MR. WIPF: Thanks very much, Robert. We'll now go to Subadra.

MS. RAJAPPA: Thank you, Tom. Thank you for giving me the opportunity to share our thoughts on the effect of LIBOR reform on the derivatives markets.

As a large global bank, Soc Gen is actively involved with regulators across the globe on IBOR reform as it impacts our married business lines and our client franchise. We are currently market makers in SOFR futures and are getting ready to trade SOFR derivatives starting the third quarter. We have a global governance structure in place for transitioning the group and the markets division to the new IBOR benchmarks.

While LIBOR transition is still at its infancy, there is a greater level of awareness of key issues among market participants since Andrew Bailey's speech last July. Many clients we speak to are currently working on getting a better sense of their exposures to IBORs and are in the process of setting up internal governance to manage the transition.

The key concern is around the transition of legacy contracts before 2021. Even though there is a lot of work currently underway on fallbacks, a sudden cessation of LIBOR and potential for large value transfers on legacy contracts is an important concern. Hence, it is imperative that solutions proposed are economically viable and minimize such risks. Will the fallback triggers be the same for different regions and different products? Will there be different spread calculation methodologies for different currencies? These, and several other operational issues will need to be ironed out over the coming months and years.

The other topic actively debated by end-users is the development of a term rate. How will an IOSCO compliant term rate be created? Will there be sufficient liquidity in derivatives markets to create a forward-looking term rate? And more importantly, is a term rate even required? Market participants seem to be divided on this topic, but it's generally perceived that the transition for cash products will be more seamless with a term reference rate.

As a large player in both cash and derivatives markets, we are concerned about the synchronicity of transition between cash and derivatives used as hedges. We're also concerned about consistency between currencies and potential for the creation of new basis risk during the transition process. As we said before, LIBOR is in the DNA of the financial industry, and transitioning internal systems and managing basis risk between new and existing benchmarks is a monumental task. Currently, accounting systems, VAR models, and several internal/external processes rely heavily on LIBOR. Hence, it's essential that market participants are intimately aware of the changes coming down the pike and begin transition in full earnest. Thank you.

MR. WIPF: Thank you, Subadra. We'll now pass to Charles Schwartz.

MR. SCHWARTZ: Thank you, Tom. Good afternoon, Mr. Chairman, commissioners, and members of MRAC. And thank you for giving me the opportunity to participate today.

My name is Charles Schwartz, and I am Head of Derivatives of AXA Equitable Life, a New York based insurance company. In this role, I oversee the company's derivatives- based hedging and investment programs. I also oversee our company's LIBOR transition efforts across its insurance and asset manager divisions. These experiences inform my opinions regarding LIBOR reform. However, I note that my comments today reflect my own opinions and are not necessarily those of my employer.

I join many others in supporting the post-crisis initiatives of the prudential regulators aimed at improving institutional capital markets. Prominent examples include mandatory clearing of derivatives, money market reform, and of course, LIBOR reform, of which I will speak in a moment. We recognize that each of these initiatives involves costs, whether explicit implementation costs or otherwise.

In our opinion, the cost attending these initiatives is worth the benefit of long-term market safety. We take a long-term view in assessing costs versus benefits consistent with the long-term nature of an insurance company's mission.

We view LIBOR as a reference rate. It

determines cash flows in many of the hedging and investment products that are crucial tools for our business, such as swaps, notes, commercial paper, loan agreements, mortgages, and asset-backed securities.

LIBOR's shortcomings, its design flaws, are well known. In particular, the fact that it is determined in part by the expert judgment of many of our trading counterparties. Subjectivity in the rate setting process is reason enough to seek a replacement. That said, we welcome the IBA's work towards strengthening LIBOR.

The alternative reference rate committee's chosen new reference rate, SOFR, remedies many of LIBOR's shortcomings, and so we prefer SOFR over LIBOR. More broadly, we support the ARRC and its mission. AXA Equitable Life is a member of ARRC 2.0 and participates on several of its working groups, including co-chairing the outreach and communications working group.

Now, granted, the market and the ARRC still have much work to do before SOFR can meaningfully replace LIBOR, but the roadmap for the future, creating derivatives on LIBOR, devising a term structure on it, suggesting contract language that would support SOFR in nonderivatives products, all of this points to success. No doubt part of this success is owed to the ARRC's public-private partnership structure and to its broad membership across both buy and sell sides. So I expect SOFR to replace LIBOR in the long run.

On the other hand, I also believe there is danger in discontinuing LIBOR too quickly or without sufficient preparation. End-users, such as insurance companies, need years of preparation, a topic I know we'll explore further in the Q&A. We need even more preparation time than was required for other recent reforms, such as mandatory clearing, for example. The crucial distinction is that discontinuation of LIBOR affects our legacy transactions. It also impacts the valuation and risk frameworks, not only of our assets and hedges, but also of certain of our insurance liabilities. Extrapolating to the entire financial ecosystem, it would seem that a premature discontinuation of LIBOR would be more disruptive to markets, more harmful than all of LIBOR's design flaws.

For this reason, regulators should do whatever they can to ensure that this does not happen. And to be clear, I'm referring to keeping LIBOR around in some form solely for those longer dated legacy contracts that will not roll off before 2021, LIBOR's earliest expected cessation date.

The two goals of SOFR promotion and LIBOR support are mutually reinforcing. A robust SOFR market will likely induce market participants to repaper their legacy LIBOR contracts, further reducing systemic risk of LIBOR cessation, and the assurance that LIBOR will continue to be published for legacy contracts will give end-users the runway they need to adopt SOFR for new contracts, while in parallel they also extricate themselves from LIBOR and from the risk of its demise. As I mentioned earlier, this task will likely take years.

Granted, there is a delicate balancing act here. SOFR promotion will be undermined if the market believes that LIBOR is returning to its glory days. On the other hand, cessation too early is itself a danger. While we work towards transplanting the old heart of the financial ecosystem, LIBOR, with a new and even better heart, SOFR, let's be sure that the patient remains alive on the operating table.

Our firm's first step in addressing LIBOR reform was to take stock of where we use LIBOR, both for trades and for valuation of assets and liabilities and begin assessing what's involved in making the transition. This work is ongoing and tends to bifurcate into plans for new contracts and plans for legacy ones.

It has become clear through this review that not all of our issues involve legacy contracts. For example, some further regulatory work is needed to more fully promote SOFR.

Firstly, grandfathering swaps not mandated for clearing that are re-papered to SOFR. End-users who have legacy not mandated for clearing LIBOR swaps are disincentivized from switching them to SOFR if that will cause these swaps to now require clearing in the attendant costs in the form of initial margin. This would be an unintended penalty from advocating that people switch to SOFR. Somehow exempting such swaps from clearing and from the new variation margin rules would remedy this.

Second, and in an insurance context, supporting efforts to update state laws and regulations to allow the use of SOFR as a risk-free rate in insurance liability valuation and reporting. In some cases, LIBOR is presumed as the discount rate for future liability cash flows. Absent a change, introducing SOFR-based hedges will result in an asset liability mismatch. Our industry needs time and regulator support to align the rules that govern assets and liabilities.

In conclusion, we support the adoption of SOFR as an alternative to LIBOR and have begun planning for such change. In the coming years there remains much work to be done in both the private and public sectors to assure a smooth transition.

Thank you for your attention.

MR. WIPF: Thank you very much. We will now open it up to questions from the MRAC. I think we have a few here. Do you want to go to the phone first? Oh, sorry; I apologize.

MS. WHITE: Thank you. Thank you for your comments. Obviously, liquidity is something that we're all very focused on in this and we've typically looked at this as the illiquidity of SOFR and the lack of history and depth. Can you give me your thoughts on this scenario, while potentially unlikely, but one where the demand for the SOFR product moves quicker than expected and you see a shift in liquidity away from LIBOR quicker than we're ready for? And what your thoughts are on that.

MR. DE LEON: Unfortunately, well, as you say, that's unlikely to occur. I would see that the most likely impact from that would be the risks there are most likely going to be that custodian banks are not primed to handle it. I think that there are going to be problems, as pointed out, that insurance companies and others may face that they don't have all the regulatory approvals that they need for some of the products. So those are the big issues here where I think things would come up. The biggest mover I think to get liquidity in SOFR will be that issuers start to create paper. That is the first and foremost thing that I would see.

The second thing that I would see to create adoption of it will be that CCPs start to use it as their prime--use it for they're paying interest in other things. Those two things I think will get people to adopt it much more quickly. And then you'll start to see derivative users have hedging needs and liquidity for it. Those are the three things I think will be key to get people to adopt it more quickly.

So things to get, the industry to adopt it would be to get issuers to start putting out paper in SOFR form one way or the other and that will create the natural term structures that people want, term rates, and other things for people to look at. And then natural hedging. And then the ability to create longer term rates and people to create swap markets.

To the extent that there are bifurcated differences in people using discount rates and other things, that's going to create more confusion, not less. And they'll slow it down. Yet again, I think the problem will be then, what do people do with new issuants? Are there new languages? Are there legalities that haven't been worked out? Can custodians handle calculations? Will be hold ups. And are there commercial products that have been adopted in getting consumers to understand what exists? So I think it will be easy to get institutional institutions to understand. So my firm understanding what a

SOFR-based footing rate note is easy. Everyone at this table understanding it. However, getting someone to get a loan that is SOFR-based instead of LIBOR-based, I think that's going to be a problem. So getting that into the public vernacular.

I was talking to Sandy about that. Getting, you know, J.P. Morgan to issue a SOFR-based ARM product is going to be interesting, and getting that being the common issuance I think is a key thing.

MS. LEWIS: Thank you. The chair recognizes John Murphy, Commodity Markets Council.

MR. MURPHY: Thank you. Thank the panel. Everyone on the panel I think did discuss the concept of basis risk, which has been on my mind, and I think a pretty consistent theme since this has been introduced. And I think Scott, this isn't directed at you, but anyone on the panel can answer. But since you did have the ability to out and see as many clients or end-users as you did globally, what do you think is a reasonable time frame for us not to be premature in the cessation of LIBOR? I know that's a pretty wide open question, but I mean, is there a reasonability factor that anyone can even come close to answering?

MR. O'MALIA: You know, as I noted, our job is to educate and to create the environment. The ARRC talked about creating the trading products. That was the focus of what Sandy's conversation was. I don't want to give you a date. I couldn't give you a date with any confidence, but we do know what we need to do in order to put this in place. Bill noted the three or four things that he needs to see and what he thinks will be the catalyst in terms of trading. We need to get the products out there.

It is filling in the gaps. It's a data exercise, and the more products we get out there, people can link it together. I think the fallback work and beginning to put the math together, people understand what their exposure is here and think about how that links to potential consistencies and fallbacks and other products in cash markets. We just fill in the gaps. And as we go over the next couple of years, that's the key bit, and that's the education that leads to the momentum and the momentum leads to the transition.

MS. LEWIS: Thank you. The chair recognizes Dennis McLaughlin, LCH.

MR. MCLAUGHLIN: Yeah. More a comment than a question, really.

Assuming that SOFR gets decent liquidity, I'm just wondering, would it be really that big a deal to deal with the legacy swaps? Because if you look at what we have today in LCH, the compression algorithms we run are a way of tearing up an existing portfolio and replacing it with a new portfolio effectively cash -- in equivalent cash flows, which could be done if you had SOFR rates that had good liquidity. And it could be done really effectively because we do this now with literally hundreds of trillions of dollars today. So I'm just wondering how fast the legacy problem could have been dealt with in this way.

MR. DE LEON: I'm not sure though that--you're comparing apples and oranges though. You're going to have LIBOR-based swaps that need to get torn up and made to go away, so that's different from compression. So people have to trade out of their LIBOR-based swaps into SOFR swaps. So I agree that you could use compression algorithms to help speed that up, but at the end of the day they have to do swaps out of one type of rate into the other. So whether they do perfect line item collapses to repaper or they do basket swaps, they still physically will have to move their entire book from LIBOR to SOFR is the problem. And the compression algorithm will only help in terms of, you know, if I have, you know, 100 billion notional, I could do 100, you know, net, I could do that instead of doing 25 line items. I could do one line item and use compression. That helps admittedly, but I still have to do 100 billion and someone has to provide me liquidity to do the 100 billion. So the big problem is people have to move their entire LIBOR book or they're going to be faced with using the ISDA, you know, trigger event to have their book converted for them automatically. And I don't think most people are going to want to wait for the fallback language to move their derivative book.

MR. SCHWARTZ: I would also add, you know, the premise of your comment I agree with, that the derivatives repapering is probably, even of the legacy contracts, certainly the legacy cleared contracts is probably not the highest on the alarm level, you know, as compared to nonderivative products.

MS. RAJAPPA: And also, a lot of the derivatives that exist are hedges for cash products. So it's not going to be easy for those, to you know, you can't just compress them. You have to kind of wait for the cash transition to happen so that the derivative can then be transitioned.

MS. LEWIS: The chair recognizes Lisa Shemie, CBOE.

MS. SHEMIE: Thanks. I had a question from the ISDA perspective really on the mechanics of the protocol itself and how difficult you're foreseeing wide adoption of a protocol once it's implemented. I know ISDA has tremendous experience in implementing protocols but there's always that difficulty of getting, you know, the dealers are all laser focused on mobilizing everyone to get that done but how hard will it be to get end-users, buy side participants to adhere to it in addition to transitioning non-ISDA master agreements like the German Local Master Agreement and how you're seeing that as a sort of global effort? How successful and how quick do you think that could get done?

MR. O'MALIA: Those are all very good questions. And the reason we're taking this broad market comment period is to really get the entire market involved. Normally, a protocol would have been developed by a working group within ISDA.

We've gone to extraordinary lengths to time it with this event to make sure that everybody in the market is aware of this to really drive some support to it. We're grateful for the support in the chairman's remarks, in Andrew Bailey's remarks today, to really give some momentum behind it. This is a big, huge issue. We've all identified those issues today, and that's why we're taking kind of this extraordinary step to make sure that we get as broad a market feedback on it to get the proper adoption because as I noted, it is voluntary.

We do have experience, to your other question, with other protocols, and we've amended other broad, you know, other organizational documents as well, so there is some experience with that but this is unlike any other project. We do appreciate that and it's going to take both the industry and the official sector pushing on this.

MS. LEWIS: Thank you, Scott. The chair recognizes Marnie Rosenberg, J.P. Morgan.

MS. ROSENBERG: Thank you. Scott, I had actually a couple questions for you. Sorry; Scott, I had a couple questions for you. The first is, this does remind me of the noncleared derivative margin repapering quite a bit. I mean, it seems very, very extensive, and I was curious, how long we think this process is actually going to take?

And then the second question I have is who developed, or who is developing the objective criteria for determining the permanent discontinuation of the IBORs?

MR. O'MALIA: We've sought working group feedback. We've sought official sector feedback. The triggers, I think Sandy mentioned it as well, are very important. Bill mentioned it as well. Right now the triggers in the documents say that cessation either implemented by the administrator or the regulator of the administrator. And as we move to a SOFR-based rate--LIBOR is right now under the FCA. You know, US dollar LIBOR included. But as we bring SOFR back, it's administered by the New York Fed and, you know, also the overseer. Right? The Fed oversees itself in this case. So as we transition to the new risk-free rates, those are going back to the administrators of those jurisdictions and oversight. Right now that's what's provided. Administrator or supervisor. We're looking for feedback on that. We want to make sure, as was noted I think here, making sure the cash market triggers and the derivatives triggers are compatible. We don't, you know, you don't want to have one triggering, another not triggering, or uncertainty whether it's actually triggered. So that's very, very important whether this is going to happen or not.

The other question?

MS. ROSENBERG: On the repapering.

MR. O'MALIA: The timetable? There's not much going on right now. There is the initial margin. There's Brexit. There's the capital rules. So all of this has to complete by 2021, 2022, right in that timeframe. So being able to get everybody's attention on this should be really easy. But there's a lot at stake in terms of, I mean, what are you left with, I guess. If you don't put triggers--if you don't put fallbacks into your documents, you know, it sounds theoretical right now but as I think we get closer to the 2021 deadline or the 2020 deadline in Europe and you're facing the potential of not having a reference rate in your document, that's a bit irresponsible. And you've got to deal with that. You've got to deal with that with counterparties. And you have to think about what your exposure is. I mean, that's part of the education is to make sure that people understand that you can't not do anything.

MR. DE LEON: Just to add to that, I would expect that, unfortunately, people are going to move their derivative positions and you're going to wind up with basis risk. It's just going to be unavoidable that, you know, your people will, similar to what we saw with the big bang where there was phenomenal pressure and a deadline set by regulators, we'll see something--I would expect to see something similar here with the need to repaper everyone's masters with whatever the protocol is.

Additionally, I think people will most likely trade out of their existing and repaper their existing derivatives so that they don't wind up getting triggered so that the protocol will be implemented but most people won't let it occur, unlike with the big bang where people didn't retrade their CDS. They just got caught with the big bang. So I think this will be a different market event. But I think as you get closer you'll see a lot of trading because people not want to be in something that refers to a rate that they don't know what it's going to exist to. I certainly would not want to be in something where I don't know what the state of LIBOR is going to be after 2021 for a large book for long dated positions. You know, unless we have clarity and there's a change. But given today's speech, I don't think that's going to be the case. So I expect there to be a lot of basis risk, unfortunately, and it's going to be unavoidable for most people would be my guess.

MS. LEWIS: Thank you. The chair recognizes Stephen Berger, Citadel.

MR. BERGER: Two follow-up questions to the discussion.

First, one of the chief catalysts that I think has been identified for liquidity formation in SOFR-based derivatives is more cash products referencing SOFR, you know, increased issuance. But the catalyst for that increased issuance seems to be the development of term rates that are based on liquidity having already developed in SOFR derivatives. And that presents itself as somewhat of a chicken and egg problem, and the other catalysts that seem to have been suggested are the use of SOFR for PAI or for discounting, as well just the threat of LIBOR going away. But if really the primary catalyst is a growing cash market, like how do we solve that chicken and egg problem? So that's the first question.

The second one, following up on something Charles alluded to, you raised the prospect that changing legacy contracts from referencing LIBOR to SOFR could trigger a clearing obligation, but at least as I look at the world, there's no clearing obligation at present for SOFR-based swaps. And I don't know what the plans are to implement one. So I don't know if anybody has any thoughts or if I'm thinking about that issue correctly as well.

MR. SCHWARTZ: Maybe on the second question first. Understood. I guess it's expected that SOFR, vanilla swaps would be a standard instrument and therefore would be completely in the spirit and therefore, in the remit of the clearing obligation. So the comments were made under that assumption.

MR. DE LEON: On the first one, I think that at some point people will need to make the leap. If there's a prod from regulators that there should be a move from certain issuers, maybe that would help. Or the expectation that, look, this is going to be a new market and, you know, in the interest of that people will move there, especially if the expectation is that you want to issue a five-year floater and you know that LIBOR is not going to be the rate, do you want to issue on that? And given you have a history in SOFR you can come up with where you think a fair value is, you may want to go there. So I think that a combination of regulatory pressure, prudent risk management from somebody who thinks that LIBOR is going away, and issuing a long-dated SOFR instrument might be more prudent than issuing a LIBOR-based instrument will get you there. So it's entirely conceivable. And given that certain regulators are speaking up about the risks here, it's conceivable others may push.

MR. O'MALIA: I think on the second question, the Title 7 ramifications, the ARRC put forward a letter today, and I think Dave referenced it in his opening remarks in panel one, having the certainty on the future treatment of this, and it's not only in the US, it's around the globe. The rules are consistent globally. And with a trade execution, clearing, IM requirements, what are the ramifications of changing a contract? And would it become in scope for the new regulation? We just need to know because that will have a huge impact I think on whether people do the transition and amend to the fallbacks.

MS. RAJAPPA: And I do actually agree with your comment about the chicken and egg issue. And I think that that's a question that I get frequently asked when I talk to clients is that it is a chicken and egg problem. But there are some issuers out there who are willing to consider issuing without a term rate. So that might be part of the mechanism that gets the cash markets involved.

MR. SCHWARTZ: And if I could actually add as myself to that first point as well, first question, yeah, agree as well with what Subadra just said. I mean, it is a chicken and egg problem. But different constituencies are going to be motivated for different reasons. And part of let's say the end-user buy side, especially in an insurance company context, is very concerned about LIBOR and would love to get SOFR going just for reasons alone of SOFR's virtues and LIBOR's deficiencies. And you know, here I'll make a plug for the outreach and communications side of the ARRC. I mean, we're trying to, you know, the ARRC 2.0, spend a lot of time in outreach, getting the word out, and we will definitely take Chairman Giancarlo up on his offer earlier in the morning to use any avenue we can to make sure people understand what they're facing in the coming couple of years to come online.

MR. MANGRELLI: I'll just raise one more thing from the end-user perspective. When we talk to end-users, and I don't know that they'd be unopen to having a SOFR-based loan product, but I think there are practical considerations and challenges around the data set and the familiarity with the index to date. For example, if you're used to borrowing at a spread to LIBOR and now you're getting quoted as spread to SOFR and you're not totally sure of the history of SOFR, it's a little bit harder to make that sort of decision. And that gets compounded by the fact that, you know, SOFR has had month-end spikes. We've had periods of time where SOFR has, just recently, set above say one-month LIBOR. And so I think for end-users to gain familiarity and comfort will probably just take a little bit of time, thus begging for a more paced transition.

MS. LEWIS: Thank you. The chair recognizes Frank Hayden, Calpine Corporation.

MR. HAYDEN: Yes, so thank you. So the question I had, and it kind of goes back to the fallback. If I heard you correctly, you said that you're only considering the trigger to be at the cessation of LIBOR vis-à-vis an action of the regulator or the administrator of the regulator or whatever. Why did ISDA only think of that and not the potential zombie state of LIBOR being a trigger? You defined as only seven banks now report as opposed to 20 banks reporting or whatever it is? I mean what's the wisdom there?

MR. O'MALIA: Well, there are a variety of scenarios that were considered and trying to give something as definitive as possible was the goal. We're taking comment on that and feedback on that. But if it is in a zombie state, where do you draw the line? Seven banks, eight banks, nine; right?

MR. HAYDEN: Yeah, but I think just drawing the line is beneficial.

MR. O'MALIA: Agreed. And hopefully it's the administrator who runs the current rate that can make that call or the regulator that oversees that.

MR. DE LEON: To that point, various working groups are adding additional language besides what the ISDA language has for that case. So some of the fallback language being considered outside of ISDA is more broad for things like that.

MS. LEWIS: Are there any questions from our MRAC members on the phone?

MR. PRIYADARSHI: This is Sam

Priyadarshi from Vanguard.

In choosing the term and spread adjustment methodologies, how will we ensure that the value transfer to legacy positions in cash and derivative instruments is minimized when the fallback is triggered? Only one of the spread methodologies preserves a value transfer or negates value transfer and conceivably neutral? Thank you.

MS. LEWIS: Sam, I think we had a little difficulty hearing you. Can you repeat your question?

MR. PRIYADARSHI: Yes. In choosing the term and spread adjustment methodologies, how will we ensure that the value transfer to legacy positions in cash and derivative instruments is minimized when the fallback language is triggered?

MR. O'MALIA: I think -- go ahead.

MR. DE LEON: The question, Scott, was how do you ensure that there is no value adjustment when the fallback trigger is -- yeah, and I mean, I guess the answer is you can't, and that's the problem. The point of the consultation is to attempt to come up with a method that reduces as much valuation transfer as possible; however, there is no guarantee that there will not be any valuation transfer, and that is probably why most people will trade before getting triggered.

MR. O'MALIA: Our goal here is, as I noted very clearly, this is a derivative fallback. We want to make sure that we have strong compatibility with other fallbacks but we are not, you know, we can't solve all those problems right now. But, and hopefully the comments in the comment period will open that up and kickstart that discussion around the appropriate fallbacks for cash products. But compatibility is probably as close as we're going to come in terms of a true fallback.

MS. LEWIS: Are there any other questions from our members on the phone?

Okay, so I'll turn it back over to you, Tom.

MR. WIPF: Okay. Well, first, thanks to this panel for great work again, and there's plenty of content here today. I think, you know, just to wrap up quickly, I think, you know, we'll all walk out of here today knowing that the time on this is now, not 2021. That we are all, to some degree, in the midst of a very meaningful risk management exercise on our current book of businesses, and that these are not independent work streams. We are sitting between the idea that there are fallbacks that can work, the idea that we have a rate that can work and the idea that there's an ability right now to actually reduce these exposures over time. I think this all interacts. And I think meaningful progress by the industry is the first step forward on getting this done.

So I think the message has been clear and certainly, from this morning, the message is even clearer from the official sector on the approach that we have to take. And I think that seems to be getting more clear every day.

SOFR is a real rate. When ARRC 1.0 was established, it did not exist. Six months ago we didn't have the ability, we didn't have the tools. SOFR is a real rate and we have the tools to actually take this forward. And there are current applications in real time that this rate can be used, whether it be in short dated secured financing products, but there are places where SOFR can actually be used and create the beginnings of that cash activity.

Think about this. Six months ago none of this existed. We now have futures. Next week we will have cleared swaps and we have a functioning benchmark rate that is being used in many ways already.

You know, thinking about the idea that the roll down is our friend. We have tools in front of us today that we did not have six months ago to actually begin to stop digging and to begin to take some of this risk off the table because the value of the fallbacks will be highly correlated to the amount of risk that we can take off the books between now and 2021. And I think that also speaks to the discussions that we had on the last panel with IBA on the utility of LIBOR going forward. So there is a state of the world where legacy positions are reduced, fallbacks work, and then there's a carry forward that is much less disruptive than the things that we put on the table.

So I think with those tools in front of us, I think we look at this today and what we have really is an opportunity for the industry to take the collective action required to solve this very important risk management issue. The tools are now available. The fallbacks are on the horizon. We have tradable product and we have a benchmark. So the opportunity, and I think that the industry has demonstrated that following post-crisis regulation, that we can do big things and we can do big things when we have deadlines. This is a voluntary effort, but the risks are clear. The road forward is clear. And I think for the industry to take this up on a voluntary basis and take the collective action that's required to do the right thing to get us there to reduce the systemic risks that we see will go a very long way in enhancing the trust and confidence that market participants can create.

So I think from a broad perspective, this is an enormous opportunity for the industry to stand tall, and here we are just a year later with the supportive comments that we have from the official sector, with the tools in front of us, with a lot of tools right on the horizon to sort of reduce these exposures and take it forward, and the ability, most importantly I really think, to stop digging. So I think that there's been just so much content delivered here today, and so I'm just going to stop there in the interest of everyone's time, but really, you know, certainly, I want to thank Chair Giancarlo and Commissioner Quintenz for their commitment to this work. I want to thank Commissioner Behnam, Alicia Lewis, and the MRAC for giving everyone here on these panels the opportunity to present this information to you today and to share our thoughts. And I really specifically would like to thank all the panelists and all the people who participated today because you gave me the absolute easiest job in the world. So thank you for that.

And I will pass the microphone back to Alicia.

MS. LEWIS: Thank you, Tom. Well, many thanks to Tom Wipf for serving as our moderator today. We appreciate you giving your time to ensure that we had a dynamic and engaging discussion. And also, thank you to all the panelists, as well as our MRAC members. The MRAC is nothing without you.

MRAC members, so you have heard from our invited speakers that there are Title 7 issues with respect to the transition for which the ARRC will need input from the CFTC. If the MRAC feels that it is important to examine these issues and provide recommendations to the Commission, is there a motion from the body to establish a LIBOR subcommittee?

MR. DE LEON: So motioned.

MR. SHANAHAN: Second.

MS. LEWIS: Thank you. It has been moved and properly seconded that the MRAC establish a LIBOR Reform Subcommittee. Is there any discussion? If there is no discussion, all those in favor of establishing a LIBOR Reform Subcommittee say aye.

SPEAKERS: Aye.

MS. LEWIS: For members on the phone, Derek, aye or nay?

MR. KLEINBAUER: Aye.

MS. LEWIS: Sam, aye or nay?

MR. PRIYADARSHI: Aye.

MS. LEWIS: Carey, aye or nay?

MS. MENDEZ: (No response)

MS. LEWIS: No Carey. Luke, aye or nay?

MR. ZUBROD: Aye.

MS. LEWIS: Okay. Any opposed in the room? Any abstentions? Well, the ayes have it, and we will submit the necessary paperwork to the commission to establish the subcommittee. And we will be seeking MRAC and non-MRAC members to serve on the committee.

So with respect to the non-MRAC members, we would have a similar process that we had previously in terms of the Federal Register notice seeking those who are interested in serving.

So it's now time for closing remarks. Are you for the chairman? Okay. Well, Michael Gill for Chairman Giancarlo.

MR. GILL: Thanks, Alicia. The chairman asked me to express his apologies for having to leave a little bit early. Just as he earlier said, there's no Republican or Democratic divide or viewpoint on the transition to SOFR. The same holds for music. And as such, he is currently tuning his axe for a gig with Democratic Congressman Colin Peterson's band at a Rock and Roll Hall of Fame Event over in the Capitol right now. He wanted me to express thanks for the panelists for their contributions; the MRAC members for your time and effort; Commissioner Quintenz and his staff for their preparation and comments here; and Commissioner Behnam and his staff, most particularly Alicia for all of her efforts in pulling this together.

He also asked that I associate him with Sandy's comments on "glass half full" type of person. The chairman is optimistic that with focus and the right communication, the transition to SOFR will be successful.

MS. LEWIS: Thank you. Commissioner Quintenz?

COMMISSIONER QUINTENZ: Thank you, Alicia. And thank you for all your hard work. And thank you, Commissioner Behnam for hosting this very important meeting. I'm very impressed by all of the work that you have described by such a large and important breadth of the financial community. But I'm also aware of how much work all of you have described is left to be done. This seems to be an issue that affects Wall Street and Main Street. It seems an issue where those interests are aligned but yet the knowledge may not yet be. And so I think that there is a lot of work to do from an advocacy and an issue awareness perspective. I'm glad that we are all talking about how we can be involved in raising that issue to make sure that the appropriate dynamics occur to lay the groundwork for the success.

I think Bill made a very interesting point about any institutions in the government that have the ability to discuss how they can contribute to the dynamics of that marketplace, I think from our perspective it would be very positive if we haven't done it already to start or to continue discussing an important transition for GSC focused entities and understand their potential transition to some of these RFRs. So thank you all for your participation. I learned a lot and I appreciate the benefit of your views.

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

COMMISSIONER BEHNAM: Thanks, Alicia. I'll be brief. A lot today. A big day. A long day. First, special thanks to Alicia. Commissioner Quintenz, the chairman, Mike, of course. Special thanks to Tom. Tom, as I said in my opening statement, you have always, throughout your career, been willing to give time to D.C. to sort of lend your expertise and today is no exception. So we appreciate your feedback, your participation, and hopefully your continued participation.

I also want to thank all the panelists. A lot of groups today on the three panels. Certainly, a lot of contributions from all of you and things that we'll take back.

We have a big role in this issue. There's a lot to do. As Scott kind of mentioned earlier, this is one step in the process. And as I sort of drew my vision for this issue as we just created this subcommittee, there's a lot to do that the CFTC can participate in and I hope this is step one. A little bit of a listening session today to sort of solidify what issues are out there, what issues we need to address, and convening groups like this in the future so that we can potentially put forward recommendations.

Isaac mentioned regulatory action and sort of the organic movement of this event and this sort of exercise that we're going through. Something that's very critical, but perhaps there is an action that the Commission might need to take. And as far as I'm concerned, this was day one or step one in creating a record for some potential future action if things come up down the road.

So, again, I want to thank everyone who spoke today. Special thanks to the ARRC and all its members and all the governing bodies that are participating in this exercise. As I continue to convene this committee on this issue, as I've mentioned to Sandy in the past, I want to be in value add. I want to support the work that's been done. I am not remiss of all of the work that's been done by a lot of people for many, many years. So I don't feel like we're coming in late. But we're just joining the party, so to speak, and we want to be able to contribute from a derivatives perspective any points of view that could solve these very important problems.

More generally, thanks to the committee. This was a good start to I think this new committee. We have a good group as I mentioned earlier. A lot of issues to discuss. That first sort of discussion in the morning which seems like a long time ago shed a light on a lot of different issues that I think we potentially can discuss in the future. So we have a lot to look forward to.

I think I mentioned this on the phone, and I'll just wrap up with this, a few weeks back, but hoping to have about two meetings a year, potentially in November and June, and we will discuss many issues, you know, potentially outlining them in the weeks and months ahead. But in the meantime, enjoy your summers. Don't hesitate to reach out. Look forward to seeing all of you very soon, and look forward to working with all of you for many weeks, months, and years in the future. So thanks. Enjoy the evening. And appreciate all of your work and your service.

MS. LEWIS: Thank you, Commissioner Behnam. I want to thank everyone for attending our second MRAC meeting of 2018. Again, welcome to our new members, and welcome again to our returning members. And this meeting is adjourned.

(Whereupon, at 3:53 p.m., the PROCEEDINGS were adjourned.)

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CERTIFICATE OF NOTARY PUBLIC

DISTRICT OF COLUMBIA

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

(Signature and Seal on File)

Notary Public, in and for the District of Columbia

My Commission Expires: March 31, 2021