U.S. COMMODITY FUTURES TRADING COMMISSION (CFTC)

CFTC STAFF ROUNDTABLE ON NON-INTERMEDIATION

Wednesday, May 25, 2022

9:30 a.m.

BEFORE:

Rostin Behnam, Chairman

Kristin N. Johnson, Commissioner

Christy Goldsmith Romero

Summer K. Mersinger

Caroline D. Pham

U.S. Commodity Futures Trading Commission

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AGENDA

P R O C E E D I N G S

CHAIRMAN BEHNAM: Good morning, everyone. I think it goes without saying that it's really wonderful to see everyone here after a couple of years, breathe some air and life into this building. Important issues. But the Commission here, we are going to be in listen mode.

We really welcome and appreciate everyone coming to town. I know a lot of you traveled. But it means a lot to us. As we know, the staff is going to run this discussion. A special thanks to Clark and, of course, Robert Steigerwald for moderating the discussion.

So we're going to have a good day. Please, everyone, we're going to be respectful of everyone's opinions and keep things moving. A lot of discussion, a lot of issues to cover, but I think we should be able to have a really robust conversation.

So, with that, I'm going to give a couple of seconds to my colleagues and start off with Commissioner Johnson.

COMMISSIONER JOHNSON: Thanks so much, Chair.

Good morning. I want to welcome each of you, established friends, new friends, and first-time visitors to the CFTC. It is a pleasure to be here for today's roundtable. We have a very full list of topics. So I will be brief. I have been allocated a few seconds.

I have met with many of you in recent weeks in my office about the remarkable changes taking place in our markets in the transformative impact of non-intermediation. With today's roundtable, we're taking a crucial step forward toward finetuning our understanding of these critical questions. I have high hopes that today's discussion, an introduction to important issues, will enhance and enrich our understanding of the issues presented, concerns raised, and opportunities for market participants and customers in our markets.

I look forward to meeting any of you that I haven't had the opportunity to meet. Our office doors are open, and we welcome you. Thank you.

COMMISSIONER GOLDSMITH ROMERO: Good morning, and welcome to the Commission. I also want to hear from a wide range of views from the public and market participants as the Commission considers issues that are related to disintermediation. I want to thank the chairman for bringing this forum together. I want to thank the participants as well as the Commission staff. I look forward to the discussion today. As Commissioner Johnson said, a number of you have already met with me, and I look forward to further engagement on these issues.

COMMISSIONER MERSINGER: Good morning. I just want to thank everyone for being here. I know you all have day jobs, and I really appreciate taking time out of your day to come and help us learn a little bit more. And, hopefully, we walk away with a better understanding of some of the decisions we have before us. Thank you.

COMMISSIONER PHAM: Good morning, everybody. Thank you so much for coming here. I think today just really exemplifies one of the proudest traditions of the CFTC, which is to have the public come, market participants come and talk to us about issues that are before the Commission and, really, sharing their expertise and their experience with us. So I thank the staff for hosting this roundtable, and I thank all of the market participants, who have traveled far and wide to come and be here with us today so that we can have the benefit of your expertise. Thank you.

CHAIRMAN BEHNAM: Thanks, everyone. And before I hand it over to Clark, always a special thanks to Alicia Lewis. She put us all together here. So thanks to her.

And, Clark, I am going to hand it over to you.

MR. HUTCHISON: Good morning, everyone, I know many of the people in this room. I don't know everyone. So to the people I don't know, I hope I get to shake your hands if I haven't already. And, of course, a hearty welcome to everyone for the participation today. As the commissioners have said and the chairman, we really appreciate what I consider to be the experts in this field coming today to uncover what it is that non-intermediate clearing would be.

So I'm going to now just go to some practical things to consider for the day. And then I am going to turn it over to our moderator, Robert. So for practical things, as a public service, we have Wi-Fi available. And there should be cards on the table with the agenda so that you know the Wi-Fi information.

Second, importantly, the restrooms are behind you back there. So leave the room, turn to the right, and you'll be able to find them should you need them.

We have tea and coffee in the back, as I think many of you just discovered, as well as water.

The microphones, I think they're pretty self-explanatory, but I think, as you can see, the red light is on. And I'm speaking. There is a button to push if you need it. Please lean into the mike as you speak so we can all hear you. This meeting is simultaneously webcast, and it's important that you keep your microphone on and lean into your microphone so can be properly heard.

If you would like to be recognized during the discussion today, please raise your card like this or hold it like this so that Robert can see it. And if Robert doesn't, Alicia or myself or the chairman will help Robert out in seeing things that he might not be able to see.

Virtual participants. There should be an ability for you to raise your hand virtually. And, just so virtual participants know, you are on screens right in front of the chairman and Robert and I. So we see you very, very clearly. And so if you just want to also go like this and wave your hand, I think it will distract us. And we'll find you if you find that we haven't seen it otherwise.

Abbreviations. I know that acronyms are plentiful in this space. Not all of us know all of the acronyms that everyone else knows. So if there's an acronym that you use, if you wouldn't mind saying what it is? And, then, I think we'll hopefully remember what that means for the rest of the discussion, although I do think we all know FCM. All right.

There will be a transcript of this roundtable, which will be posted on our website.

And, finally, we're trying to limit remarks per speaker for two or three minutes so we have a chance for everyone to speak.

Now, we also have backbenchers and trying to thread a needle with backbenchers. Clearly, backbenchers are here because they're knowledgeable and important. And the first idea would be if a backbencher has something to contribute, perhaps a note can be passed to the people around the table so we don't have a lot of logistical getting up and getting down and confusing things. On the other hand, there are unique probably sets of knowledge that backbenchers have as compared to maybe people at the table for certain topics. And if we need to have a switcheroo, so to speak, please let's try not to have that cause commotion. But a switcheroo I think is allowable, but let's try to keep that to a minimum if we can. What we want is robust participation and certainly expert participation. So I think you get the needle that we are trying to thread. If you will do that, please?

So, with that, I am going to turn over from logistics to the importance of the day. So sitting to my right happens to be a very good and old friend of mine, Robert Steigerwald. He also happens to be a good and old friend of the CFTC, having hosted in the Chicago Fed roundtables where we have participated as a CFTC, but, also, he's been a very good contributing member of our MRAC Committee. So, with that, I want to introduce Robert Steigerwald, my friend, senior policy advisor at the Chicago Fed, to kick off the roundtable for today.

So, Robert, welcome, and thank you.

MR. STEIGERWALD: Thank you very much, Clark. It's a pleasure to be here with you today. I will share with you that I stuffed myself into this suit today for the first time in more than two years. It was a great joy to see what fit and what did not. And I'm hopeful that that will be the worst that happens to me during the day today.

Thank you, Chair Behnam and commissioners, for the invitation to play a role in facilitating this important conversation. I will also share with you that over the past weeks and months, I have had some trepidation about the fact that I said yes when the chair called me. I have written notes to myself to learn to say no more often in the future.

I was a bit worried about the fierce passions and competitive interests that the topic we will address today have evoked in this community. But as time has passed, I will tell you that I have the sense today that this is exactly the right time to have a conversation about the important ways in which technology is reshaping our world. The world of social media and education have been and are continuing to be reshaped by these new technologies. And now we are prepared to think about how fundamental change may or may not come to core market infrastructures upon which the safety and soundness of our markets clearly depend.

I want to thank Alicia and all of the CFTC staff for helping me to prepare for this roundtable discussion.

A few words about my role today. My intent is to try to facilitate a discussion, a conversation of the costs and benefits associated with emerging models of central clearing. My objective and I think the objective of the roundtable is not to solve problems, I think that highly unlikely in the time available to us and the difficulty and complexity of the issues, but, rather, to promote a better understanding of the issues at stake to help us in the course ahead of us to make decisions, to come to conclusions about how we wish market infrastructure to evolve in the coming days.

I will tell you that my own conception of the moderator's role is extremely limited. I hope to guide the conversation. And I plan to do so in a way that I think will be novel. It's more Chicago style, I think, than Washington. I'm going to play Professor Kingsfield from The Paper Chase for any of you old enough to remember that law school horror tale that terrified generations of law students and really try to engage with you. To do so, I will depart a bit from the usual protocol relating to the signaling of your interest in joining the conversation. I will certainly be on the lookout for your interest in joining the discussion at any point. And so please do use your name tents to signal your interest. But I will reserve as a sort of moderator's prerogative the right to try to guide the conversation in a way that I think is helpful to the overall discussion at hand while at the same time looking to find an opportunity to give each of you an opportunity to speak and to make sure that the conversation is informed by a variety of perspectives. My colleagues will find me or throw things at me or whatever it takes to make sure that I am seeing you and attending to you and offering you those opportunities.

Before I go into any further remarks, I

apologize, but it's incumbent upon me to remind you that my remarks today are solely my own and not those of the Federal Reserve Bank of Chicago or the Federal Reserve System. In fact, I hope not to be making very many important remarks at all as you are the experts that we want to hear from. I would not feel comfortable, though, if I didn't make at least a slight attempt to shape the conversation.

As many of you know, I work in the Economic Research Department at the Chicago Fed. And so I'm very influenced by economic thinking in issues or relation to issues concerning financial regulation and market infrastructure. And so I'm reminded naturally of the famous remark or construction of change in market institutions offered by the Austrian economist Joseph Schumpeter at the end of the second world war. He coined the famous term "creative destruction" and said it was the essential fact of capitalism.

More recently, economic commentators have referred to this concept of creative destruction and noted that it is a fragile process, exposed, as it is, to political shortsightedness, inadequate contractual environments, and financial underdevelopment. I take from this a suggestion that we think not only about the creative but the destructive aspects of change as we consider the issues before us today for discussion.

At this point, I would like to introduce my good friend and a very good friend over many years of the financial markets group at the Federal Reserve Bank of Chicago: Dr. David Murphy. David is a visiting professor in the law school at the London School of Economics and Political Science. He has published extensively on derivatives regulation, central clearing, and prudential policy, and is the author of a recent text titled, "Derivatives Regulation: Rules and Reasoning from Lehman to Covid."

David I think can be useful in setting a foundation for the conversation we're about to have. And after David's remarks, I will come back in and explain to you how I would like to start the roundtable discussion proper.

David?

DR. MURPHY: Thank you very much, Robert. And my thanks to the chairman and the commissioners for their very kind invitation to speak and to Robert, Alicia, and Clark, colleagues, for their peerless organization, very much appreciated.

I'm afraid I have a disclaimer, too. I apologize. I have consulted for a number of firms around this table on various aspects we are going to talk about today. But, as I'm sure will become clear in two minutes or less, my views will definitely be my own, rather than those of any particular organization, including LSE.

So I don't want to talk about crypto. I want to talk about the structure of clearing. And I think it's important to bear in mind that clearing has developed over a significant period of time. Something recognizable as a CCP, central counterparty, was evident on both sides of the Atlantic from roughly the 1860s depending on exactly what your criteria are. And since then developments have been incremental, evolutionary, and very much driven by market participants in the large. We've built this thing slowly, it's important to bear in mind.

On some occasions, innovations were adopted rather late and only after stress. As a great example of this probably most of you have not had a huge amount of exposure to the deep history, if you like, of these markets, but one of the most important markets of the mid-Nineteenth Century, possibly the most important futures market, was Liverpool cotton. In that market, there was a proposal for margin, a formal proposal from a major clearing member, that the clearinghouse adopt margin in 1861. By 1883, they still hadn't done it. At that point, an American speculator, evil American speculator, clearly, tried to corner the cotton futures market, failed, failed with enormous debts. And, as a result, 12 other brokering firms, members of the market, failed at the same time. So there is a cover 12 event in modern terminology. Liverpool learned the lesson for this innovation margin was actually pretty important and adopted it pretty soon thereafter. So that's an example of failing to get with the modern trend.

On the flip side, 106 years later in New Zealand, there was a clearinghouse of, well, many things, but including the benchmark New Zealand government bond future. Again, a large position was acquired by a market participant. He was actually a fraudster. He claimed these were client parts, positions when they weren't. And when that went wrong on him, he fled. He was actually arrested at Tumbridge Wells Railway Station with a suitcase full of cash. So it's an almost movie-worthy example.

But it turned out that that position was not auctionable. There was a meeting overnight to try and sort out the default management before the market opened. It couldn't resolve it. And, as a result, the contract was torn up. So that CCP's waterfall turned out to be margin, then tear up. They had a significant amount of default insurance, but that could not provide capital in time. I mean, it wasn't funded. There was a serious loss of confidence. The CCP needed to do something fast so what it did was tear up.

So that's an example of something where a waterfall looked as if it was innovative and modern but turned out not to be. So you can get it wrong in both ways, in other words. You can fail to innovate and, as a result, get into trouble. You can innovate too quickly or too riskily and get into trouble.

Technology is also really important in this context because that makes new things possible. As recently as 2005 -- and I apologize to colleague from ISDA for quoting this number, but if you look at the 2006's operations benchmarking survey, nearly 20 percent of credit derivatives trades in that year for market participants had to be rebooked due to errors, now, manual processes all over the place. There was no standardization. There was no automatic flow. We've come on a long way since then, ladies and gentlemen. We've figured out how to make markets better, quicker, and safer. And that's great.

So, given all of this context, I really support the Commission's desire to have an open conversation about the benefits, costs, and risks of the new clearing model that technology has enabled. What I see this as is a dialogue about what would make us feel better about a clearinghouse in this space using this mode and what would make us feel worse. This is not a yes/no, I like it/I don't like it, conversation. This is a this would help/this would make things worse or add-risk-type conversation and exploring the design space, figuring out what features of the engineering of this model are good and what are less good is the conversation I hope that we can have today.

Thank you very much for your time.

MR. STEIGERWALD: Thanks very much, David. I hope that all of us found your remarks informative and useful for purposes of today's conversation.

It also occurs to me that I should take note of the speakers who will be joining us in this conversation who are unable to be with us in person for this day.

Dennis McLaughlin, welcome. Thank you for taking time out of your day from the U.K. And I also see Demitri Karousos on the screen. Demitri, I understand you find yourself in a difficult situation that prevents you from coming out of your cocoon for the moment we hope everything works out well, and we look forward to seeing you again in person very soon.

So now I'd just like to make a few remarks about the agenda you have before you. I thank Alicia and her staff for putting together a very detailed outline of how the conversation is meant to proceed in terms of timing and sequence and such.

You will note that I have not added any thematic suggestions to the modules that are reflected in the agenda. That's intentional because I'm hoping that we will start a conversation and that it will be self-continuing, so to speak, self-perpetuating.

In broad outline, what I hope to do is two things: spend the first module or as long as is needed or useful discussing what is this thing that we are calling non-intermediated clearing. It seems to me, certainly, it has taken me weeks and months to wrap my head around what that means after many years of thinking about traditional intermediated markets. So I think it's incumbent upon us to understand a little better what actually is this thing, what is at stake.

And in a second step, whenever it seems appropriate to move to that step, I'd like for us to then start thinking about the systemic and idiosyncratic implications of this new thing once we have a better sense of what it is.

So that's the only thematic guidance I have to offer. If we rapidly reach a satisfactory understanding of what non-intermediation and clearing means, we will quickly move to a discussion of implications. And we can conclude this meeting whenever it seems appropriate to do so. The only controlling factor is your desire to think through issues and share your perspectives with us.

As you know, we prepared a list of stylized facts that is meant to support a discussion today of a hypothetical DCO, or derivatives clearing organization, that we after very great effort trying to come up with an appropriate name we have decided to call DMDCO. That literally just means direct and margined DCO. I was voting for new DCO, but that didn't seem to add the sizzle that that DMDCO has. So there we are.

The game we are going to play here today -- and I assure you that I understand it is a game and we will lapse in following the rules of the game from time to time -- is that we are discussing this thing that has no application before the CFTC. It is not meant to be a real proposal of any sort. And, yet, of course, it is a shadow version of a very real proposal. So we'll be slipping back and forth across that borderline.

I don't know how comfortable that will be to you. I studied philosophy at university. So this seems like akin to counting angels on the heads of pins. So it shouldn't be too difficult, I think.

No. So to be serious about it, I hope that we will be informed by actual proposals that are in the works but not obsess about particular details concerning any one of those ventures but rather think more broadly about the big issues. And I hope the stylized facts will assist us in doing so.

So having gotten that far, so here's the un-Washington thing about it. I'm going to move around the room. And I'm going to try to engage with you in a conversation.

So, to start the conversation, I'd like for us to think about -- and I know you can't read this in the back of the room, but it simply says non-intermediation and inverted commas in clearing. And, as I said, our first objective for today is to understand what that might mean.

I'm relocating myself into the bullring. And I'm going to ask Mr. Bankman-Fried. I apologize. I had hoped to have the opportunity to meet you before the meeting, not to put you on the spot or anything. And playing this game that we're talking about, DMDCO, would you help us understand what the key features of a non-intermediated model of clearing are?

MR. BANKMAN-FRIED: Yes. So the first thing I'll say, just on the what even is non-intermediated clearing, is that there may or may not be intermediaries in such a system. You could absolutely imagine and we do envision a world in which there is collateral, initial margin held directly at the clearinghouse, posted prior to positions being formed, the risk model of the clearinghouse, but in which there still could be intermediaries sitting between the clearinghouse and customers who want to access it in that way.

But the core feature of it that I would say is that the risk engine, the risk model, and the collateral is all at the central counterparty. And there are advantages and disadvantage to such a thing. I think there are a lot of advantages to, at least in a lot of systems. Basically, the way I envision it is margin is posted with the central counterparty, with the DCO, prior to positions being put on. That margin is treated as the risk or a Z collateral for all positions, rather than credit or handshakes or anything like that. And the DCO is effectively running the risk model and margin call model based solely on the collateral held with the clearinghouse.

And what that enables, then, is in theory, any type of participant could go straight to the DCO, to DMDCO, through the DCM, obviously, for trading, with their collateral posted with the DCO. Their order is going straight there, again possibly through whatever interface or intermediary they feel comfortable accessing it from, but without those intermediaries needing to serve as the first in the line of fire from a risk perspective as the mutualization and without them needing to make credit assessments or things like that because the collateral is posted directly to the DCO. That sort of is how I at least envision it.

MR. STEIGERWALD: Would I be correct in thinking that a model of the sort you just described is uniquely suited? Everything here should be taken in brackets -- right? -- as potentially assuming the integrity of the design and the implementation and all of those important details but uniquely suited to a market that operates in continuous time. Is that an essential element or foundation for the risk model that you are describing?

MR. BANKMAN-FRIED: I don't think it's an essential one, although I think it's a valuable one. And maybe to give, for instance, a hypothetical example, let's pretend you had an asset class that traded 24/5 instead of 24/7, so an asset class that closed over weekends. Right? That would obviously mean that in some sense, you could have a real-time risk model, but, in other sense, your risk model can't really be doing anything at 3 p.m. on a Saturday because there's no new market data. If there's no markets, there's no liquidity.

This can still work, but the way that I would envision that is, effectively, you have this big volatility cliff over the weekend. Right? And you can have a model for this volatility cliff the same way you could have a model for anything else. And you say, look, how much could markets in an extreme but plausible scenario move over the weekends?

Let's say 15 percent. Right? I'm making this up. Right? And, then, that would mean, well, over weekends, such a model would need to require an additional 15 percent margin from all participants.

So I think what I would say is to the extent that the model is not operating 24/7 in real time, you need to be whenever there are gaps in it running adding an initial margin to cover the potential volatility over that period, but I do think that it is a model which functions very well in real-time environments given that it is a single central counterparty with all the margin with the risk engine that can operate in 24/7 without needing communication.

MR. STEIGERWALD: Thank you.

So, Mr. Downey, this seems like a lot of interesting things on the table there. What's your reaction so far to the conception of a highly automated risk and default management arrangement operating, in particular, though not necessarily, in relation to markets that trade continuously without the intervention of an intermediary as a necessary feature of the model?

MR. DOWNEY: Yes. Thank you.

So I think I would start off with, obviously, I want to thank everyone for us having the opportunity to be here and having this conversation. It's an important one on potential alternative market structure. So we appreciate that and look forward to more dialogue.

But in regard to the model as described, I think there are a couple of assumptions that are being made. And one is essentially that an algorithm can replace capital. I know there's been some conversations previously about what capital is and what capital means. And I want to clarify that margin and capital are two completely different things in the world of financial markets. I think in a layperson's, the way that they would envision this, they think they potentially are the same thing, but they're actually complements, not substitutes.

When you deposit margin, whether you're an FCM, whether you're a direct market participant in some other sort of way, that margin is no longer capital. And that margin, by definition, is designed to cover 99 percent to 99.5 depending on the way the margin is structured of market moves. In other words, it's not designed to cover tail risk.

In the market structure that exists today, that tail risk is covered in a couple of different ways. One is by virtue of the capital that is being held at the participants, the direct participants, in the market. And that capital is triggered off of margin and exposure depending on the way you look at it. It's triggered off of margin in the CFTC world, where FCMs have to hold 8 percent of margin in capital. And that capital is there to the extent that the margin is not sufficient in the case of a default. And in bank capital terms, it's a function of the potential future exposure.

So I think the challenge of the model as described is essentially it places reliance on margin, and it eliminates the rest of the capital in the system and places reliance on an algorithm. And I would just point out that we've seen that movie before. In fact, we saw it very recently with the algorithmic stablecoin Terra, where there's an assumption that the algorithm could make up for the lack of reserves.

And so the concern, at least from the perspective of the world today versus this proposal, is that there's insufficient capital in the system. And an algorithm itself can't make up for that.

MR. STEIGERWALD: So taking all of that as you say, I wonder how you see the traditional model of intermediation working into a market that operates in continuous time. Is it adaptable enough to deal with situations where sharp market movements may occur while an account holder or clearing member is not operational in its home base? Is the traditional model infinitely adaptable or do we need some kinds of technological enhancements to make the system work?

MR. DOWNEY: I think that's a good question and the reason that we're here discussing it. I think we view the traditional model that exists today with all of the resources that are available as quite adaptive.

And this performed in many different circumstances. If you think about the 2016 election, there's a lot of volatility overnight. If you think about in June of 2016, the U.K.'s election to depart the E.U., there was a lot of volatility overnight for U.S.

markets.

In both of those circumstances, the market performed quite well. That doesn't mean that there aren't technological innovations that could continue to improve that, but I don't think we've observed as of today any sort of market moves in overnight hours that would suggest that the model doesn't work in the world that we live in today.

MR. STEIGERWALD: So let me get the intermediaries into the conversation. I know you've been waiting for this moment, Mariam.

By the way, I'm avoiding this Terra incognita that I'm not supposed to step into. So if it seems that I'm taking the long way around, it's for good reason.

But let me come into this territory. So, Mariam, what do you think about what you've heard so far? The conversation today is about non-intermediation. Do you regard that more as a threat or as an opportunity to your firm?

MS. RAFI: So I think our primary interest is in customer protection and stability and soundness of markets. One of the things that we've been looking at very carefully with the proposal is how the controls in place are different than those provided by a traditional FCM. So one of the first things that we're very concerned about is customer protection.

Obviously, there's a very well-documented bankruptcy regime as it relates to FCMs and protection of customer collateral in the default for an FCM, which doesn't exist in a direct clearing model as it relates to DCOs. You might have contractual protections, but those are different than the protections in a bankruptcy scenario. And I think that is an incredibly important point that needs to be examined as you look at customers in the model.

I think, further, FCMs perform a variety of control mechanisms, such as customer disclosures and ongoing information provision, Bank Secrecy Act requirements around AML and KYC that are different than are required for a DCO.

And, then, finally, we act as an additional check in looking at our customers' creditworthiness and their ability to service the obligations that we're putting through a DCO. And then we stand behind their commitments. So none of that really exists in the same level in this model.

Further, the requirement to have an algorithm automatically liquidate client positions, particularly if you have a situation where it is a 24/7/365 model, where you can't post margin in real time, exposes people further, the questions around customer protection for additional margin posted, which would serve as a buffer to the automatic liquidation, could be a disincentive for people to post additional margins.

So there are a number of concerns that I think raise safety and soundness concerns.

MR. STEIGERWALD: Thank you.

So I'm reminded that Dr. Murphy and I had a conversation at dinner last evening. And I was thinking about what seemed a historical curiosity to me that the king, the king of England, at least, and other principalities in Europe, in, oh, about 1200, 13, 14, 15 hundred, A.D., got to decide when markets would be held. And there was a select day or week, perhaps a month, each quarter when a market would take place. And, of course, that was necessary to generate sufficient liquidity for trading to take place. The buyers and the sellers had to be in the same place at the same time. They had to have monetary instruments of some sort with which to trade.

But the idea of a market operating during a business week was unknown at that time. And the idea of markets operating in continuous time 24 hours a day, seven days a week, 365 days of the year was unimaginable.

So I wonder, Mariam. Again, I hear on one side of the room a preference for vanilla and on this side of the room a preference for chocolate. And I'm not quite sure how to think about changes that are happening regardless of your preferences that will reshape the nature of intermediation, even if it's there. I wonder how you think about the technological challenge of changes in underlying markets of the sort we're talking about.

MS. RAFI: Yes. Look, there's no question that markets are getting more digitized, more electronified. And the technology that underlies not only the DCO systems but the FCM systems needs to keep up with that as well. And that's something that we're fully cognizant of and working on.

We do have intraday risk management systems as well. So that if there are major market moves, we call clients for collateral intraday. So that exists. I don't think that the two are mutually different. I think what we're concerned about is if you move to a new model, that the financial resources and capitalization that underscores the existing model aren't degraded because of an assumption that the technology can replace that.

MR. STEIGERWALD: So would I be correct in characterizing that as an argument for substitution, replacement, of some equivalent assurance of safety and soundness, not a wholesale elimination of the basic principles we like to see embedded in the construction of our market infrastructures?

MS. RAFI: Yes. I think you need to have a level playing field. So the obligations and controls that exist in the existing marketplace should also be there for any new market structure.

MR. STEIGERWALD: Right.

MS. RAFI: And, now, I mean, that's very important. I appreciate that you have brought us to the point where we get the competitive angle out into the conversation as well because it's not just a question of technical risk management, engineering. It is that, but there are important competitive concerns at stake, as there always are with creative destruction scenarios.

MR. STEIGERWALD: Tom, I feel comfortable down at this end of the room. I don't know. It has something to do with the hair.

You've been around. You've seen a lot of changes. I wonder. How do you feel about the conversation as it's progressed so far today?

MR. WIPF: Well, I think when you talk about vanilla ICE cream and chocolate ICE cream, there may be strawberry ICE cream you want to find today as well. So I suspect that when we when we think about these things, I think the way to take this conversation to a really constructive place is to think about things that I think we can all agree on, which is that reduction in settlement cycles reduces potential exposure. I think that's hard to argue against.

As we think about this stuff, we're really also digging in in terms of taking this down to the plumbing. Right? And we think about market structure. And I think outside rooms like these, there's a lot of I think interchangeability of an exchange versus a clearinghouse so when we when we think about changes in market structure, the question then we always can get to, can the clearing and settlement infrastructures support those changes in market structure or what we used to call below the blotter? When we think about separating that out, I think the conversation will always find its way back to, what is the plumbing? We're looking at, obviously, very new plumbing here. And then the question is, how will that play out during business as usual, I think which we would understand, or during many of these stress periods that I think we've talked about? How does that work out? How do the storm drains work?

And I think if we can separate the two topics of market structure changes and clearing and settlement changes, we've seen this. We've seen this with high-frequency trading. We've seen this in a lot of places where the speed that's taking place at the trade level maybe oftentimes will outpace that. So I think the conversation would be let's get right to the plumbing, which is lay these, both models, out here end to end and think about how they play out over periods and then I think take that to the next order of business, which is the "What thens?" during a stress period.

MR. STEIGERWALD: Thank you.

So would I be correct in understanding you to be saying that there are changes underway that may have specific application and require specific tailoring to particular markets but that there's a broader emergence a broader phenomenon occurring that we have to think about the costs and benefits of? In other words, I thought you described this as a market structure issue, which I very much agree with.

MR. WIPF: Right.

MR. STEIGERWALD: You see, I did have a statement, after all.

-- rather than a crypto issue.

MR. WIPF: Right.

MR. STEIGERWALD: Is that a correct

understanding?

MR. WIPF: I think that's right. I think, obviously, when we again put these models side by side, think about how that plumbing works. And, then, you can think about how different assets will perform, but, frankly, when you look at it, it's how will this work across a period of stress, either model? What is the value of the cushion, the cushions that exist, and what is the value of some of the actions that would exist in the proposed model?

So I think, really, digging in, again, the constructive use I think of this day will be to get down to those plumbing issues and think about what enhancements are there because if we kind of take this back up to just the overall market structure, that means that sort of the trading piece of this. I think we'll lose sight of the fact that we have to really just dig down into the plumbing here today.

MR. STEIGERWALD: Thank you.

So I'd like to call on my good friend Dennis McLaughlin.

Dennis, I can't see you yet, but I think you'll be -- there we are, coming up on the screen. Dennis, I think you may take a rather different view. You may emphasize the importance of the technical features, the what I call integrity because I haven't managed to figure out a better term for the particular asset that is proposed for purposes of this non-intermediated model of clearing.

I wonder whether you'd share with us your views about the broader market structure issues as well as any thoughts you have about the application of that market structure to crypto assets, in particular.

MR. McLAUGHLIN: Thank you, Robert. And thanks to the Commissioner Behnam and the other commissioners of the CFTC for organizing this.

I have no conflicts to report. I have no dog in this fight. So I'm not going to comment on intermediation versus non-intermediation, which is best. All I can say, though, is that we're using the same words to mean different things. And the old hearing and settling and exchanges for the old-fashioned non-crypto assets ultimately come down to a legal concept of settlement finality and close out many, which are absolutely the key to making sure the old system works.

Unfortunately, there is no such thing as legal settlements for crypto assets. What it is, is a kind of probabilistic notion of settlement where enough consensus has occurred in the blockchain so that there is a very low probability that the crypto asset has not settled. And that's where you get into problems because what's in your wallet, can I use it as a hedge position, for example, if I'm hedging crypto against futures. Well, if you just stay within the futures world, we're okay because we can deal with that, a piece of paper, but the minute we combine it with crypto and get this wallet which has both kind of assets in there, the word "settlement" means something very, very different. So you could be in a situation where one leg is settled and the other leg is probably settled. And that has implications that reverberate around the system.

So as we saw about a year ago, although we're talking about trades and valuing portfolios in literally milliseconds, the actual settlement, probabilistic settlement, didn't become regarded as being settled in the industry for a number of days. The average settlement time was close to three days. That's the average. So there were many crypto trades that were not settling and that had extended out days and even weeks.

So that is a big issue to deal with where you have the overlay of very, very fast valuations with an asset which doesn't really settle in the old sense of the word. So there's no I think legal framework to deal with that. And that to me needs to be thought through a little bit better.

And the last thing I'd say is that when you're trading in microseconds, it sounds fantastic, and when you're valuing in microseconds, but, as Tom said, we've seen this movie before. Things happen that you're not prepared for when algorithms start interacting with each other. We get flash crashes.

Now, if you have a flash crash and you're valuing these portfolios so frequently and closing them out, what happens during a bit of a flash crash? Well, we're not really sure many times what's causing the flash crash, but we could be in a situation where we automatically just throw all of these investors into the backstop liquidity providers that suddenly have an avalanche coming in there. And it's all happening in a very, very short timeframe because it's all automatic.

So I do think we need to think about some of these issues before we come clean on which side of the coin we end up.

MR. STEIGERWALD: Thank you, Dennis. Thank you, Dennis.

Demitri, I see that you want to join the conversation. Please?

MR. KAROUSOS: Thank you, Robert. And, once again, I just want to thank the Commission and everyone for allowing me to participate remotely. I returned from overseas travel to a COVID house and, despite the fact that I live just down the road, thought it more prudent to participate remotely. It's good to know that not only the clearing community but its regulator stands ready to respond in real time to rapidly changing circumstances. So thanks again.

Robert, as you know, Nodal Clear is the last clearinghouse to have launched an FCM intermediated clearinghouse with margin. We clear for our parent company, Nodal Exchange, but we also are the clearinghouse for Coinbase derivatives. And we welcome competition, of course. What I'd like to do is maybe perhaps challenge a narrative which appears to be emerging here of this discussion, being one of innovation versus incumbent reticence to change.

We don't believe a major wholesale regulatory framework rewrite is required to support innovation. We are an incumbent and are big supporters of innovation. We introduce granular risk management to the power sector, launching locational power contracts to allow participants to manage their true risk exposure. We institute full portfolio risk checks in real time to approve transactions all the way back in 2009.

And before clearing for FairX, now Coinbase derivatives, we built position tracking at the retail customer level so that we could measure risk throughout the day; continue to support accurate, complete intraday margin runs; and not rely on clearing members for accurate positions. So we support innovation.

Our issue here is that we don't actually see much innovation here. Instead, we see a combination of existing practices presented as being innovations or decisions that have already been considered and rejected for good reason.

So, as I mentioned already, some clearinghouses today already conduct real-time full-portfolio risk checks before accepting new positions. Likewise, many FCMs, including retail folks' FCMs, typically perform this function today, requiring that real-time checks and proposed orders occur before submitting into an exchange-matching engine.

MR. STEIGERWALD: Okay. That is an important point. I don't want to intrude on your remarks too much, but I would ask you to wrap up your comments. And we'll move on and come back to the points you've raised, Demitri.

MR. KAROUSOS: Maybe I will pause here, then, Robert, and save the rest of my comments for some of the implications. As you suggested, we will address that later on.

MR. STEIGERWALD: Okay. Yes. I think that's the right allocation of time. So I do hope that we will come back, however, to the point you make about some of these approaches to risk management being used today at the FCM level. And I would invite everyone to think about what it might mean to employ these same or similar approaches to risk management, and especially default and liquidation management, at the central node, at the DCO, as opposed to in a more distributed way.

So some issues that have legal significance but also important implications for customer protection have been raised so far. So I'd like to ask Todd Phillips, Center for American Progress, to address some of what you just heard.

MR. PHILLIPS: Great. Thank you.

I wanted to just respond very briefly to what the British gentleman who just spoke on the TV -- can't remember his name --

MR. STEIGERWALD: Dennis?

MR. PHILLIPS: Dennis. He mentioned about settlement finality, specifically with crypto. It's my understanding that most crypto exchanges, including the one that the CFTC is considering, settle transactions off blockchain. So everything happens on the exchange's own ledger. And things don't actually end up on the public blockchain.

One thing that I'm not very sure of because all of these things happen off chain is what the legal final settlement issues are. That's one thing that I don't think the legal system has really addressed. And it's one thing that should be considered as all of this is being contemplated.

I have some other consumer protection issues, but I'm happy to raise them later.

MR. STEIGERWALD: Great. I think that's the right division of labor for the moment.

Just to broaden the conversation I, saw Sam very much engaged with that conversation. And I am tempted to come back. I'm sure you will have other opportunities during the course of the day, Sam, but I'd like to diversify the conversation and come to Thomas.

Is it Chippas?

MR. CHIPPAS: It is.

MR. STEIGERWALD: Okay.

MR. CHIPPAS: Somebody would add to the comment that I'm not quite sure what Mr. McLaughlin is referring to but the events of some time ago, somewhere between 1861 and now, I imagine, when these blockchain transactions did or didn't settle, but most of the, if not all of the, spot activity that takes place on centralized exchanges settles in real time within the confines of the exchange or clearinghouse depending upon how the entity is organized. So that finality does take place. And it's probably a separate roundtable for another day to talk about finality on a public blockchain.

I'd further add some comments were made earlier to differentiate between margin and capital. The word "credit" is thrown around quite a bit as well, too. And perhaps there will be time today to talk about the difference between those and how credit and the ability to pay is something that a DCO typically doesn't go after the end user for when they fail to pay debts that they owe. And perhaps FCMs have a different approach in reconciling those views as that's a substantive difference between the proposed models.

MR. STEIGERWALD: Thank you.

So I'm thinking about the trading firm interest in this discussion. So I think you -- Mr. Creamer, is it?

MR. CREAMER: Creamer.

MR. STEIGERWALD: Perhaps you will share with us your thinking about some of the issues that we have been discussing so far.

MR. CREAMER: Sure. And thank you all for having me today. I think for me, it would be hypocritical to talk about change and disintermediation when our industry from -- electronic trading firms really disintermediated the trading floor. Right? I mean, lots has changed.

From my perspective, I struggle a little bit. I know the complexities of how many markets trade and how they need to be harmonized together. And I also really appreciate the simplicity of the model that has been created, this disintermediated model. And I'm trying to reconcile how these things fit together and that's the hard part for me from a trading firm of what are my risks. If I'm trading a complex portfolio and there is an automated liquidation function that can happen 24/7, could a flash event in any product make my company insolvent?

And I think that there's surely a solution. I think that the challenge for the industry, which prides itself on innovation, is, how do you embrace a new model, a new way of thinking, and find a way to apply it in one that won't become disruptive to the critical markets and ecosystems that we all rely on? How do we advance? It can't be just no, and it can't be a full yes. That's what I struggle with.

And I hear in a lot of conversations and outside of the ones brought up today many views on it is either one or the other. There is no way that we can look at this model and find a way to embrace it without it becoming a systemic problem throughout all the other markets that we rely on, leaving us with no way to innovate and test new things.

I hope that as a group and an industry, we can find a way to do this. I think it will advance things further, but, also, coming back to some of the comments earlier about the slowness of the process, I feel that we shouldn't rush into anything. And we need to think through this and how it will work and not make any rash judgments on it but also not be completely stuck in the mud, so to speak.

MR. STEIGERWALD: Thank you.

Gerry, we've been talking about market structure, intermediation yes or no. We've been talking about crypto a bit. What about retail customers? That's got to be something that's foremost in your thinking about this issue.

MR. CORCORAN: Yes, for sure. This has been a great debate. I think we're getting a lot out on the table. But I think there are a lot of things that many folks don't understand that exist today in the marketplace we live in.

First of all, retail traders, even semi farmers and ranchers, they're all subject to pre-trade risk management. Their trades don't get into the marketplace unless they have the cash in their account. Okay? So that that's one gatekeeping risk feature that a firm like RJO would provide.

Then where do we go from there? If the markets move against our customers' positions, we don't automatically liquidate these customers. We know their balance sheets. We know their history.

There's also a series of intermediaries in there, in some cases in introducing brokers as an intermediary or credit buffer. Well, there's plenty of credit buffers, but principally it's the FCM's credit buffer.

And that's what I see going away in this model, that the FCMs -- it is not about competition. We've been around 107 years, you know. Bring on the competition. We've embraced technology, and it works.

But the FCM's $160 billion of capital that sits between the exchange and the customers is really, really important to when an exogenous event occurs. Okay?

There's been some plenty of them where -- in my world, we had mad cow disease. We had the cattle markets go limit, limit, limit, limit, limit. We would have wiped out all of the open interest in an automatic liquidation event. We had WTI go crazy on a Thanksgiving event. Okay? The market would have been wiped out on auto-liquidation.

So auto-liquidation is not a new technology, and it can be a weapon of mass destruction. It cannot just be a yes or no decision. There has to be credit involved. It has to be logical. And it has to say what's going to happen because if it's used just a yes or no, you're in or you're out, we are going to have market contagion just from that. It will create boom, boom, boom, boom, boom, a cycle. A flash crash has been mentioned before. We just have too many other things to worry about.

What about a portfolio? What about an option portfolio? Is there theoretical pricing in this model? Do you blow out an option portfolio based on theoretical pricing? What about an illiquid product that doesn't trade very often? FCMs play this role. We know where option portfolios are, no matter where the market is. We go, this is really priced here, it's not priced where the market is. So if it's price where the market is, sometimes you might blow out an option portfolio that doesn't need to be blown out.

So it's so complex that the FCM plays a really important role of evaluating the credit and really determining, is the customer's position worthy of being blown out? Has the customer got a big balance sheet? What if it's a large multinational Fortune 500 company that on Thanksgiving, the position goes against them? Are you really going to blow them out of the market just because you have auto-liquidation? So I think it's really something that has to be drilled into.

MR. STEIGERWALD: Thank you. Thank you, Gerry.

Neil, so one of the things that I think about in this context is contract continuity. I've argued in some of my semi-academic work that the thing that is most unique about central counterparty clearing is its propensity to a limit to assure contract continuity, which I think is something that hedgers, for example, take very seriously, as Gerry has pointed out.

I wonder if you would share your thoughts about that or other aspects of the conversation that you would like to.

MR. CONSTABLE: Yes, absolutely. So, first off, thank you for having us here. One of the things that I think Fidelity wanted to be on this stage with all of you for is exactly this retail issue whereby over history, Fidelity has continuously supported innovation because it often creates more access to markets for more people across the country at the end of the day. We do, of course, in one way, shape, or form, help millions, tens of millions, of Americans take care of their financial well-being. And so as innovation can be brought to bear to allow that extra access, whether it be for individual retail investors or create new ways of intermediating or tweaks, I should say, on the intermediation model that many of my colleagues here have been talking about, we certainly support that. And so that aspect of it is fantastic.

But I also -- and I think someone else said it better than I will, but I don't know the question is to go -- it's not whether we go zero miles an hour or 100 miles an hour. It's certainly somewhere in between. And there's a lot of gradation in between there.

And so one of the things, just to put make that more concrete, I think it was the gentleman from the CME was mentioning technology and capital are not are not fungible -- right? -- but as technology evolves, it could well be the case that with the right application that technology suitably studied and implemented, the system is, in fact, overcapitalized.

Right? We might be able to extract some capital from the system and redeploy it elsewhere. And I would like that to be the framing of the debate because at the end of the day, as many people here are much more versed in history than I, the major crises, even in my lifetime, '87, '98, 2008, were ultimately saved by a massive injection of actual unencumbered capital that could be brought into the system.

So it's it seems hard to imagine that an algorithm can completely replace that, but it may well be able to do part of that job and in doing so open up access to our clients and create new ways of everyone around the table here dealing more efficiently with their clients.

MR. STEIGERWALD: So there is a free lunch, after all.

MR. CONSTABLE: Oh, I wouldn't say that.

MR. STEIGERWALD: I'm just joking because I doubt very seriously you'll convince my employer that we can reduce capital in the financial system, but God help you if you can.

MR. CONSTABLE: Capital for the purposes of clearing markets, it may be overcapitalized.

MR. STEIGERWALD: I understand.

MR. CONSTABLE: That's a question, not a statement.

MR. STEIGERWALD: It's a serious question in bank regulation as well.

MR. CONSTABLE: Yes.

MR. STEIGERWALD: It's just that we do seem, as Dr. Murphy has explained eloquently in his new book, to have a mindset that more is always better when it comes to capital, irrespective of the fitness for purpose.

So I introduced the question of hedging, not realizing that FMR is Fidelity. I apologize for that.

It's my friends from the farm and ag community that may wish to say something about the importance of hedging and how you feel about this new technology if it were applied to products that your membership is most concerned about.

MR. NEALE: So, Reggie, maybe I can start. Certainly, National Council Farmer Cooperative is supportive of innovation. It's got a positive connotation to it. And we're all looking to move to the next level. However, in the context of this discussion, I think we need to take significant care and understand the distinctions between those who use these markets for hedging and those who use these markets for speculation.

So in a scenario with the auto-liquidation scheme, a crypto trader goes to bed at 11 p.m., wakes up at 7 a.m. And, all of a sudden, he's been knocked out of his position or liquidated, a bad day certainly but perhaps not as bad if we considered the same scenario for the American farmer. He goes to bed with a corn position to hedge his physical inventory at 11 p.m., wakes up at 7 a.m. or probably a bit earlier, and he has no position. All of a sudden, the value of his inventory goes down considerably. And let's also consider the cascading effects that could happen from that situation for a natural hedger. He's got cashflow obligations. He may have loan obligations that he may no longer be able to commit to in that situation.

The other point to make in this type of structure I think, as Gerry eloquently pointed out, is this 160 billion of capital sitting in between the customer and the exchanges. That buffer is important. Without that buffer, I think we significantly increase the customer-to customer risk that would come into play with this model.

MR. STEIGERWALD: Please.

MR. GRIFFITH: Thanks.

So I would agree with everything Nelson said. And I think Gerry brought up some very important points. And just maybe to speak from a large commercial hedger, I mean, when risk departments look at risk from the commercial hedging standpoint, you've got to look at both pieces of the pie. I mean, when they get nervous is when the futures positions are low.

And so as we look at this entire model, I think we have to assume that this opens the door for it being applied to the ag markets, which is our number one concern. And I think an auto-liquidation model, it may protect the risk in the futures market. But all it does is it multiplies that risk and it shoves it in the commercial sector.

It could lead to defaults. It could lead to problems up and down the food chain. And I think that if you were to have to operate in a market like that, you would have to hold so much at the DCO to ensure that you were never liquidated on a 1 percent tail because you cannot operate in a market where you go to bed or at any point risk auto-liquidation. I mean, it wouldn't work. I mean, the whole foundation of the futures market would change. And it would cost an enormous amount of money and really change the entire system if you were to have to operate under that market.

MR. STEIGERWALD: Thank you.

Dave? So I think this is an opportunity not only for you to have your say, which I will give you, but also to think about what I consider the fallacy of universalization of this argument. Right? So if we allow it at all, it will become the new standard. It will exclude all other arrangements. And that leads me back to the conversation we had, in part, about the fitness of this risk model to certain markets under certain conditions.

And I take Sam's point that it may be feasible, it may even be desirable, to employ this risk technology across a variety of markets with different characteristics. But I wonder how you think in response to the concerns of the hedging community.

MR. OLSEN: Sure. Thank you very much to all for having us here today.

I'm sitting in the principal trading group slot, but I just want to disclaim that my comments are my own today.

I work at Jump Trading Group. We are an end-user trader in markets around the world.

It's interesting listening to this debate because we sit in a little bit of a hybrid function. Today, we are direct clearing members at the CME and ICE and several other venues. We also make use of intermediaries. We employ FCMs to trade on both venues as well. So the flexibility to have access points, either as an end user directly to the DCO or to go through an intermediary, is optimal for us to arrange our risks and get the appropriate amount of funding.

I do want to address auto-liquidation, though. It's a very important topic. I share some of the similar concerns about contagion and flash crashes. But I don't think we've spoken enough about the ability to get in front of a problem by taking action immediately.

I think a lot of the discussion so far has assumed that markets will revert and recover. But if you're waiting until T plus 1 to collect deficit margin from a customer, there's no assurance that that market is bouncing back. You could be on the first candle down of a multi-day or multi-week price movement.

So I think that we should get a little bit more balance in thinking about if we had addressed problems earlier, when we had the first break in the market, and gotten out of a position ahead of time, we could be saving some damage later on.

MR. STEIGERWALD: Chris, I see you shaking your head. Join the conversation.

MR. PERKINS: Yes. I couldn't agree more. When there's a flash crash, you don't know it's a flash crash at the time.

But, stepping back, when you think about -- and, by the way, thank you for having me here. I'm incredibly excited about the opportunity to embrace technology to put forth responsible innovation, which I think is being discussed today. So I've really appreciated the conversation.

When you think about risk management, people have talked about monitoring risk in real time in the existing system. But the problem is, is that we're not collateralizing that risk in real time. And that is a material difference.

Everyone in the room I think will agree that the defaulter-pays model is the ideal model for risk management, meaning risk takers are paying for their own risk. The issue with today's markets is that that's not the case. It's a socialization of risk. And, now, the realities of 24/7 markets are upon us. And we're dealing with a legacy batch process that only reconciles that collateral once a day. That leads to an accumulation of risk. Right? And that's an issue.

And so what does that result in? It results in FCMs. I used to run one not having the capacity to include market participants. It results in a derivatives market in crypto, where over 90 percent of that market is overseas because we just simply don't have the capacity and we lack some inclusion.

And so, then, finally, I think it's a great opportunity for competition. I don't think that my friends from the agricultural community should be forced to engage in this model. I think that they should exist hand in hand. And I think it's going to unlock incredible new opportunities for FCMs to provide new agency services to ensure that collateral obligations are made from an operational perspective via collateral management to stop instances of auto-liquidation, but at the end, risk takers need to pay for their own risk in any model that you look at.

MR. STEIGERWALD: So it's interesting to me. I wonder whether you will share my impression that we've spent a decade or more worrying about latency in the trade execution pipeline.

And I hear you, correctly or incorrectly, talking about latency in the supporting financial support, payment, support for those trades.

I wonder, is it too tepid halfway to wonder whether improvements in the operation of the payment system might be an appropriate response to that latency in settlement transactions, as opposed to a wholesale change in the risk management logic?

MR. PERKINS: To me, the important thing is always focusing on defaulter-pays, where the risk taker is paying for their own risk. You make a great point around the issues of settlement and risk accumulation. It's very expensive if you're a broker dealer in FCM to have to reserve the capital to meet those liquidity calls.

And, again, that's another thing that's holding up the inclusivity of our markets and so settlement needs to be focused on, no matter what. But, again, how do you reconcile 24/7 markets with this slow, arduous, once-a-day true-up from a collateralization perspective? We need to improve and innovate.

MR. STEIGERWALD: Thank you.

Christine, you wanted to make a comment.

MS. PARKER: You didn't ask me, but I will say I do think we should perhaps think about updating both the payment rails and potentially the risk management system.

That's actually not the point that I wanted to make.

MR. STEIGERWALD: Okay.

MS. PARKER: But I do want to ask a clarifying question. And I think that Chris and David sort of touched on this. Are we talking about -- and I know we've got the stylized facts before us, which were very beautifully written and I think very clear and crisp in in sort of the challenges that we're facing today. But are we really talking about a disintermediated model or a direct clearing model? Because I think we're sort of conflating the two. And I think it's perhaps more helpful, based on what Sam has said and what others are saying, that we're actually really thinking about a direct clearing model, where the end-user has the principal relationship with the clearinghouse.

There may or may not be intermediaries in the space serving certain types of functions. And I think that's very different than a just clearly disintermediated model, where you just have the end-user and the DCO.

So I apologize. It adds a lot of complexity to this discussion, but I think it's helpful to just clarify where we think this is ultimately going. And then we can sort of build in the so what are the intermediaries doing in this space in this direct clearing model versus the sort of purely end-user to DCO and that's the model that we're working with.

MR. STEIGERWALD: I think you make a very important point. And, again, apologies for those of you who can't read my scribbles on the whiteboard up there, but what I put at the top of the flipchart from the beginning was the title of the topic, the topic description for today's event, "Non-intermediation and Clearing." And as the conversation has gone on, I've increasingly used differing colors to call into question how important the non-intermediation aspect is as compared to other features of the risk management system. So, hopefully, we will come to a slightly better understanding of what's involved in this thing and then in the next segment of the conversation, when we're ready for it, then talk about the costs and benefits of the approaches.

Sam, I want to let you back in, but Sean had a point. And then we'll come to you. I'd like to return to you when I do to talk about that continuous time model again. It's come up. And I'm a little less certain than I was at the beginning of our conversation about whether the DMDCO model is uniquely suited to markets that trade in continuous time or to other markets as well, so just to prepare you for that. Sean?

MR. DOWNEY: Thank you. I just wanted to quickly address the defaulter phase point.

Conceptually, I think that's correct. It's a good idea for defaulters to pay for the risk or risk takers to pay for their risk, but, by definition, margin is business as usual 99 percent. And, by definition, with the stylized facts, it's nonrecourse. In reality, these participants are not paying for the risk as currently designed because they're not paying for tail risk. So to the extent that you want to focus on a defaulter-pays model and have one, the only way to address this as constructed here today is to margin at stress because, effectively, that's the only way you're actually paying for all of the risk that you're taking.

MR. STEIGERWALD: Sam? So there we are. You got us launched. I think I'm seeing some clarity, but issues still hover on the margins of my understanding of this proposal.

MR. BANKMAN-FRIED: Yes. Oh, boy, there's a lot going on here. I'm just going to tweet, probably, a lot of things I'm thinking. I am not going to be able to talk about all of them.

There's, frankly, been a lot of things that I think are pretty wrong that have been said. And a lot of things have been pretty helpful and really appreciate the latter.

In terms of the real-time point that you brought up, what I would say is that, at least as I envision it, this sort of direct clearing model is best suited to digitally settled markets, to markets where the core liquidity and collateral are digitally settled and, thus, could be efficiently brought to the DCO, physically but digitally as collateral. I think when you talk about, like, wheat or corn, that is a different topic -- right? -- because, all of a sudden, you have to start addressing questions about, well, could you post physical corn in a warehouse as collateral for a corn futures position? That's an interesting question. It's an important question. And it's why I think more thought would be needed before I would feel comfortable deploying this for a physical market or a market which is primarily physical with primarily digital markets.

I think it makes more sense on the real-time thing. I think it combines well with real-time markets. I think that the fact that it is all automatable and that it is all essentially cleared makes it able to operate 24/7 and makes it natural for 24/7 markets.

I don't think it's, strictly speaking, necessary that it's a 24/7 market, but you do have to increase the margin requirements if it's not a 24/7 market, at least as you approach and go over periods of lack of market access or illiquidity in order to cover for that fact. And you would need to meet the same margin standards as everything else would there.

A few other brief points. I completely echo a lot of what Christine said about, first of all, the thing that is sort of like disintermediates here, at least to some extent; whereas, direct, is the margin at the clearinghouse and the risk engine at the clearinghouse. There still may be intermediaries. And, in fact, they may be involved in the margin posting if they choose to be with their customer.

But to Chris' point, what this means is that in the end, the margin is posted in real time with the clearinghouse. And so other market participants aren't exposed to whatever credit decisions one intermediary might choose to make with their customers. That's just a deal between them.

And the last thing I will say, just briefly, is on this topic of, like, is there even enough capital backing this system. I think that the numbers that keep getting quoted are the margin in the traditional system, which is incredibly important. We have margin errors, like, okay, in DMDCO, also would presumably require margin, posted to the clearinghouse, which would reflect that that number FTX International unrelatedly, just the roundtable, has tens of billions of dollars of collateral today, posted by customers protecting the positions with the DCO. So there's sort of like equivalence between what the various words mean in the various systems.

Anyway, I will sort of like that after that.

MR. STEIGERWALD: Thank you.

So Gerry? And then I'm going to come to Chris and then Claire.

MS. LEWIS: Robert, you also have Mariam over here.

MR. STEIGERWALD: I'm sorry.

MS. LEWIS: And you have Mariam and --

MR. STEIGERWALD: And I'm starting to see a population.

MR. CORCORAN: Okay. So --

MR. STEIGERWALD: And we've got to get to JPMorgan as well. All right. Is this the point where I run for cover? Okay.

Gerry, quickly?

MR. CORCORAN: I just want to make sure, especially for the commissioners since we have new commissioners, that the current model today is not settlement T-1. We are settling all day long. Any great FCM or any reasonably run FCM is going to have intraday margin calls with their clients throughout the day.

At RJ O'Brien, we don't have any large outstanding margin call at the end of the day, period. And that's globally. So this potential misunderstanding that FCMs are waiting to the next day to settle risk is largely gone. It doesn't exist.

MR. STEIGERWALD: But I wonder whether you're concerned about latency in the settlements your customers make to you.

MR. CORCORAN: There is latency, but it's not 24-hour latency. Okay? And then you back it up with know your customer. Okay? You're doing business with customers for years in/years out. You're checking their balance sheets quarterly. The customer is going to meet a margin call in an hour or two, sometimes less. So there is latency, but it's not 24-hour latency. It's not T-1. It's a very tight system.

MR. STEIGERWALD: Thank you.

Chris?

MR. EDMONDS: Yes. So I think we have to keep focused on whatever the asset class is and where the actual rubber meets the road. And if we're going to evaluate any proposal, we need to understand how that individual entity, whether it's a person, company, or whatever, ag farmer -- when they're making that decision and what we owe them.

We have a job to do no harm here. We have a job to facilitate and facilitate a set of rules that people can depend on and have great confidence in.

And at Chris' and Dave's point around the idea of defaulters pay, I get that, love that. Right? And that works really well for guys who are in big shops because they never default. They want to tell you they never default. And we're just going to call that out at the moment. But at the beginning of the pandemic -- I'm not going to name the person, but they're in the room -- there was a technical issue at the end of the day. And I was on the phone with this person the entire time. And they're like, yes, we're going to pay, yes, we're going to pay.

To Sam's point, he doesn't have to worry about that in the proposed model. Right? That's not there. But it would have been cataclysmic at that moment in time.

We knew the issue. To Gerry's point about know the customer, we knew where it was. And we chose to give the appropriate amount of time not to dislocate the market and create a bigger stress on that.

So for us, at the end of the day, it's our job to do no harm. It's our job to hold everyone. It's the question of when you're calling the default.

There are lots of examples in the history that many of us around this table have lived around. And I'm going to say, you know, I think they're in default. Gerry may say, nope, they're not in default at that point. And at that consensus when that default takes place, we react pretty well.

But I had the keys to the castle at that point in time. And it would have been a very bad day. And that person sits in this room, and they know exactly who I'm talking about.

MR. STEIGERWALD: So I'm reminded at this point of a phrase that Craig Pirrong from the University of Houston sometimes uses to describe the tight fit that occurs in central clearing as compared, for example, to OTC uncleared markets, where renegotiation is possible at any time given changes in states of affairs, states of the world. And he calls it tight coupling. And he's concerned about how central clearing in its traditional form implements tight coupling.

But, leaving that aside, the model that's before us in the DMDCO takes tight coupling to a new level, it appears. Does that capture in some way the concern that you're expressing about the embedded flexibility and responsiveness that is a feature of the current system as compared to some highly automated systems?

MR. EDMONDS: No, notwithstanding comments that have been made here around certain ag products, for example, might be different. But let's assume they're not because this is a hypothetical conversation that we're having today. Okay? And let's assume at some point in the future, someone may agree that they're going to apply a similar model, maybe not the folks in this room but the next innovator that stands before you. When that price in the morning, then, and the farmer uses it to put a position on, in today's point, it may not ever mean revert. You're right. When are we going to call the default. Right?

But if it does and you just cost him the farm, what do we as an industry have to hold, then? Because both have happened in our history. We've both lived through them. I mean you make the call.

They're going to go in there with eyes wide open and do the best job they can. And we're going to have an algorithm sitting here and saying you know what? It's absolute now. I don't care that 40 minutes from now, you're going to be in a much better equity position in your portfolio. It doesn't matter. You're out.

I don't know how we answer. And this is what I said in my first set of comments. We have to understand what it means to each individual user before we can at the top of the house understand what it means to the whole industry because it's all going to go back there.

MR. STEIGERWALD: Thanks.

So I must compliment you all for playing by the rules of the game so nicely. I didn't expect that you would be so compliant. Maybe it's being in front of the cameras that does something.

MR. EDMONDS: It's round 1.

MR. STEIGERWALD: Yes. Yes, it's round 1.

And what I'm going to do at this point, then, is to just go down the line and just take you in order if you have a contribution to make to the conversation.

I know, Emma, you signaled a desire to intervene. So we'll welcome that.

David, let me offer you a couple of minutes. And then we're going to try to move expeditiously around the table.

MR. MURPHY: Thank you. Thank you so much, Robert.

So, look, what I've heard is that FCMs bring a number of things to the table and we all either need to say in a new model that we don't need them anymore and justify that or we need to say where they're coming from otherwise. Right? One of those is financial resources.

Well, there are other sources of financial resources. And those financial resources isn't a fixed dollar amount. It is not the case that we need $160 billion in this system, no matter how it is structured. Some structures need more. Some need less. Because that 160 billion is a function of risk not an inherent property of the system. So let's ask what resources we need given the risks in the system firstly and where they should come from. Right? I am not saying that the current number is right or wrong but just that's how to think about it.

Secondly, I think that FCM is bringing its client due diligence. That's, obviously, important and needs to be done.

Current asset protection. Again, we need somebody doing that. We need a robust structure there. That, speaking as a European, is one of the glories of the American system. I think you guys do it very well. But, again, that is not an insurmountable barrier. We just need to answer it.

Governance. I think that is something that we haven't heard yet and I think is quite important. FCMs bring scrutiny to the DCOs they clear. And that could be helpful. It's always helpful to have somebody looking over your shoulder and telling you what they think of how you do things. So that's important to factor in.

And, finally, default management FCMs help with that. But there are other ways of getting access to risk capital in the market. Right? The fundamental question is, how do you connect the defaulter's portfolio with the risk capital that's going to take it out most effectively? I would argue that holding an auction late in the day at which four people who are invited to a phone don't understand the portfolio is probably a pretty bad way of doing that. And perhaps some of you know the example I'm referring to in the recent past.

So sometimes that works really well in traditional CCPs. Sometimes it works less well. This model offers an alternative mechanism that I think we need to look at and say, how well does it do that?

Thank you.

MR. STEIGERWALD: Thanks.

Cody, anything to --

MR. ALVAREZ: Well, the idea of the non-intermediate model both having FCMs and not having FCMs, I find that a little confusing, by definition.

But, also, I find it hard to imagine a world where you could have a non-intermediate model, have both options, and then FCM survive. It just seems like if a customer has an option for direct access or access through an intermediary -- and it may be the additional cost of doing that. Then they're naturally going to go the non-intermediate route.

MR. STEIGERWALD: Well, so I hear two things going on here: the inherent complexity of thinking at one and the same time about an intermediated and a non-intermediated model, but that may just come with greater familiarity with the proposal underway, and then important questions about business viability and demand for this kind of service.

Mariam?

MS. RAFI: Thanks.

I just wanted to go back to some of the comments made around defaulter pays and the frequency of margining.

Similar to the comments Gerry made, we do call our clients for intraday margin if the markets are moving significantly and we're concerned from a risk perspective. That absolutely happens. We have the ability to do that, and we do it.

Defaulter pays to me means a couple of things. Right? One is that the fundamental concept is that the person who brings the risk pays for that risk. And FCMs have to go after losses that are in excess of the margin. That's under rule 1.56. That's a CFTC requirement. That doesn't exist, as I understand it, in in the current proposed model, which is which is a major difference. And it is a difference from defaulter pays in my mind.

The other part of default pays is that margin should be sufficient to cover the losses without going to mutualized resources. And we need to understand how the margin adequacy is sized if you don't have the additional buffer of the significant guaranty funds that that other clearinghouses have behind them. I don't think the premise of instantaneous liquidation is sufficient to cover that aspect of the risk.

MR. STEIGERWALD: Okay. That's an important reminder.

I am pushing us a little over the time scheduled for the first section, but I think the conversation is at a point that I would not like to stop it just now. So I'm thinking maybe 20 more minutes. And then we would break. Does that seem acceptable? I act at your pleasure. So signal me off if I'm pushing it too far.

MR. HUTCHISON: No. I think that's right. I think you've done a nice job of going back and forth, and I think you're doing the right thing by going around the horn. And then once around the horn, we probably all need to take a break.

MR. STEIGERWALD: I think so as well. I know I do.

So important questions about the end of the waterfall, which I'm proposing we address more directly when we resume our conversation. Very important.

Tom, I want to give you your opportunity. I also want to just say if it's more about the need to protect customers, which is your business, I fully appreciate that, and I want to give you a full opportunity to address that. It may be that that will be better in the next segment but you are at liberty to make any observations you'd like at this point.

MR. SEXTON: Let me just, first of all, thank the Commission for inviting NFA to participate today. I'll make two very high-level observations, just in light of the discussion.

As you all know, we're in a very kind of unique position. We don't operate a DCM. We don't operate a DCO. We're not an FCM. We regulate FCMs. I think market structure -- and we've dealt with various market structures throughout the years and have adapted to those. Market structure obviously impacts customers, both who are institutional customers, but, in particular, our retail customers, enlisted derivatives. And we would like to talk about the customer protection issues. And Mariam and Gerry have raised a few.

The second thing it impacts is just the regulatory structure itself and whether or not there's an independent SRO in this structure who is going to regulate this combined entity because it not only blurs the lines between these entities, but there are no lines. And so I think that that's also a very important discussion to have.

MR. STEIGERWALD: Thanks, Tom.

Ann?

MS. BATTLE: I think, just very quickly, thank you for the opportunity for ISDA to sit at this important roundtable today.

While we have not been vocal on I think some of the direct clearing or issues raised by DMDCO, we have for many years been extremely active with almost all of you in looking at CCP best practices. And my colleagues, including Ulrich Karl and others, have written with you a number of papers on that.

I think the main point we wanted to make today is that those best practices which go to the issues that have already been raised around safety and soundness of the financial system, protection of customers and including protection of non-defaulting customers as well as non-defaulting clearing members, need to apply in whatever model comes out of this important discussion.

MR. STEIGERWALD: Thank you.

Jennifer?

MS. HAN: Well, first, thank you to the chair, commissioners, and staff for organizing this. I think this is a very timely discussion. We are very supportive of innovation and competition. At the same time, we think it's really important for the rules of the road to be very clear to understand from maybe the benefit of some modeling of extreme circumstances and what would likely be the result of those. Also, I think the stylized facts are very helpful in understanding some of the scenarios.

It would also be very helpful to understand in some extreme circumstances, the facts, how would they intersect with the CFTC's default rules, bankruptcy rules. What would happen in those circumstances as customers would be members of CCPs? And so that's quite a change. And so it's really important for us to understand in those scenarios how they would play out.

MR. STEIGERWALD: Indeed. Well-understood.

Joe?

MR. CISEWSKI: Thank you.

I work for a venture capital firm, but I speak for myself today.

In the 2008 financial crisis, we experienced some significant stress. It was an extreme event by any measure. Some thought it was plausible. But, to Sean's point at the outset, the current derivatives market structure performed fairly well, for all of its flaws. And so I think it's reasonable for the Commission and for the staff to think very carefully before deviating from a model that's performed very well in extreme stress events.

But I do want to talk a little bit about the law, which hasn't come up yet and --

MR. STEIGERWALD: Okay. I'm just going to ask you to think about whether some of that detail might be deferred until the next conversation. But, please, by all means, give us a give us a hint of what you're trying to get to.

MR. CISEWSKI: So I think Congress was clear in the Commodity Exchange Act about the objectives of the statutory framework and its important context because it directs the CFTC to promote responsible innovation and fair competition in the markets.

Now, those modifiers, "fair" and "responsible," are important. And, obviously, that's the subject of much of this discussion. So I'd like an opportunity to come back and talk about that.

MR. STEIGERWALD: Okay.

MR. CISEWSKI: I don't know what the topic of the next panel is, but perhaps I can lead it.

MR. STEIGERWALD: Yes. So one of the dangers of a free-flowing conversation like this is that we wind up confusing everybody and nobody knows what the agenda is.

So, just to go back to what I said at the beginning, my thought was that we would take our initial opportunity to get to know each other, to share our ideas, and get some sense of what this thing is that we're calling non-intermediated or direct clearing. And then, after a break, when it's ready, when we're prepared to go on to the next step, I would propose that we discuss what the implications of that model are and what issues remain to be addressed and, certainly, among them, important legal questions. I just didn't want to get too far down into that conversation before we've concluded some opportunity to shape this thing.

I want you to feel like you're welcome to speak your mind. I just am trying to sequence the conversation. Okay.

So anything really critical? Because, otherwise, I'm trying to get to folks who haven't had a chance to speak yet. Michael?

MR. WINNIKE: Well, thank you for giving us the opportunity to participate today. And so I work in market structure at BlackRock. And we look at this proposal through the lens of, how does it advance or challenge our mission to create better markets for our clients, considering constantly evolving technological, regulatory, commercial change? And I think, in looking at the proposal through that lens -- and some of this we can definitely delve into in the more detailed session.

I think there are important gateway issues around market access, which are interesting to consider, and how a direct access model or maybe a hybrid model in terms of what we're leading towards could lead to more efficient markets in terms of being able to bring together broader pools of buyers and sellers, which would certainly advance our goals.

And we also think, though, about, how does the model maintain orderly markets in times of stress, which we'd love to talk about in more detail in terms of auto-liquidation and, then, also, importantly, customer protections. And we think it's definitely right to center the conversation on more CCP skin in the game but would like to delve into other issues around managing co-customer risk.

MR. STEIGERWALD: Thank you. So, Tom, you've had your say? Is all good?

Emma, we got here.

MS. RICHARDSON: Thank you. But, actually, I was thinking a lot of the topics I wanted to mention, we probably will delve into in the future sessions as well.

MR. STEIGERWALD: Okay.

MS. RICHARDSON: So I think we touched on margin advocacy, but we haven't really talked about default fund adequacy. Sorry. And so I'm happy to save them for the later session this afternoon as well.

MR. STEIGERWALD: Thank you. Thank you. I hope that that will contribute to a more coherent and useful conversation if we try to take it in some order, recognizing, of course, that in this area, almost any point of entry requires us to think about all of the issues at the same time.

Claire?

MS. O'DEA: Thank you for the opportunity to the roundtable today.

I would also like to state that LSEG are also supportive of innovations bringing efficiencies to market. I think one thing to bear in mind is, obviously, the systemic role that CCPs play in the marketplace today and that when considering non-intermediated clearing models, that they play by the same rules that we play by today to ensure that the same risk management standards are met; so, for example, having the financial resources to weather unforeseen events. If you consider DCOs today they hold billions worth in default fund resources determined by considering extreme but plausible market events. And that should be core to any DCO model to ensure those principles are upheld.

MR. STEIGERWALD: Thank you very much.

And, Sean?

MR. DOWNEY: A couple of seconds. I just want to clarify again that the 160 billion is capital at FCMs. CCPs, we have 225 billion in margin at the CCP. I don't know what your numbers are, but those are two separate things. So when we talk about the 160, the 170, whatever it is, it's not the CCP margin.

MR. STEIGERWALD: Okay. Thank you.

Alicia?

MS. CRIGHTON: Great. Thank you. And thank you very much for the opportunity to be here today. We really appreciate it. I think focusing the discussion around innovation is critically important. When we think about it gives us the opportunity to not only reflect about the current model and some of the challenges and weaknesses we observe in the current model, many of which we've talked about and debated in this very room, it also gives us the ability to really reflect on new models that are being proposed.

And, Tom, I will borrow your comment: to think about, then, a third flavor. Right? But I think our duty and our responsibility as market participants is to think about what is the right structure in terms of protecting customers, protecting market integrity, and what the role is that the regulator should be playing in that. I think it ups the stakes dramatically from a margin perspective.

If you think about the resilience of CCPs and DCOs and the role that FCMs play, we are the first line of defense. We are also the last line of defense.

Right? We think about how we manage the client. And we're also the pool of capital, the 160 billion in terms of capital, that backs up the CCPs in that. Taking those layers away is interesting, but it does change the dynamic from a regulatory perspective.

MR. STEIGERWALD: Thank you. Bis?

MR. CHATTERJEE: Thank you, Tom, and to the Commission for giving us the opportunity.

As a firm that operates both as a self-clearing member and the DCO -- sorry -- as an FCM, I think, from our perspective, what I'd like to say, again, my personal opinion here, is that the debate seems to very quickly want to jump to liquidation. I think the focus should be on introducing risk into the system, make sure it's introduced in a safe and sound manner, and make sure that the risk is managed in a safe and sound manner.

Liquidations are very stressful events. And the prospect of liquidation, small or big, creates a lot of nervousness in the markets. I think Chris alluded to an example where they held off liquidation. And I think that's something we have learned from the financial crisis, is that the safety and soundness in creating barriers and firewalls and having multiple layers where not only do you test the risk being introduced into the system but you also manage the risk from spiraling out of control is extremely important.

And so I would really from the perspective of the debate like to really focus on the fact that as we support innovation, new market structures, what can we do to shore up those firewalls on an ongoing risk management basis and not really jump to focusing on default management and liquidation?

MR. STEIGERWALD: Thank you. So I'm going to skip over some folks who have had a chance to speak. And I may come back depending on time.

Graham, you haven't had a chance yet.

MR. HARPER: Yes. Just a couple of quick things. I mean, I think the innovation aspects of this are interesting. The ability to move margin 24/7 I think creates a lot of flexibility as compared to the traditional banking rails. So that's one thing that I think this model presents a lot of opportunities on.

Most of the rest of my points I'm going to come back to later. Thanks.

MR. STEIGERWALD: Okay. Great. Stephen?

MR. BERGER: Thank you.

Let me just preface my remarks today by saying that for well over a decade, we've I think been some of the most pro clearing market participant that I can think of across asset classes and geographies and including trying to innovate with respect to access models that are available to additional types of market participants, so welcome further innovation in the space but want to make sure it's done in a way that maximizes the benefits of clearing while still making sure we mitigate risk, protect customers, et cetera.

So I'll save most of my comments for the follow-up discussion around the implications of this because I think there are two sides to the debates around how capital-intensive this model would be versus the current model and whether it promotes efficiencies or creates inefficiencies. So I look forward to discussing that.

One point I would just make for now with respect to sort of the market structure considerations around this is the model we're sort of considering in the abstract places a lot of reliance on the quality of price discovery and liquidity occurring on a specific central limit order book, 24/7/365, in contracts that are also traded in other liquidity pools across the market. So, like, the importance of that mark-to-market and the integrity of that price that's struck every 30 seconds becomes essential, as opposed to a once-a-day valuation. So, like, the discipline that has to go into that because of everything that's then linked to it becomes very, very important. So I think we need to think through the confidence we have in that, whether it's market-wide or just reflective of the liquidity on a specific venue and you know what the implications of that are.

MR. STEIGERWALD: Thank you, Stephen.

Andrew?

MR. SMITH: I did it. First, I just want to thank the chair, the commissioners, and the staff for having us. As you know, as many folks know, Virtu is a huge advocate for competition and innovation. The proposal that that we have been discussing, the nameless proposal that we have been discussing here, I think it's a wonderful opportunity for us to figure out how to embrace new innovative ideas while protecting the existing benefits of the current infrastructure and the market structure and regulatory structure that we have today.

I think the biggest thing that jumps out to us when we sit back and think about it at Virtu is it's not a zero-sum decision. Right? It's not mutually exclusive. There are benefits of the proposal that are really exciting that we should be able to embrace.

I think the biggest thing that comes to mind is Sam's comment right off the bat to say it's not necessarily disintermediated. Right? There is the ability for an FCM to compete there. And maybe there's a model, and it's not our place. But maybe there's a model where FCMs are on the platform. And the FCMs can help make sure there's always sufficient capital to avoid those auto-liquidations for their customers and charge their customers accordingly for it. And so you kind of have a model that requires the discrete amount of capital that's required for individuals who want that service and/or use an FCM that don't want that or that do want that service and pay for that service.

MR. STEIGERWALD: Thank you.

Todd?

MR. PHILLIPS: Thanks.

Really quickly, I just want to remind folks that we are frequently talking about retail investors who don't understand default waterfalls. And I think it's difficult for folks who are trading really volatile assets, like crypto, to compete directly against professionals. I think, generally, it's important to have a professional intermediary working with retail who enters into contracts or negotiations with other professionals. I think just having someone standing between retail and professionals is really important.

MR. STEIGERWALD: Thank you.

And Hilary?

MS. ALLEN: Bringing up the rear. So thank you again for the invitation. So my perspective on this, I'm a professor who studies financial crises and the regulations needed to prevent or mitigate them.

We've heard a lot about sort of different ways this proposal could go. Will there be intermediaries? Will there not? Regardless of how that goes, the proposal on the stylized facts seems to depend entirely on margin as the risk management tool. It eliminates all other types of loss absorbency. And so we're entirely dependent on margin to protect not only the consumers or the investors. We're also dependent on it to protect the stability of our financial system.

Now, while I sort of see the rhetorical appeal of the defaulter-pays model, as has already been pointed out today, that doesn't work when you can't figure out what the actual risk is. And there is always a tail risk. And we have had, like, a significant amount of financial history showing us that tail risks will always eventuate. We've seen problems with VAR models, et cetera. But the point I want to make today, which hasn't been made yet, I think, is that this model, whether it could be used for a variety of different things for trading, the primary use case, or at least the initial use case, is going to be crypto. And trying to calculate the risks associated with crypto in order to figure out an adequate margin, I don't think we're in a place where that can be done.

There are so many new aspects of this market. We have a very short market history. We don't have established valuation models. And, then, another aspect that we haven't really thought through is what's the tail risk associated with one single algorithm potentially being responsible for so many risk management decisions that would ultimately spark fire sales, which, again, I'll get into later this afternoon. I don't want to go too far down that path now.

But I think, really, we're not in a position where we can assess what an appropriate margin is for a crypto investment.

MR. STEIGERWALD: Thank you.

So I'm reminded at this point of a time in the 1990s when people would come to Chicago, and what they wanted to see was the trading floor. They wanted to see those guys running around in those colorful jackets, screaming and yelling at each other. Nobody ever wanted to visit the clearinghouse. It's a pretty sleepy place. Right? I had a hard time convincing the senior management of the Federal Reserve Bank of Chicago -- oh, boy; there goes my employment -- that clearing was the place to watch, clearing was where the risk lived. It's important to understand how the trade gets done, matters a whole lot, but everything after that point is at the clearinghouse.

So there was a time when we were trying to wrap our heads around traditional clearing. And now we're trying to wrap our heads around an innovative -- desirable or not, I don't know -- evolution in clearing. And so all of the cautionary notes that have been sounded are well-taken.

But I'm also reminded that the late Nobel Laureate Merton Miller famously observed in connection with central clearing, by the way, that no one today remembers that the steam engine was invented to pump water out of mines. It wasn't the initial-use case in in the event of steam engines that mattered but the application of the technology to new problems of transportation, communication, locomotives, steamships, global communication, global travel that the inventors of the technology couldn't have imagined and didn't imagine at the beginning.

I thank you for helping me through this part of the conversation. I don't know how you feel. I am exhausted, and I need a break. I suspect you do as well. Clark, I will turn it over to you, and you will give us our instructions for the next segment.

MR. HUTCHISON: Thank you, Robert.

So a couple of things. First, I want to extend a thank you for everyone. I know it's hard with a big group like this, with many opinions and many questions, and not able to always speak exactly when you wish to. So I appreciate everybody's patience. And what we are trying to do is have a good exposé of a lot of things that we brought up in the first session.

So I have notes here that I'm going to discuss with Robert about the next module. Let me just talk about that for a minute. So we are making this up on the fly because we didn't want to interrupt a good conversation just for the sake of having a break, but I think we have come to a point where it's a good time to have a break.

And so the suggestion on the fly is it's about 11:27. And I think at 11:45, we should reconvene. So that gives us all 15 or 18 minutes or so. And then what I would like to do is make sure we have an adequate lunch break.

So we're going to have a short second module, from maybe 11:50 or so to 12:30. And Robert and I after some of my notes will try to narrow down maybe just one thing to talk about for 40 minutes. Maybe we'll get the luxury of two things to talk about. But we have things that we've postponed, with your indulgence and patience, that we should come back to. So we'll figure out what would be good for a 40-minute discussion or so to bring that item back up for discussion, a singular or perhaps two items.

So let's take a break. We'll see you back at 11:45, and we'll have a short session until 12:30 for a lunch break. Okay. Thank you.

(Recess taken.)

MR. HUTCHISON: So a couple things to say. First of all, I want to thank you all again. And I think it is important to recognize an observation of mine. As you know, I haven't worked at the CFTC all of my life, but now I'm approaching my third year. And what is important to me as an observation, generally speaking, over the course of my career, is the relationship the CFTC has with all of you. And I think that relationship is one where we bring facts to the table, we have good conversations based on facts, and we have respect for one another, but we also figure out things that haven't been figured out. And I think that's what in my experience has made the CFTC different, is that we enjoy conversations at the CFTC with people who do the doing. who do the plumbing, who raise to us the important questions. And I hope we, in return, consider those things in a practical way and make theory and practice come together with elegance.

And so it's important to me that what we did this morning was very helpful and I think consistent with our tradition. And I hope this afternoon will be the same.

But when we think about theory and practice coming together, I think it's important that we also talk about the theory. We talked a little bit theoretically this morning and a little bit about practice this morning, but I said that we'd have a short, 40-minute-or-so, module. And I'm sure you're all wondering what that is. Well, we're going to talk about the law.

So we have theory, but the theory has to take place within a construct. And, then, that construct can help perhaps guide how the plumbing goes.

So, with that, I'm going to ask Robert to again be our moderator. And I know that there are topics that we said we would put off until other times, but I thought we could do perhaps the law in 40 minutes. And so Robert will lead a discussion about that, the context in which all of this exists or maybe modifications which might have to be made.

So, with that, Robert, you're back in the ring. Thank you.

MR. STEIGERWALD: Thank you. Olé.

Joe, in the last conversation, I thought I would signal to you that this opportunity was coming. I'm sorry that I cut you off before. How about sharing with us some of the issues that you had wanted to address before?

MR. CISEWSKI: Yes. I think it's important context, to use the word that Clark used. And what I was saying is the 2008 financial crisis was a real stress scenario. And if extreme but plausible circumstances were ever to be sort of empirically weighed, it would be during the 2008 crisis.

And I thought Sean's comments about how well the futures market performed, for all of its flaws, are important to consider. And I can understand the staff's sort of careful analysis before deviating from the traditional market structure that has been used in the futures markets.

The Commodity Exchange Act makes some judgments about policy issues and, in particular, directs the CFTC to promote responsible innovation and fair competition. So the modifiers to those words I think are very important. So responsible I hope is what we're mostly talking about today, which is to say how do we set up a risk management framework for a novel clearing model that achieves the other public interest objectives in the statutory framework but at the same time furthers innovation. In terms of fair competition, I think we want to talk about uniform minimum standards that everyone can comply with and compete on a level playing field.

So, with those things said, I do want to kind of direct a few questions to Sam, actually, and give him a chance to address some things but --

MR. STEIGERWALD: Let's just make sure that we're keeping this at the level of addressing a general concept.

MR. CISEWSKI: Yes. Well, DMDCO, Sam is very familiar with the DMDCO stylized fact. So yes.

MR. STEIGERWALD: Okay. All right. I mean --

MR. CISEWSKI: But in my opinion, we should be in a posture probably to approve this novel application but focused on those modifiers, like responsible innovation, fair competition, or, differently stated, we should be talking about how to do this and not whether to do it. And I think that's an important way to frame the whole discussion.

There are some interests in the derivatives markets that are quite dominant. And I think the context here, again, going back to Clark's point, is that you have six to eight very large FCM clearing members that control the vast, vast majority of margin in our clearing system in the U.S. You have derivatives markets which are highly concentrated. And it's not necessarily because of anti-competitive behavior, per se, although it's kind of noteworthy that the Department of Justice actually has looked into this and expressed some concerns about the derivatives market structure as it exists today. And so with that concentration should come some urgency for looking at different models and introducing competition to overcome network effects and some of the economics around you basically trading models in general.

So one thing that does concern me a little bit with those comments having been made is just to kind of better understand how the risk model and liquidation has performed in a real-life stress scenario. And when we started this conversation, Robert, there was a lot of theory that we were discussing. And, actually, in the last month with the meltdown of parts of the crypto markets, we have a real-life test. And it would be really good to hear, how has FTX, essentially, performed or how has the clearing system, the stylized clearing system, performed with these real-life stress scenarios?

And just the last point since I probably won't get another chance to speak for a while, I do also have some concerns about this cascading liquidation concern, basically the idea that you could exacerbate price pressure by triggering automated liquidation. I'd love to hear what kinds of market-wide or contract-specific risk controls can be put in place to address that.

MR. STEIGERWALD: Okay. So it seems proper for me at this point to make sure that we use the term "liquidity" in a consistent fashion. There's actually a splendid paper by an ECB economist which examines the 24 or 25 different uses of the term "liquidity" in the economics literature. So it is very important that we be clear about what we mean.

Commonly, today, economists distinguish between market liquidity, meaning what happens when you bring a trade to the floor or to a screen -- right? -- versus funding liquidity. Unfortunately, we use the same noun to describe both scenarios.

There is some sense, some potential that what we're doing is trading off a problem of funding liquidity that arises in connection with the exchange of variation settlement, this latency in the payments that we've been talking about today, for a concern about liquidity in the underlying market, meaning market liquidity.

So I just offer that as a foundation for any observations that we might want to make. I'm not expressing an opinion about the wisdom of one model or another.

Allison, it seems that a question has been posed to Sam. So I'm inclined to go there and then come to you.

So, Sam, you know we're playing this game. And I don't know how or if you care to respond, but I think it would be helpful to all of the participants in the discussion to have some better sense of how you see the issue of the dependence on market liquidity of a highly automated risk management system and perhaps share with us some sense of how you have fared during the recent turmoil in the market.

MR. BANKMAN-FRIED: Yes, absolutely. And I think this is one of the most important questions. In the end, above all, what matters is, does it work? Does it successfully manage risk? Does it successfully balance protecting customers with protecting in systemic risk. And that's actually why we started FTX in the first place, was that some of the existing models in the digital asset ecosystem back then did not do a great job of this.

It's fared pretty well. We've had a few hundred billion dollars of daily volume through the market volatility. Obviously, there's been volatility in every market, including crypto for the last month. We've had single days with 10 to 20 percent moves in the underlying asset classes, tens of billions of dollars of open interest and volume. And there have been -- I mean, we have never mutualized losses. There certainly haven't been any mutualized losses through that. The guaranty fund action has been way less than 1 percent during the biggest days of what we would be proposing in our application.

Markets remain decently liquid and orderly. Obviously, liquidity ebbs and flows during times of extreme volatility, but they have remained orderly, despite those large market moves. No customer positions have been sort of unfairly impacted with this.

Yes. And this sort of mirrors what we saw in May of last year and March of the year before, just sort of the two previous very large move weeks, I would say, in the ecosystem where the model did what it needed to do during that.

The other thing I would just say briefly about the cascading liquidations point, which I think is a really important point brought up, is that I think there are ways in which real-time marketing can be risk-reducing for those factors.

In the end, if there is a client position and that position is underwater and the client doesn't have assets to protect it, there may need to be a margin call. That's true in any margin model. But what having a real-time model allows you to do is escape the dilemma of either having to margin call very early, way before it might be necessary, and maybe liquidating a position that didn't need to be liquidated or wait longer and end up with an underwater position in an LME nickel type situation. Being able to have that real-time measurement of collateral and position size and real-time action allows you to not deleverage a customer position until it actually is necessary while still being able to do so prior to creating systemic risk.

So I actually think there are advantages of it. There are pros and cons, but I think there are a lot of advantages from that perspective as well.

MR. STEIGERWALD: Thank you.

So, Allison, we talked at a very high level of generality this morning just in an effort to gain our footing to have an idea of what this thing is. And now we've started the turn towards the legal and regulatory conversation but with a bit of specificity about the factual environment in which the model that is under consideration has operated in other spheres, outside of the DCO sphere proper, in light of recent events. But that brings us to an important set of questions that my colleagues on the CFTC staff and I wrestled with in the preparation of the stylized facts, which was how should we or should we attempt at all to describe the legal and regulatory environment in which this thing would exist. Maybe you can help us --

MS. LURTON: Right.
MR. STEIGERWALD: -- start down that path.
MS. LURTON: Thank you. Thanks very much for that setup. That was helpful.

I think this morning's discussion was very interesting because it gave us all an opportunity to talk about where we think we can harness true innovation to improve the market. I think as we transition to this module, we all recognize we're still tethered by the law and the regulations. And so I think one of the things we're listening for is once this group; the industry; and, importantly, the regulator has decided where this moves forward, what elements of the regulations need to be revisited? And what parts of the law are we still bound by or would need to be revisited, too?

At a very high level, most of you know, looking back slightly at ancient history, this agency and then Congress codified core principles for certain entities. They did not codify core principles for FCMs. Those were determined to be entities so critical to the system that they needed prescriptive regulations. They are a highly regulated entity.

Because of that, we believe that was intentional. And so if we are considering a model where the FCM is not present, what is lost by that change? It may not be insurmountable, but we would hope that certain regulations are at least revisited for their purpose so that we can figure out if an entity that is bound by core principles, which we're highly supportive of as well, would there need to be changes, whether they be more prescriptive ones or additional rules.

We hope that the agency is looking at rulemaking because in our mind -- and I'll point to two just to keep the conversation moving. There are a few that we think would need to be at least revisited to see if they are compatible in what I think is proposed in the stylized facts, recognizing there are some variations. One is we've talked a lot about the non-recourse element and how important that is to the success of the model in the proposed facts.

There was a rulemaking, I believe in the early '80s, 1.56, where the agency considered how important it was for FCMs, those entities that interact directly with customers, not guarantee losses. It was felt to be a systemic problem for FCMs. Perhaps there were bucket shops at the time. The concern was, will they still be around? If they're guaranteeing loss, how much can they guarantee before they fail and we lead to a systemic incident?

That rule was put in place. It is one that can be binding on the FCM at times. We work through it constantly. And, yet, the model that we're hearing proposed would have a DCO not bound by that rule actually guaranteeing against loss. Perhaps that's where we want to go. But if that's the case, can we look back at what that rule was proposed for?

The other one I'll point to because it's highly important is, as I understand the Part 190 rules, the protections that flow through to customers of FCMs are different in Part 190 than they are for those customers of DCOs. I believe the agency should look closely if those rules need to be revisited. If we believe those protections are important, important enough for customers of FCMs, they should be protected in revisiting 190.

Those are just two examples. And I think my ultimate point is we would like this innovation conversation to continue but with the understanding of which laws should we look at and consider updating.

Thank you.

MR. STEIGERWALD: That seems quite appropriate.

Robert?

MR. CREAMER: Well, first of all, Allison, I think that's a very important conversation. I felt like after Joe's comment, which wasn't a legal comment -- we were kind of taking the time on it. We left at a point where I feel like we're missing a little bit of common ground. And I don't want to put Sam on the spot, but he is the foremost expert in a hypothetical model that might work this way.

We talked about the suitability of this model in crypto assets and how well it worked. And it worked through all these different stages of volatility and whatever else. As a firm, we don't trade everything. We trade things that meet criteria that meet the way that we engage in markets.

I'm curious. In the effort of finding common ground, Sam, do you see or can you envision certain market types in which your model the way that it's constructed or contemplated would not work as effectively as you would like or that market participants would expect?

MR. BANKMAN-FRIED: So I think that there would be a lot, like many more, questions that would need to be addressed about markets where the primary settlement or liquidity happens physically, rather than digitally. I think that's the most obvious example -- right? -- when you're looking at physical agricultural products. Those are things which would be -- there doesn't currently exist an easy way to post those as collateral for a futures position for a hedge on a marketplace. And that would make the real-time margin calls. Well, the question is, what margin is posted there? And that goes down to without credit extension.

I don't want to say those are unsolvable problems, but they're problems that would require further work and further thought. And I would feel much more, like, comfortable with this, and I only intend to do this, for digitally settled products, where the primary liquidity does happen digitally. I think that it's a really good point.

I think, also, when you look at, like, extremely illiquid assets, you have to think harder about -- and I think there are ways to do this with the current model, but I do think a lot of the assumptions you have been making are when you're looking at at least moderately liquid assets. If you're looking at an asset with a daily trading volume of $1 million globally, I think that then you have to think about what the margin model looks like. How wide would price bands need to be for that? How would margin scale with a large position in that, given that $10 million would be a very large position in such an asset?

So I think those are a few comments on that, but I think it totally makes sense.

MR. CREAMER: Thanks.

And sorry, Allison. I wanted to pull it back to that because I really do think that's important.

MR. STEIGERWALD: No. That's very helpful. And I admit that I'm starting to understand a little better what you mean by "digital settlement," Sam. I'm an old guy. So I'm accustomed to the distinction between physical settlement of corn or wheat or soybeans or those sorts of things and cash settlement. And I think you mean something other than cash settlement. And I'm sorry that it's taken me all morning to figure that out. But would you comment on that?

MR. BANKMAN-FRIED: Yes. I think I would mean something stronger than cash settlement. So anything which you would call physically delivered, I would agree would not be digitally settled, but by "digitally settled," I do mean something stronger than financially settled, a financially settled contract on wheat, where the reference price is a physical warehouse delivery and where the primary market liquidity and market settlements happening in physical underlyings I would classify as in the sort of like non-digital category for this.

So I'm talking about, I mean, cryptocurrencies are sort of like the most obvious example of a fully digital asset, but there do exist other important sectors of our economy right now. Today, I think equities are one example and equity indices and things like that that are primarily handled digitally, as opposed to many agricultural products, which are primarily physical.

MR. STEIGERWALD: Thank you.

Emma?

MS. RICHARDSON: Thanks.

I was just going to make just a point just about this. I know the stylized facts. And we keep on coming back to crypto. But around that point of the suitability of this model for other asset classes, I think when we think about it from a regulatory perspective, I think one of the questions we have to ask is, what is the gating mechanism as we think about the ability for platforms to be able to add new products to this model? And so I think that maybe something that would need to be considered is around the ability to self-certify new products and how we would be able to slow down that process a little bit as products outside of crypto are proposed to be added to the disintermediator model.

MR. STEIGERWALD: So that brings up the always interesting and contentious issue of self-certification.

Anyone want to? Chris?

MR. PERKINS: Thanks.

I think regulation should be principles-based. And to the extent that we apply it to a direct DCO or another DCO, it should be the same. I think things like extreme but plausible tests for collateralizing the system -- right? -- maybe if we come up with a design for the direct model, we should also apply that design to the other CCPs because we need to stay principles-based throughout. And the same should apply.

MR. STEIGERWALD: Thanks.

Alicia, I'm going to put you on the spot. I think Goldman had a view about self-certification when the time came for some traditional DCOs to list crypto contracts. I'm wondering how you're thinking about it in this context.

MS. CRIGHTON: Yes. Again, kind of similar to the points that we made before, I think the notion of self-certification, product suitability, completing the circle around what is the risk profile of the product, is the product suitable to be listed on an exchange, and centrally cleared, again, where all the protections that we bring to the system are backstopping that product, we have to do a better job I think of considering the implications in the self-certification model. And I don't think we have enough protections in that regard. So I do think that's a really important point. It's something we've advocated for heavily over time. And I think it would be critically important here.

While I have the mike, if you don't mind --

MR. STEIGERWALD: Yes.

MS. CRIGHTON: -- if I raise one other point? And I think it's probably related to where Allison's comments were going.

I think the other piece that is important for us to think about is, how do these models coexist? How do we think about a model where you have direct participants, direct retail participants in the CCP or in the DCO? Are they clients? Are they participants? What protections do they get? And what does that mean? And when you have intermediaries in that model, what is the regulatory structure that allows those to coexist?

So I think those are part of the questions that we do need to ask, so sorry, unrelated to the kind of product suitability and self-cert. But I just wanted to make sure that --

MR. STEIGERWALD: Robert?

MS. CRIGHTON: -- we got that on the table.

MR. STEIGERWALD: Apologies. I'll come to you in a moment, Robert, but I just want to pick up on Allison's comments because, Allison, you introduced sort of the distinction between business as usual and then the land of Part 190 and the Bankruptcy Code. And Alicia references certain ambiguities, at least to me, surrounding the notion of what is a customer, especially when you have different kinds of customers potentially, I'll use the word, commingle but not in any particular legal sense in a single clearing entity. Is that part of the package of things that you were introducing as legal and regulatory issues?

MS. LURTON: Yes. I mean, I think that would be worth revisiting. Again, the goal here is not to prevent innovation. It's to make sure that the rules, which we believe were written entirely dependent on multiple entities in the clearing ecosystem -- it is true that we have direct clearing models now, but they exist differently than the one we're talking about. And so for the typical clearing model, when DCO rules, regulations, and core principles were written, it was assumed there was an FCM in the mix. And so in order to make sure the core reasons the agency wrote, the FCM rules, the DCO rules, and the DCM rules, as they did, and if we were to upset that in some way -- and perhaps I used the wrong word by using "upset." If we were to innovate that, which rules would need to be revisited because you are taking out some of the -- those rules are intended intentionally redundant in some places, and there was a reason for that. So just removing the FCM without revisiting the DCO may not do it.

To your point, the definition of customer I think throughout should just be revisited. As we understand it, the clearinghouse that would be operated by at least one entity that these facts are based on would clear for an entity that allows 100 margin products and leveraged products. And all of those customers, whether they be in one avenue or not, would be in the same customer pool should there be a failure of that DCO.

Perhaps that's not the result the CFTC would want. Maybe it is. But, in any event, revisiting those rules would probably be wise.

MR. STEIGERWALD: So I'm reminded again as you speak about that delicate balance between creativity and destruction that we can't escape as we think seriously about innovation.

So I offer to my friends at the CFTC the opportunity to make any comment they would like to make. It's been a long time since I've considered myself a practicing lawyer, but I do understand it to be the case that while there's a sort of implicit assumption of the presence of an FCM in the clearing ecosystem, in fact, there's no technical obligation to have an FCM. So I wonder how that affects your thinking.

Tom, I see I've animated you. May I just give you a brief opportunity. And then I want to get back to Robert. So go ahead if you'd like.

You want me to go ahead?

MR. STEIGERWALD: Well --

MR. SEXTON: So you're right. I don't think that there's anything in the act that says that you have to have an FCM as part of the clearing. I think, as Allison said, I think that's just the way the framework works with all these inner linkages that provide supervision and risk between the DCO, the DCM, and the FCM. That's just the way that it has been understood.

I will say, though, that this goes back 20 years, when Congress looked at creating different levels of marketplaces. And they created this thing called a DTEF. They were very clear at that time, though, at least for -- and these were direct markets that they created -- that you could have ECPS for those markets, but if you have retail, they have to go through an FCM. Now, that was rescinded and SEFs were put in in 2010, but I think congressional intent was fairly clear and understood that if you have retail participants, the FCMs are a key player here.

MR. STEIGERWALD: Thank you.

Thank you for your patience, Robert.

MR. CREAMER: No, no problem. I'm probably doing too much talking. And this is more of a question than anything.

I will say everything you're saying, Allison, seems incredibly sensible to me. And I think it seems like we're all in agreement a little bit on that, that with the principles, there should be rules of the road that guide how everybody participates in our markets. We don't have a new entrant, all of a sudden, gets a free pass somewhere and somebody else gets penalized because they're an incumbent. But that makes a lot of sense to me.

One thing that I'm unclear about that is a legal matter is, is there a way legally if a I'm going to call it intermediary optional model came out that -- who has the authority? And is it strong enough to prevent an unsuitable market from being self-certified or being deployed on an unproven model for that market? I'm just curious if anyone has a legal answer to that because I honestly just don't know.

MR. BANKMAN-FRIED: I mean, the CFTC can object to self-certifications. They can review margin models only for particular products or asset classes. DCR has that that power. I would expect them to exercise reasonable and responsible judgment in doing so.

I will also note that, I think, as you noted, like, maybe a little bit confused about some things people are saying. Like, there are already direct models that existed and have existed for a while including some run by people in this room. Yes. I'm a little bit -- are you saying those are illegal or -- I don't know.

MS. LURTON: Yes. That's an interesting question that we spent some time on, too. I'd ask the CFTC historians in the room. I've done it already with a few people who aren't present, but I've asked. When direct models were approved because they do exist, was there a discussion about what it meant to remove the FCM.

And nobody that I've spoken to can recall if that happened. I can say, though, that for those who were in the building at the time, it's possible that because most of the direct models are 100 percent collateralized, the risk was seen as low, the fact that the FCM was not there. The introduction of margin is where the FCM really plays the key role. If you look at the definition, that's what it talks about.

And so it's possible that most of the direct models, they just never thought about FCMs. Again, the historians in the room may know that conversations took place, and I could be wrong.

There is a model that does allow leverage. And that one I think is unique. And someone else at the table could better speak to it, but it involves a very concise set of players who are credit-checked. Their business is scrutinized in that respect. And they can take physical delivery of a very specific product.

So I don't have a good answer for you Sam or for the room other than it's possible the CFTC didn't conceive of a model until now, where you're offering leverage to retail without the FCM. There are other models, but they're all distinguishable in slight ways at least.

That's all I have to offer on that.

MR. STEIGERWALD: Chris?

MR. PERKINS: Yes. I have a question. We've heard other CCPs also put forth that they would like to have a direct model. I would just like to know how they would structure it in a novel way that would perhaps address some of their concerns.

MR. STEIGERWALD: Is there anyone who would like to address that? Chris?

MR. EDMONDS: Well, I'm fairly certain that we are the model that Allison ended her comments referencing in our Canadian business that we have. We do have real-time credit checks. We are directly with those institutions. But it is different.

It is also regulated by the Alberta Securities Exchange. There's another level that's there. And it is a very specific product because it determines who turns their heat and lights on in their house. And so there's a physical delivery that if we had to step in, we know that the local utility -- we have access to those pipes in order to deliver that mission-critical service that goes there.

But it is for a very small subset of the world that lives in one particular geography. And it existed primarily under the Alberta Security Commission's rules until we came in. And as a U.S. facility taking it over, we put that through the same real scrutiny that we have today, notwithstanding the comments made about

FCMs. And there was no activity around that. So we put that in there and had all of the other checks that we would normally see if an FCM were involved in that.

And the point on self-certification, I agree with Sam that the Commission certainly has the right and the ability to from time to time inject or object to certain self-certification, but the real-time process of how that normally happens most of the time -- and I know that there are a number of folks in the room from the CFTC staff that will at least internally nod their head. There's a lot of information that goes back and forth before you get to that point. And a lot of that comes from the fact that we have this consensus that's built around the other market participants that are there, whether it be an FCM or others, that we know that if we're going to put a self-certification in, that we're not going to have an immediate set of folks against it at that. And we've tried to do that legwork up front.

It's uncertain that if you are in a smaller set of that and you don't have that type of consensus-building process going on along the way, whether the CFTC staff has enough time and expertise on that to make that decision. Time will tell over that. I'm not saying you do or you don't. We don't know at this point.

MR. STEIGERWALD: Thank you.

Neil?

MR. CONSTABLE: Yes. No. Thank you.

I wanted to bring this back to I think probably where we started, but this idea of not whether we should be doing this but how. And how could mean very, very, very slowly. It could mean slightly faster depending.

But I think the consideration here about the FCM, the non-intermediation part, where FCMs are, let's say, for a certain segment of the participants, taken out of the loop or they're not present, in the proposed model, in our stylized facts, there's a big role played -- and we'll probably talk about the details later this afternoon -- but a big role played by the backstop liquidity providers.

And with FCMs, imagine them out of the loop for a second. A lot of the risk absorption, the spare capacity is going to fall back on these on these BLPs.

And so there, that seems to me a place that's very ripe for the more legally minded people in the audience and the CFTC itself to think about given that FCMs are so highly regulated and they need to be in the existing system, how much of that needs to port over to these backstop liquidity providers, if at all. Do completely new rules need to get written for them?

That feels to me where the conversation ought to be happening because it's a concrete example that's in the proposal. So I'll leave it at that.

MR. STEIGERWALD: So I've been trying to wrap my head around the role and function of the backup liquidity providers as well. And I'm reminded of the discussion that has been going on for some years now about auctions, default auctions, within CCPs and the fragility that those processes can exhibit under some adverse circumstances. And I know that the established DCOs have spent a good deal of time thinking about how to manage a default waterfall, juniorization procedures to encourage clearing members to participate fully.

And I'm wondering whether participants in that conversation or related conversations have anything they'd like to add, especially from a legal and regulatory perspective but more broadly if necessary, about this concept of an external source of what otherwise I think we would think of as a forced allocation, which used to exist.

MR. HUTCHISON: Hey, Robert?

MR. STEIGERWALD: Yes?

MR. HUTCHISON: I'm going to exercise forced allocation.

MR. STEIGERWALD: Yep. Okay.

MR. HUTCHISON: How's that?

MR. STEIGERWALD: Yep.

MR. HUTCHISON: So we're sort of at 12:19. And I'm thinking about the afternoon. And I know we kind of touched on legal aspects but kind of did not. So that module I'm going to declare temporarily over.

MR. STEIGERWALD: Okay.

MR. HUTCHISON: And I think we should break for lunch and I have a note here to myself where I think the last words that were said I think were the articulate ones of what's been brought up this morning, which are risk absorption, backstop liquidity providers, cascading. I use the term besides "cascading," perhaps "hunting for stops," capital, and margin auctions. I think we can start this afternoon with a bang about all of that. I'm going to just call it colloquially financial stuff that I think we all wonder about and have a good debate about that. I think that would be a good way to come after lunch.

So I am force-allocating lunch on us, but I think we're not going to be able to talk about auctions for two seconds and then break for lunch. So I thought let's give ourselves a break.

Now, we have in the stylized schedule lunch 12:30, back here at 1:15. So that gives us a little bit less than an hour but pretty close. So why don't we use that time to our advantage? And I'll see you all back here at 1:15.

(A luncheon recess was taken at 12:24 p.m.)

A F T E R N O O N   S E S S I O N

(1:29 p.m.)

MR. HUTCHISON: We're back. I hope everyone had a good lunch and had a chance to socialize with people we probably all haven't seen in person for a while.

So this afternoon, as promised, we thought we would open up. And it may be the only conversation we have this afternoon. And I call it the number discussion. So there's all sorts of tangents that go on with numbers but subjects like auctions, cascading, backstop liquidity providers, default management, waterfalls, numbers, it's all wrapped in there. I know this is all interrelated, and it's hard to separate. But it's also perhaps good that at times, we do separate it.

So Robert's going to try his best to navigate that. And I'll pass him the hospital pass of doing that. There you go, Robert.

MR. STEIGERWALD: All right. Here we go again.

So we gave some thought during our lunch break to how to launch this conversation. And, like this morning, with the more general concepts, it's a tricky question. Where do you start? It's like the parable of the blind man trying to identify an elephant by touching various aspects of the beast and coming to different conclusions.

So, on the fly and with some trepidation, I must say, we've concocted a very basic stress example that's not meant to reflect any particular product on any particular market but that explores the dynamics used by both the traditional clearing models and the novel non-intermediated model for dealing with extreme stress situations.

So, Chris, I've invited you to think about this scenario that we concocted on the fly. Sam, you will have an opportunity to follow Chris. And what we would like to do is think about a situation where an unexpected event has occurred. Just think of it as something. Economists sometimes talk about sunspot events, just out of the blue, completely unexpected, sharp market movement. Market movement is severe enough. The two or more of your largest clearing members face variation margin calls exceeding the amount of their initial margin. So there's a margin breach problem. And they are unable to meet their variation calls on a timely basis on that day.

What happens next, Chris? How is that managed?

And, by the way, I must add the caveat that at some point, we get into terra incognita, certainly for me, not for Mr. Wasserman, where we deal with Part 190 rules, Chapter 7 bankruptcy proceedings under those rules, and even potentially resolution under Title II of the Dodd-Frank Act. All of those are real possibilities in some scenarios, but we are not using today's event to discuss those issues, as important as they are.

Chris, is there anything I need to add to the scenario to provide a sound foundation for you to talk us through the traditional CCP response to a default scenario?

MR. EDMONDS: No, I don't think so. I'll try to abbreviate this as much as possible. If you look at layers of protection, many of the traditional models say the membership criteria. So that's gone now and all of that. So we don't have to go back to that.

So, basically, what you're saying is we've now called two members in default. We are now taking those positions and those two member portfolios. We have taken all of the collateral that those members have posted with us -- that is now property of the clearinghouse -- in order for us to in the most judicious way get off risk at that point in time. We've begun to hedge those portfolios depending on what the asset class would be and the tools that are available in their various scenarios based on the asset class that you would do. All of that would be covered in the governance structure of our risk committees and other I'll say general committees that are out there and with the regulators, both ours and theirs, depending on the type of entity it might be. We've now hedged a portfolio, and we're beginning to work on an auction process where a series of members who as part of their membership requirement have agreed to be there as default participants in that. We have a portfolio that we're making a decision that we're going to that.

We have probably had some conversation about portability, don't know that that's appropriate here, but let's know that some of that portfolio construction piece was -- I'll pick on BlackRock because you're in the room. You know, if BlackRock has member suitability to move some of their accounts to another member, assume that we've done that for the sake of this. Otherwise, we're going to be here until 3 o'clock in 5 weeks from now. So we've done all of that.

Now we have the portfolio that's the actual risk that we can't solve any other way. We're going to auction that off. We'll go to that auction. There will be predefined levels that we expect, meaning you can't bid one bid at 100. Right? We know what the previous close was. We're continuing to watch the markets as they develop.

Assuming that the auction is successful, the portfolio is transferred. We're off risk. For the sake of this conversation, let's assume it's not. Okay? So we'll run a couple of options that -- for some of that, we will run through the process where we have auctioned off all that we could. We still have some tail risk that's there, for whatever the reason. We'll get to that point. We'll have that conversation. If we can't cure that, we're hitting our ICE's contribution because it's front of the waterfall. It's the first time any of the mutualized piece has been put at risk. We have 250 million up across some of the clearinghouses that's there in an insurance policy. We'll do that to buy time, cure that piece.

Assume that that is now paid and gone. Now it's our hard dollars that are up there. That's there and paid. And if we still haven't been able to cure this whatever remaining tail risk that we're talking about at that point in time, now we're going to hit a mutualized guaranty fund. Everyone's going to pay their pro rata share that's a member.

If, still, that remaining tail risk is not satisfied of the market, we can't clear the risk, at that point in time, and now we have assessed the members, depending on the clearinghouse somewhere between two, four times, depending on where that is, if we've assessed the members to that, all of our assessment rights have been exhausted. Now you get to the point, only then, when it's at that level. We're either going to do a partial tear-up or the variation margin haircut to get that. And, then, that would only be as we're facing the extinction in the clearinghouse.

The market has a choice the entire time based on their membership rights and obligations, to be clear, what part of that they're going to participate in and how deep that would go.

So that's as abbreviated as I think I can put those. And I'm happy. I'm sure we'll get into other questions about more specific pieces. But is that what you were looking for?

MR. STEIGERWALD: Indeed, and very succinctly put, I think.

So, Sam, that's one way of approaching the problem. And I'd like you now to explain how this hypothetical process would work if it followed the protocols that are essential to the stylized design.

MR. BANKMAN-FRIED: Absolutely. And I'm just going to put some hypothetical numbers on this and sort of walk through this, stepping back from before there is a margin call. I'm assuming it's the largest participant on the exchange they have a very large position on. So all of these margin numbers are going to reflect increased margin requirements because those do scale up with position size. And I'm going to use something like what would happen on FTX International today. Obviously, we're -- well, separately, there is an application related to FTX U.S. derivatives. I'm going to put that aside, although I anticipate similar answers to this.

So some customer, our largest customer, our largest two, but let's just go through one of them to start with, has a position on. It is some number of billions of dollars of notional. And let's say that, given the position that they have on, our risk engine assesses an initial margin requirement of 40 percent, a maintenance margin requirement of 25 percent, and an auto-close margin fraction of 15 percent. And I'll get through what each of these means as we go down this waterfall. Those actual numbers are made up, but they're plausible for big positions.

They start out with 50 margin, which is to say they have a position of X and they have X over 2 assets in their account. And note that in our model, that margin is posted with the clearinghouse directly. They cannot open this position until they've already posted the collateral. So, in fact, step one is they wire some number of billions of dollars to the clearinghouse. That lands. They get credit in their account. And then they put on a position twice that big in futures contracts. So they have 50 percent margin remaining. The margin is with the clearinghouse.

Markets begin. Let's say for now that they're long, a contract. Markets begin to fall. Markets fall 10 percent. And they now have about 40 percent margin left because we're in real time sort of marking to market their position and transferring collateral based on that.

So they had 40 percent left. They've hit initial margin. This means they cannot open up a further position. They cannot withdraw any assets. So they can't do anything risk-increasing, but they can still do risk-producing things and all of this while there are various emails and notifications and things that we were sending to the client alerting them of their position. Put that aside for a sec.

Markets continue falling. They fall another 15 percent. So this client now has hit their maintenance margin of 25 percent. At that point there -- and, again, along this pathway, there have been a large number of notifications issued to this client about their endangered position. At this point, we begin to slowly deleverage their position. And what that means, that the risk engine will basically close it piece by piece in the order book just with standard nonpunitive orders, just as if this person had chosen to start closing down their position there or had stop losses there or something like that. We do it slowly, and we do it in line with a small percentage of prevailing market volume so as to not overwhelm the temporary liquidity on the order books.

So their position is starting to decrease in size. And in some scenarios, either markets would recover or they would stabilize. And the lowered position size would mean that they are now back above this 25 percent maintenance margin level. At that point, we would seize V deleveraging. We would seize liquidating them.

But let's take the other scenario, where markets keep crashing. And, although we are deleveraging this position, it is not happening fast enough for their effective leverage to be decreasing because markets are also going down at the same time. So that their fraction of margin remaining keeps decreasing. Markets now move another 15 percent, let's say, but they've also closed down some of their position. And they now have 15 percent margin left in their account.

Again, usually, it doesn't get to this point. Usually, that first step of just standard order book deleveraging would be sufficient to bring client back above maintenance margin. But it doesn't happen in this case. We're looking at March 2020, the day that global markets crashed because of COVID-related fears. All right.

So now they hit the auto-close margin fraction ACMF at 15 percent margin remaining in their account. So, again, they're still above water, although without that much remaining and they still have a sizeable position on. If their position were now small, we would not require as much margin for it. But in this hypothetical, let's say that this hasn't been enough and that we didn't just liquidate them faster in the order books. That would have undue temporary impact. We're not going to send a $10 billion market order and in the order book. Any liquidation is going to have market impact, but we attempt to mitigate the short-term impact such that it is hopefully not larger than the fair, efficient market, longer-term impact.

So we're at this 15 percent level. This is where the backstop liquidity provider system begins to kick in. So at this level, the sort of theory behind this is the order book liquidations aren't working fast enough. They've already dropped to below half of their or around half of the collateral that they had, collateral level that they had, when we started liquidating them. So there's a serious danger that if we just keep doing this and keep it within a small fraction of volume, that their account will not be closed down.

And, again, this whole time we're margin calling them, we're sending them emails, reaching out to them. They could top out at any point. And we register deposits 24/7/365 in real time. So if they sent more collateral to their account, we would instantly stop the margin call. And so we're trying what we can to get them to do that, but in this hypothetical, they just don't have any money left. Right? Like, they're like, sorry, we're out of money, there's no more coming, be this what it may. Backstop liquidity providers kick in.

At this point -- and the backstop liquidity providers are sophisticated, you know, quantitative trading firms, market-making firms, other large market participants who had prior opted in to become backstop liquidity providers. And when you do this, you specify a set of contracts you'd like to BLP for and a rate limit. That rate limit is effectively, like, dollars per minute. And so a hypothetical large multinational trading firm might say, "We're willing to take $1 million per minute of BLP fills in bitcoin futures," whatever, something like that. Each of the these BLPs has specified that.

Given that they have specified all of that beforehand, we now start to close down this position against the BLPs. And the BLPs can't say no at this point. That's what they signed up for. They signed up for taking these fills, whether they like them or not when it came. And so we are, effectively, closing down this customer account that is getting deleveraged against the backstop liquidity providers. We do a pro rata to the rate limits that they had given.

Again, piece by piece, we take a small chunk of the remaining position, pass it out to those BLPs, and pass out a portion of the remaining collateral to them as the stuff that they now have backing that position to try and get out of it. They can do what they want with it. Some of them are probably going to go to other marketplaces to hedge their exposure. And that is one of the mechanisms by which we bring global liquidity from all venues to the order book, through this. Some of them are probably going to decide that they are comfortable taking this position on and holding it longer term. Some of them might decide to hedge in a correlated assets. You might see them taking on a bitcoin quarterly future BLP and hedge by selling S&P 500 futures on CME or something like that on the grounds that this is a correlated market move. But maybe bitcoin has moved too much, making this up. Right? They're all going to do what they will with that. And we are closing down this customer account against those backstop liquidity providers. Hopefully, that works.

And, again, if we've closed down part of it and it gets above the auto-close margin fraction again, above the 15 percent, we seize the BLP process and go back to the normal deleveraging process. And if it, in fact, takes it above 40 percent remaining margin or 25 percent in this scenario, then we'll seize liquidating the account at all or if they wire money in or deposit tokens or something like that, we'll immediately seize liquidating the account if that brings them above fraction.

Okay. So now you're at the BLP layer. And, again, the vast majority of things that didn't make it through the order book layer are resolved with this layer. But let's say that this still fails. And at this point, it's worth noting that there are actually two different things going on here, two different types of risk and two different types of failure. One type is looking at the position, and the other type is looking at the collateral.

So one thing that could happen is a lack of ability to find people to take on the positions, to be willing to take on the long futures position, that this client had. Another type of problem you could run into is there are people willing to take that on at some price, but that price would put their account below bankruptcy. In other words, they would have negative margin left in their account at that price.

MR. STEIGERWALD: Let me just interject that we're using the term "bankruptcy" --

MR. BANKMAN-FRIED: Ah. Sorry.

MR. STEIGERWALD: -- in a very specific sense.

MR. BANKMAN-FRIED: That's correct.

MR. STEIGERWALD: Okay?

MR. BANKMAN-FRIED: Yes. That's correct. Sorry. Very good point. I don't mean bankruptcy in the legal sense.

MR. STEIGERWALD: Right.

MR. BANKMAN-FRIED: What I mean by -- I'll use zero value instead. It means that their account on FTX has mark-to-market zero value left, that their negative P&L on this futures contract is exactly equal to the margin that they deposited onto FTX prior to putting it on. Whenever I said, "bankruptcy," replace it with that, that statement, the zero price, so to speak.

And the risk engine really has two core goals. One core goal is to ensure the orderly passing of risk, to ensure that this client's positions are passed off to the market in as orderly as possible a way and as rarely as possible. We don't want to deleverage a client if we don't have to. The secondary goal that it has is to do this while avoiding accounts going negative in value because as soon as that happens, there is a loss in the system.

So now let's explore both of those two cases. The case where there is a negative value remaining is a case where we successfully end up closing down its positions, let's just say, whether it's on the order book or through the backstop liquidity providers. But markets move so far, so fast, that the account has negative value left by the time that's done. And so the account no longer has a position in it. Those have been passed off to the BLPs. But it has negative $300,000 of collateral.

In this case, the guaranty fund kicks in. The guaranty fund, $250 million is what we have proposed to start for FTX U.S. derivatives. And that is entirely our own corporate cash. That is not mutualized. That's not other participants. And that is fully segregated. It's just sitting in a Bank of America account right now in anticipation. That comes in to, effectively, top up the account to zero and fill that "hole" in the system or you can think of it as to pay the collateral transfer to those who had the opposite side of the position. It's a hundred percent our skin in the game with this level. So the guaranty fund is the next layer here in terms of the account value, and that will top up any accounts that effectively got negative.

There are a few ways of reframing this. You could be reframing it as the fill prices that happen. It's all the same thing in the end.

Further down this layer here -- I want to be careful about how I frame this. I'm going to remove myself from legalistically talking about any applications right now. And I'm going to just speak in terms of, like, what I would do as an operator of an exchange and what I would project I would feel would be appropriate and what has happened in terms of how we think about the international venue -- we haven't had to do this -- which is that if we, the DCO, are the ones running this risk model, then I don't want our customers to the extent possible to ever have to worry about the sanctity of their funds or their positions or their collateral. I want it to be the case that a position is a position and that you get paid out what should straightforwardly get paid out.

I would be very tempted at that point to say that the next layer here is our company, is that the cash that we have -- like, that is a thing that I can tell you I would be tempted by. I'm not making a legalistic statement here. It is not a proposal for something, but I feel that that would be a morally appropriate thing to do. And I would want to protect the sanctity of the customer positions and collateral above our corporate P&L.

You go below that, though. Right? And at some point, you would have to go below that. And at some point, there is basically the equivalent of variation margin haircutting. Right? At some point, there just isn't enough money in the system to pay out the positive P&L. And some of that would have to be haircut.

Again, we've never gotten to that point internationally. I would never want to get to that point. I would do what I could to prevent ever getting there. That is at the bottom.

The other leg of this, which is actually fairly similar, is on the position, actually taking on the position. And at some point, you hit a point, again, beyond these layers, where you could have partial tear-ups because the BLP capacity has been exhausted, the order book liquidation has been exhausted in terms of fraction of volume, the account's already way under water, and it's just nowhere close to being able to actually close down this position. There isn't liquidity for it in the markets. It just isn't there. And at this point, you're likely also dealing with a guaranty fund scenario because it's likely already below zero value, but, separately, its position has not yet been closed. And, again, at this point, I would want to find a way to do what it takes, morally speaking, not making a specific statement, in order to make all customers whole here, even if that came at an expense to myself or the company.

But, putting that aside, at some point, you get two partial tear-ups here, where you're, I mean, doing the intuitive thing, tearing up the people who have an opposite-sided position against the agency open, effectively, unclosable margin call position. That is the essential nature of the waterfall here.

There's one last point I want to make. I didn't talk about intermediaries here at all. And that is very intentional because the DCOs risk process does not consider intermediaries. It just considers accounts and collateral with the DCO. Separately from this -- right? -- maybe Alice is a user on the exchange and Bob is an FCM and Alice is accessing the exchange through Bob. And Alice and Bob might have some credit agreement with each other. Bob might be posting collateral on behalf of Alice or might be topping up the account on behalf of Alice. That's abstracted away from the risk engine, and it's abstracted away because of that from contagion with any other members. And Bob and Alice might have their own arrangement with respect to Bob margin-calling Alice or something like that, but, one way or another, the correct amount of margin was posted to the clearinghouse prior to that position being put on from some combination of them, in one way or another. So the risk engine isn't concerned with that piece. Nor does it impact the other participants.

So, anyway, that's the summary.

MR. STEIGERWALD: Thank you.

MR. EDMONDS: Hey, Robert? Can I just --

MR. STEIGERWALD: Yes.

MR. EDMONDS: -- add one thing? I appreciate Sam's point around while not committing to it, not legally, all of that.

MR. STEIGERWALD: This offer is not valid in the District of Columbia.

MR. EDMONDS: We could have another roundtable about what is valid, but that's a different conversation.

I do think it's important, though, to say that many of the exchange clearing groups that are out there today being publicly traded, that there is this moral compass there in a similar manner, that if we were to say, "You know what? This clearinghouse, just it's too much of a pain in the backside. We're going to let this go" sort of ends our business as well. So I think we share the motivation of finding the right level of resolution for in a utilitarian fashion at that point in time. So I appreciate Sam saying that.

I think everyone that operates in this business has to find some way to act as a utilitarian along the way in order to protect your shareholders and the future value of the enterprise.

MR. STEIGERWALD: So it strikes me that if this were strictly a question of moral philosophy, we would not be seated here at the CFTC. We might be at Georgetown University or Washington Cathedral pondering the morality of all of this.

Sam, several points came to my mind. You mentioned at one point the possibility of topping up a collateral account, as I understood you, using tokens.

Would you expand on that, please?

MR. BANKMAN-FRIED: Yes. So this is not a comment on any pending applications before the Commission. This is not a comment on whatever. That's TBD. Let me talk about the international platform for a second.

Everything on FTX International in the end is denominated in U.S. dollars, so positions. We talk about position sizing in U.S. dollars, notional. We talk about collateral in U.S. dollars, notional. And dollars are one of the predominant, the biggest form of collateral posted but is not the only allowable collateral format posted on FTX International today. Bitcoin, as an example, can also be posted as collateral. Now, again, we denominate in dollars, and we haircut. So if someone posts a bitcoin as collateral internationally, they don't get quite one-to-one treatment on that.

The philosophy behind this is actually very similar to the philosophy behind the margin required for a futures position, where in an extreme scenario, we may have to liquidate that bitcoin for dollars. Like, it may have to convert that into dollars in order to fund collateral transfer. And, as such, there is some cost, some impact associated with that. So there's a haircut, and that haircut grows, the larger that collateral position is. But we do allow multiple assets, including some tokens, as collateral with some amount of haircutting on the international platform.

And so, getting to your point of 24/7 top-ups, what does this mean? I will list again on international the ways that one could top up their account at, let's say, midnight on a Saturday. So one could not send an ordinary wire transfer from one bank to another bank because that is not going to clear at midnight on a Saturday. What one could do is the following. As we said, one could deposit bitcoins, and those will be immediately credited, within minutes, to their account as collateral. One could deposit a stablecoin. So these are tokens backed one-to-one by dollars in U.S. bank accounts but that move on blockchain rails and, thus, can move 24/7 in real time. So you can deposit stablecoins, too, as collateral at midnight on a Saturday, again, cheap and instant. You can deposit dollars via some methods.

So most of the banks that we have bank accounts at have an intrabank settlement network, sometimes specifically cryptocurrency-related, sometimes not, where if you have a bank account at that same bank as we do, you can do a 24/7 instant, free transfer of dollars to the clearinghouse. And it's, effectively, a ledger transfer from that bank. So if you're banking at the same place as us, you can, effectively, do the equivalent of a wire transfer 24/7 to us. There are some countries that just have 24/7 standard rails for fiat currencies. And so there's that.

And, then, the last thing which is worth noting is, again, going to this intermediary FCM point, where, even if you don't have an asset that moves 24/7, if you're going through an intermediary that does, they could top up on your behalf. Maybe they already have funds stored separately with FTX in case there is a client of theirs whose account they want to top up. Again, I'm not going to the legal details of how exactly this works, just talking internationally for now. So they could do it on your behalf and say, "Hey, I trust you. You've got a day to increase your collateral with me, the intermediary, but, in the meantime, I've topped up your account with the assets that we had on hand, either with the clearinghouse or separately that could be transferred 24/7, in order to reach there."

MR. STEIGERWALD: So, before turning back to the group for discussion, one other point that stands out to me is your reliance on these contracted-for backup liquidity providers. So I wonder how you think about the possibility of strategic default by these important liquidity providers. There is a reliance that the traditional clearinghouses place on their members to participate actively in a default auction, for example, and the clearinghouses have created incentives for their clearing members to participate actively and not opt out. How do you think about that problem?

MR. BANKMAN-FRIED: Yes. So a few things. The first thing is that, while I believe that the BLP system does give an added layer of liquidity to this system, mechanically, again, putting aside any current applications or things like that, it wasn't necessarily a necessary piece of this because there's still the order book deleveraging that one can do. Right? And you could just remove this BLP stuff if you wanted to and keep going with the order book closing down. The reason that we have the BLP system is to try and address cases where there is basically temporary illiquidity in order books, where our exchange doesn't happen to be the most liquid, where whatever. Make up your own reason for why this is as a backup layer of sophisticated market participants who understand risk well and can do things like transport risk and liquidity between venues, can think about holding risk if they find it appropriate or just like, effectively, supplement market depth through the BLP system. That is sort of the layer that it plays. And I do think it is helpful on that front.

And, again, when you have these participants, they don't have the ability to say no in real time. It's not a, you know, we're asking if you would like this. It's as you are getting this position. And that's what they've signed up for. Now, no one has to be a BLP, but the people who have agreed actively to be BLPs are signing up for that. And so there isn't an ability for them when the time comes to say, actually, "No, I'm not interested in providing here." And there's a programmatic algorithm for how much collateral they get these positions on with and they're allowed to specify again just the limit of how much a position they're willing to take on through this.

I'm not sure if -- I think there might have been another question that I didn't fully understand baked into what you asked. That's the general answer, but is there another thing?

MR. STEIGERWALD: There may have been another thing that I don't even remember, but your answer does trigger another thought. I'm old enough to remember when people were getting notification of positions they didn't like especially. At least this is an apocryphal story, if not real, that they would reach for the outlet for the teletype machine and pull a cord --

MR. BANKMAN-FRIED: Yes.

MR. STEIGERWALD: -- out of the electric outlet. That's a story that's told, for example, about the failure of Bankhaus Herstatt in 1974. So it sounds to me like your backup liquidity providers don't have the modern equivalent of an electric cord to pull out.

They are somehow automatically getting the position, whether they like it or not.

MR. BANKMAN-FRIED: Yes.

MR. STEIGERWALD: And, at best, they can, what, close shop and go out of business?

MR. BANKMAN-FRIED: Well, I mean, it's nonrecourse to them in that it's limited to the collateral that they have on FTX as well. And it's limited by the rate limits that they have chosen to set. And so they could say, "We're not willing to take it beyond this total size, beyond this limit of dollars per minute."

And, again, we're not forcing anyone to be a BLP. These are people who have chosen to accept this responsibility in this role. But if they choose to do that, then they do have to accept these positions in real time. And that is the current point of it. Like, this is going to be the most painful time for many people to take on positions. That's when it's most important for them to take it on. And so we don't want to have a negotiation with them when they're most needed. We want to come up with a contract beforehand that they are comfortable with agreeing to. And then the risk engine just runs, and it does it in real time. So yes. They can't. I mean, they can unplug their computers, but they're still getting the positions. They're just not looking at it.

MR. STEIGERWALD: Okay. I must say, the older I get, the more -- the less, I actually should say, the less, confidence I have that contracts are always observed. And there are always circumstances, tail circumstances, where people will say, "Sue me." But perhaps I don't understand the technology well enough to know what consequences would follow from such a decision.

MR. BANKMAN-FRIED: They could threaten to sue us if they wanted to. I think it would be a frivolous suit, but they could threaten to. But note that here, we have their collateral. It's at the clearinghouse. Right? The risk engine is printing these fills in their account. It's not sending an API request and asking for a response. It's sending them a notification that it happened. And so, like, they technologically do not have the ability to say no to these fills.

MR. STEIGERWALD: Okay. Okay.

MR. BANKMAN-FRIED: Like, they would have to object, try and find a way to object, to it, but, like, if they just say, "No, I'm not interested," it just happens anyway.

MR. STEIGERWALD: Yes. So I feel at this point, that I'm somewhat like the customer who's looking for the place where I put my gas in my electric car there's a mismatch between my expectations of what happens at a certain point of time and the new thing that has been created. So I apologize for that, that disjunction.

Chris, I like some of the crispness of the plan. I worry about not completely grasping it as personally and feeling very dependent on others to tell me that the technology either does or doesn't work and the liquidity either is or isn't there, but it has some compelling features. In fact, a similar model is used by some FCMs in relation to some customer accounts, as I've given to understand. Maybe it's a horse of a different color once we get to the DCO level. I'll grant you that, different order of systemic importance perhaps.

At the same time, I'm attracted by the opportunity that exists in the traditional system to find the point at which the clearing membership, the clearing community, is willing to say, "No mas!" Right?

So I think of this. I try to think in the terms that my colleagues, the economists, think of. And I think of that spot as the place where the marginal cost of continuing to fund variation margin or allocations, or whatever the demand for liquidity is in a default scenario, exceeds the marginal benefit of holding on to the positions. And while that's an indeterminate point, it's something that's sort of discovered. It's a price, I think, that's discovered through the interaction between the CCP and its clearing members. I don't know whether you agree with that, that conceptualization, but the idea is that there's an opportunity interactively to do some things that I think are missing, but I also may be missing some of the content of what Sam has been describing.

Does that give you enough to talk with?

MR. EDMONDS: I mean, look, there are other

CCPs sitting here, but I'll take a stab at that. And they can correct me in their rule set.

I mean, I think, ultimately, at the end of the day, on a philosophical level, this is a function of time. And so it's not by mistake. And the FCM sitting around the table probably would agree with me at the end of the day that it's much better when defaults happen on a Friday than they happen on a Monday morning. Okay? So there is a function of time. And, while scientifically what Sam has articulated through their model is very finite in the amount of time and the decisions that are made and when they're made, how they're made, automatic fills, we're not asking, it's going in, whatever -- I'm sure you'll get to cascading at some point, and we'll have that debate -- there is not a lot of time. You'll make your own decision whether that time is valuable.

If you look at the crisis in '08, everyone gathered in a room, and we needed time. And we are still cascading in that. So make no mistake. I mean, lots of people around this table felt the pain of that cascading that took place.

So while there is a tremendous amount of science and there will be in the future a tremendous amount of science that positively impacts the operations of our market, at the end of the day, there is a little bit of art. And the question is, are you making a bet on the art in that time of stress or purely the science? You know, that will be a decision that everyone makes with their own dollars along the way.

I tend to think that the history of the traditional model has provided the time necessary to find not the most pleasant but the most applicable solution, but others may have different points they want to add.

MR. DOWNEY: Just to take it a little bit out of art and morality and just think a little bit about what's in writing and since we are talking specifically about models, I just wanted to point out a few things. To the extent that you're going to de-risk or conduct settlement via a stablecoin or crypto, or whatever it may be, I noticed that there are references to haircuts. As far as we can tell, those haircuts out offshore are 2 and a half to 5 percent, which are significantly less than we might expect otherwise. And that's when you are referring to bitcoin and Ethereum and other cryptos. Notice that some of the stablecoins have different haircuts, and terracoin had a haircut of 20 percent before it went down 70 in one day.

And, then, lastly, I would just point out that it's a very good point that we would all seek to ensure that the market continues to operate, but if you just look at the rulebook -- and in this case, I'm talking about the rulebook for the U.S. application, which we're not really supposed to talk about -- there is an ability to conduct partial tariffs as a first line of defense. So we can talk about the fact that we would all put up additional capital. CME actually provided a guarantee if you go back far enough in time, but, ultimately, the rulebook and the technical details of what we're talking about here is not necessarily supported by what we would like to see happen in a more moral universe.

MR. STEIGERWALD: There are so many things that are disappointing about living in a non-moral or amoral universe.

Claire?

MS. O'DEA: Yes. I just had a few questions, really, just to really understand how the BLPs work given they're so fundamental to this model. So I'm still a little unclear who they. Are they regulated entities? Is there a particular criteria or credit checks that happen to ensure that they can be a BLP. And how do you ensure they turn up because, obviously, if everyone turns around and hasn't got the appropriate collateral to take the positions, that could be an issue and, similarly, with fair pricing as well because the BLPs themselves could potentially -- and I think, Sam, you mentioned this in your presentation before. They can potentially feed into the negative feedback loop and come in with low prices and see an opportunity to make a profit themselves.

MR. BANKMAN-FRIED: So a few things on that. First of all, I don't think I necessarily see them as fundamental, as being as fundamental to -- I think they are an important and valuable piece of it. You could have this exact same model without the BLP layer just using the order book for deleveraging. I think the BLP layer does add an extra layer of liquidity. And I do think it is an important one, but I don't think it's a necessary one.

I think, second thing, in terms of who they are, I can't divulge customer information. We can look into whether there are BLPs who are willing to have their information disclosed, but I can say they are, by and large, a lot of firms that you would have heard of, standard large participants in global liquid marketplaces who have large balance sheets and are used to handling large volume, large positions.

And, to your point about the pricing of these, the BLPs don't choose the pricing that they get. The fills at those prices are just based on market price and the amount of collateral left in the account. It's not an auction from the BLPs.

And the last thing, which I think is a good point that you brought up, is about the amount of collateral that the BLPs actually have. And the answer is quite a bit internationally, but I think that that -- and, again, I want to avoid making a sort of, like, declarative legal statement about any pending applications or anything like that, but I do think that some amount of assurances around the collateral that BLPs have on the platform could be appropriate and helpful for providing transparency around the amount of liquidity backstopping the system.

Just one final last thing that I'll note is, like, on the collateral haircutting, the risk engine worked fine for the spot assets on those days because it didn't take a day to close down a position. It takes quite a bit less than that. And so, again, just talking internationally, not in the U.S. for now, the 20 percent haircut was sufficient, even during one of the largest moves we've ever seen in the cryptocurrency ecosystem to avoid any mutualized losses, any substantial guaranty fund draws, and to keep markets orderly.

Despite that, this is not a statement about what collateral levels would necessarily be or haircut levels would necessarily be on any hypothetical U.S. applications. That is a separate thing to note.

I note again also that if you have a large amount of collateral in any of these, those haircuts do get quite a bit steeper.

MR. STEIGERWALD: Okay. We're starting to get more and more interest in joining the conversation. I promise you I will get to you. Let me move around the room a bit. Stephen?

MR. BERGER: Yes. I just want to pick up, not to labor the point around the BLPs. And I'm looking at the language from the stylized example for the avoidance of doubt.

I guess, so the first question I was trying to wrap my head around is, the margin from the BLPs with respect to the positions they're meant to absorb, are they prefunding that or is it on the back of just excess margin they happen to be holding associated with their existing portfolio? So is our expectation that BLPs would have to prefund the margin associated with their commitment to absorb positions? And there's another I guess reference in the stylized example that says positions may be allocated to the BLPs, if necessary, at a discount. And that discount is funded by the guaranty fund. So is the expectation that the margin is prefunded or the margin comes out of the guaranty fund when the BLPs have to step in and take those positions?

So that's, like, my question with respect to the primary BLP system, but, then, there is all this discussion of a secondary BLP system. And in that instance, it's not clear to me whether market participants are signing up to be the secondary BLPs or they're just being on-the-spot nominated as you're now my secondary BLP because the language here says, in this event, the DMO/DCO will turn to the secondary BLP system, represented by the largest market participants with offsetting positions to the liquidated accounts. So in that instance, active market participants, who just happen to have large positions that are on the other side of the market from the people who are being liquidated, are going to have positions assigned to them. They happen to be people who are right about the direction of the market. So are you incentivizing the right behavior by telling the people who did the research to be on the right side of a market move that, "Sorry. Because these other people are getting liquidated, we're going to assign their positions to you now?"

MR. STEIGERWALD: Thank you.

Sam?

MR. BANKMAN-FRIED: Yes. So a few things on that. When you talk about the price of the BLP transfers, the BLPs need to have collateral prefunded in their account prior to taking these on. The thing about the guaranty fund there is that if the account that is getting BLP, that is getting margin called, has negative value left in it, that would correspond to, like, they could only pass a position off at prices bad to the current market, to the BLPs. And in that case, the guaranty fund makes up that difference in pricing, effectively. So the BLPs still get fills that are reasonable that are good mark-to-market. And if the account doesn't have collateral left in it to do that, then the guaranty fund kicks in that funding. So the guaranty fund is not taking on a position here, but it is, effectively, topping up accounts to the point that they would need to be. And you can think of whatever sort of schematic you want for whether that collateral is transferred to the account that then gets BLP normally or whether the BLPs will still have them and then BLPs are compensated sort of the same, the same thing. So that that's the answer to that question.

And the answer to the question about the, like, secondary BLPs, at that point you're starting to get into the realm of, basically starting to get into the realm of, position, partial position, tear-ups. I think those are bad, and those are things that should never happen unless absolutely unavoidable, that I would intend to never happen on FTX. And that would come after everything that we can do to prevent that.

And, obviously, partial tear-ups are something that every counterparty, every CCP has to have somewhere in their waterfall because if everything else in the world fails, there's nothing else one can do. But I would put that after the clearinghouse having done everything they can to avoid that because I agree it would not be at all fair to routinely go to people with large winning positions and say, "Sorry. That's not your money. We fucked up on our risk engine." That is that is not fair, and that gets back to my moral statement about doing everything I could to prevent that. That would happen before you get to the secondary level there. And yes.

MR. STEIGERWALD: You did say, "forked up," right?

MR. BANKMAN-FRIED: That's correct.

MR. STEIGERWALD: Okay. Just for the record.

MR. WINNIKE: Thank you.

And, to continue to delve into the BLPs, I think when we look at both the default waterfalls that ICE presented and FTX presented under the model -- right? -- customers are at the bottom of the waterfall, which we care about. And we think that is appropriate. And the question is, how much risk is absorbed in between and capital is in between us and an allocation of loss?

And I think when we take a look at the traditional model, we have a fair amount of transparency into the players, like the FCMs, who are there to participate in funding the default fund, potentially being involved in assessments, as well as their overall equity, kind of their financial strength.

And so the question I would have is, could this model with BLPs have similar levels of transparencies? Maybe today, it wouldn't be allowed under confidentiality agreements, but could you have transparency to investors, both in terms of identity but also kind of in real time, how much capital is on the platform and committed? And do you think the model would work with that level of transparency?

MR. BANKMAN-FRIED: Again, this is not a legal statement. It is not a statement about any pending applications. This is a moral statement from Sam.

And I would tell you that I could see it as being entirely appropriate to do something like give real-time disclosure about the aggregate amount of collateral that BLPs had free on the platform. I'm making up that, but something like that, I could see being or maybe some -- so we're not showing like real-time P&L of customer accounts, which could be proprietary information, maybe some bucket around that, like, give it like what is the sort of, like, a factor of two range within -- I don't know -- I'm making this up exactly but some amount of transparency around what that level of assets are I could see being entirely appropriate.

And, obviously, worth knowing here as well, you are guaranteed that there is margin held at the clearinghouse that is above the initial or at least above maintenance margin of all the positions there. And that is prefunded with the clearinghouse. So they are sort of automatically transparent. So they would be at a lower limit for the amount of those funds.

And then the guaranty fund as well, I could see it being entirely appropriate to give real-time information about the sort of current size of the guaranty fund. We've made very public what that is proposed to be starting out at as well.

MR. STEIGERWALD: So, again, we're attracting a lot of interest in the conversation. I would ask for your patience just for a moment. We have Dennis McLaughlin on the line from the U.K.

Dennis, thank you for joining us and staying with the conversation. Would you make your intervention, please?

MR. McLAUGHLIN: Yes. Thank you, Robert. One question I had -- and I don't quite understand. In traditional clearing of normal assets that we deal with every day, discretion does come into the picture at some point, especially if it's a stress event and the entire market is melting down.

Given the speed at which we're talking about here in terms of marketing portfolios moving to backstop liquidity providers, the rapid nature of the information coming and the actions being taken on the back of that, where in this whole picture does discretion play a role, if any? And how does the regulator get involved or is the action already over before you even know about it?

MR. BANKMAN-FRIED: So you're correct that in the clearinghouse model here, there's not a lot of discretion. Technically, when you get down to the very bottom ends of this waterfall and we start talking about tear-ups, partial tear-ups, then the risk committee starts to get involved. So there is a point at which that happens, but it does attempt to stave that point off until the last moment.

And the core first layers here are automated. However, first of all, again, this is limited to the collateral that people have on with the clearinghouse that they have already pre-delivered to it. And, then, the other thing worth noting is that if you wanted to access it from a more discretionary or a more sort of bespoke standpoint, you could go through an intermediary that would have whatever relationship or agreement or timescale the two of you work out in terms of credit, between you two in terms of topping up, in terms of delivery and settlement. And that intermediary could be the one that is, effectively, handling the real-time margin posting and delivery to the clearinghouse if that was how you felt comfortable accessing markets, as many people, especially many institutional firms, do today.

MR. STEIGERWALD: Thank you.

MR. McLAUGHLIN: And the regulator? How does the regulator get involved or do they get involved at all in this process.

MR. BANKMAN-FRIED: I mean, it is not. The regulator is always welcome to get involved and, obviously, at some point would likely get involved in a sort of, like, all-out market route, where markets were massively disorderly probably across many asset classes. I think it's like beyond me to speculate how they would choose to get involved, but, I mean, here, like in other assets, it's going to be hard for them to get involved within 13 seconds of a move. And there is going to be volume that happens there. It's going to be trading. There are going to be market moves.

And it is true that in this case, there might be account deleveraging that happens on shorter timescales as well, but if the regulator wants to reach out and get involved, they obviously can do so. And we were to probably expect reach-outs in very extreme scenarios.

MR. McLAUGHLIN: Thank you.

MR. STEIGERWALD: Thanks, Dennis.

And thank you, Gerry, for your patience.

MR. CORCORAN: No worries.

An observation here and in these examples that have been presented. If that customer that is defaulting in your firm is at a traditional FCM, the traditional FCM is going to absorb that hit up to the extent of their capital before we get into a liquidation situation that occurs under the model that we're discussing today. So this is a real obvious example of why the FCM layer is really a protective layer for the system as a whole because that FCM will absorb that loss until up to the last drop, as we'd say. And then it would go into Chris' world or Sean's world. So that's just an observation.

The other question I have about the BLPs is, like, why would they do this? What's the compensation for BLPs that at some point in time, you can just assign them a boatload of positions that are losing a lot of money? Why are they there? What is the compensation and motive for BLPs to be at your side?

MR. BANKMAN-FRIED: So on the second one, the BLPs do get the fills at a price which is good mark-to-the-market at the time they get them using a portion of the remaining collateral that's in the customer account that is getting BLP'd off. And so there is a trade-off there, obviously. You get a fill which is good mark-to-market, but you're you may be catching a falling knife. It's a volatile market environment. That's sort of what they're balancing. And so they tend to be firms that are very sophisticated in their handling of risk, especially in real time, that can access multiple marketplaces, do arbitrage, and sort of make sophisticated decisions on this and are willing to take the, effectively, compensation of the good fills mark-to-market in return for that.

To your first point, I do think that that is a really valuable function that FCMs fill for some clients. And we would be excited to connect with any FCMs in this room or not to talk about filling a similar role on our venue, where internationally we have similar types of intermediaries today that are, to the extent that they choose to, deciding to put their credit on the line with their customer. It is pre-delivered to the clearinghouse, but they can choose to back that position up with their own funds, rather than having it being deleveraged. I think that can be a healthy role in the market and a valuable one for many clients. And we'd love to work with FCMs on that.

MR. CORCORAN: But I see the role of the FCM is to make sure that client is creditworthy and that in this particular example, that customer could be creditworthy, but in your world, they don't have time to meet the margin call, where in an FCM world, they will say, "Okay. This is a very large company. We have a long history with them. They're going to be wiring $20 million in in the next 15 minutes. We don't need to do a liquidation on this."

So, again, this is not to take a shot, so to speak, of your model but to really put forward the importance of an FCM, the role the FCM plays in keeping the marketplace orderly.

MR. STEIGERWALD: Emma, you have been patient.

MS. RICHARDSON: Thanks.

I didn't actually want to ruin the flow of the conversation because I feel like it's more around the specifics of the model. My question was really much more from a principles-based approach around the default fund and the adequacy of this. I think there's a specific number that is being discussed here but was really more thinking about how the traditional way that a default fund is constructed under the existing regulatory framework might not be appropriate for some of these new direct participation models. So that was the point I wanted to make, but I feel like maybe if there are specifics more around this model, maybe it's best to address that question later in the session.

MR. STEIGERWALD: Okay. Very good. No. I take your point. Many of us have been scratching our heads about what cover 1 and 2 or anything more than that mean in this context and how do we go about evaluating the adequacy of financial resources that would be deployed in this new model.

MS. RICHARDSON: Yes.

MR. STEIGERWALD: So let's get to that as we as we can.

Nelson?

MR. NEALE: Sam, I wanted to follow up a little bit to Stephen's question, I think a little bit to Gerry's remarks, just so I understand it. If we get into a situation where you have to transfer risk to a BLP in the stylized facts guide, there was mentioned a discount. So, number one, are you providing them those positions at something less than market. I think you said no and it transferred at market. So I'm trying to figure that out.

And, number two, given, say, a commercial entity that doesn't have time to post its margin and it heads down this BLP track, why don't you open? If there is a discounted opportunity, why don't you open it back up to all market participants versus strictly going down to the signed-up BLP route of participants.

MR. BANKMAN-FRIED: So, first -- and I think there might be confusion over discount versus premium depending on the direction of the position that they flip. So let me just take an example here to make it explicit because I may have said the wrong things. I may have misinterpreted something.

Let's pretend that the position is a long position that is getting closed down against the BLP. That BLP will get that position passed off at an effective fill price that is below the market price. So the BLP will get a fill which is good for the BLP mark-to-market in exchange for being forced to take that risk off. And that will happen, effectively, using some of the collateral that is in the customer account. So, yes, the answer to that thing is yes, it does happen in a fill, which makes sense for the BLP.

MR. NEALE: So they would get a favorable fill?

MR. BANKMAN-FRIED: Yes, that's correct.

MR. NEALE: Okay.

MR. BANKMAN-FRIED: Well, favorable if you ignore the fact that it is --

MR. NEALE: Understood.

MR. BANKMAN-FRIED: -- forced and risky.

In terms of opening up to everyone, there's obviously an opportunity for everyone to post liquidity in the order books in order to get this in the previous step where it was happening with the order book liquidations. And that is how we start this process off, is just with standard order book liquidations.

And we get to the BLPs if the account is rapidly trending towards zero remaining collateral and the order book was not capable of doing it. I think you could imagine us building out a system where, effectively, anyone could sort of like instantly opt into being a BLP if they wanted to. And right now, anyone can be a BLP if they want to. They have to prearrange that, however, before the market move. What you're saying is, effectively, could you have people sort of pop up and say, actually, "I'd like to be a BLP for the next hour."

MR. NEALE: I'm basically saying --

MR. BANKMAN-FRIED: Yes.

MR. NEALE: -- if you are offering a favorable fill --

MR. BANKMAN-FRIED: Yep.

MR. NEALE: -- against the market --

MR. BANKMAN-FRIED: Yep.

MR. NEALE: -- then is it going to be exclusive to five large players or is it going to be opened up because there may be some market participants that say, "Hey" --

MR. BANKMAN-FRIED: Yep.

MR. NEALE: -- "I want to play in that space if I get a favorable fill."

MR. BANKMAN-FRIED: Yes. Well, I would, first of all, just encourage them to reach out to us and become a BLP so that they can get those fills. So that's my first answer, is they should then be a BLP.

There's a separate question if they chose not to become a BLP earlier but now decide they actually do want to be one. You know, you could imagine us opening up a sort of like auction-like venue such that people could in real time go in and out. It would be potentially messy, could be cool. It's not a piece of technology that we I think have built. I don't know that it would be that hard. I don't know how much demand there would be for it. I think it's not a crazy idea to do. But my core answer is a firm in that position should reach out to us ahead of time to be a BLP because that seems to be what they would want according to your hypothetical.

MR. STEIGERWALD: Thanks.

Chris?

MR. PERKINS: Yes. I want to start by saying it pains me, it really pains me, to hear my colleague talking about international -- right? -- the capabilities that international players have that we in the United States do not. I'm on the buy side. I would love to deploy derivatives as they're designed to comprehensively hedge my risk, but those capabilities are simply not available for cryptocurrency markets.

And I'll remind everyone that the realities of 24/7 markets are here. I've been through many default situations. I've been through liquidations. They're brutal. They're arduous. They're timely. Right? And in many cases, they're manual, like it or not.

And so I would encourage us to start thinking about how we can deploy and leverage technology to expedite the process because I love it when bankruptcies or insolvencies happen on the weekend. That's wonderful. But guess what? It doesn't always happen like that. And so we need to focus on ways to innovate and how to automate this process.

And I would love to ask the other CCPs, how can we have comprehensive 24/7 derivatives markets focused on cryptocurrencies? How can they adjust their default management processes to give Americans the same capabilities that are being given to folks overseas that allow us to hedge our risk?

MR. STEIGERWALD: So it seems to me that that's a terribly important question for us to get to. I'm going to just put it on hold for the moment. And we'll see how the conversation develops.

Dave?

MR. OLSEN: Thank you.

I do have a question, but I want to address the ad hoc BLP conversation that just took place. I think if you think about a BLP pre-committing to a risk exposure that they don't know the instrument or the direction and the compensation for that is an advantageous fill, if and when it happens, I think the emergence of the ability to participate as an ad hoc BLP when you have a lot more information about the market might erode the benefit of -- you might not see many participants agree to that risk in peacetime. You could just wait until you have more information and go from there.

But I wanted to ask Sam. We've been focused a lot on the worst-case scenario. I assume that in the worst-case scenario, we've got a lot of dislocation of markets, big price movements. One of the chief problems at the LME, even though there were proposals for years to say you've got to have price bands, you've got to have circuit breakers, those were not implemented and the core meltdown kind of ensued. It's tough to separate the default characteristics from some of the other controls. So I'd be interested in, what are you thinking from a trading halt or circuit-breaker standpoint? What are you thinking about from a concentration-of-large-position standpoint? And how does the liquidation mechanism work if you're in a circuit breaker moment at that time?

MR. BANKMAN-FRIED: Yes. Thank you.

So I guess addressing these, again, not specific to any application but internationally, how do we think about the sort of question of circuit breakers and price bands and things like that. The core sort of philosophy behind it is if markets are trying to go to a price and that is going to be the efficient market clearing price, that needs to happen. And delaying that doesn't help anything. Delaying that just causes people to be unable to hedge their risk in the meantime, but that what you want to prevent are basically illiquid, inefficient market moves, fat fingers, misprints, temporary illiquidity in order books, and other things that could cause an erroneous or sort of unnecessary print way away from what the sort of, like, true market clearing price of the asset really is.

So the way that we manage risk brands internationally is we have, effectively, short timescale price bands that, to give an example, say, things like, well, in any 20-minute period, markets can't move more than 10 percent. And so that prevents any sort of, like, weird short-timescale thing, algorithm gone awry, misprint or just like a sort of like temporary liquidity on one side of the markets, whatever it is, from causing sort of bad basically dumb market data that would potentially trigger liquidations that needn't happen, but that when you look at, like, day timescale, hard price bands, I think those often do more harm than good because at some point, markets really actually just have move. They are trying to move. That is where the efficient new clearing price is. And if you delay for a day, it is just going to be there tomorrow except you will have failed to margin call anyone. In the meantime, you'll fail to give people an ability to hedge.

And you saw this happen with LME, where it's like every day, day after day after day, things are just hard-up limit. No liquidity can occur. There's no trading because the fairer price was actually just higher than what the price bands could allow. So that's on sort of the price-band side. And that also means that the price-band movement scale lines up with the sort of scale on which the risk engine is taking place. So the risk engine isn't prevented for a day from deleveraging positions when it needs to do so and that the price band width is meant to be such that if you have a sufficiently collateralized position, a well-collateralized position, you don't have to worry about a random jerk in markets that sort of would quickly revert from triggering a margin call on the account.

The second thing about concentration of large positions, again, internationally, what we do is we have increasing margin requirements the larger your position is. And so if you have a position of size $10, maybe you will require a 10 percent margin for it, but if you have a position of size $10 billion, you might require 75 percent margin for it. And this scales up algorithmically with the size of the position based on the, effectively, liquidity and volatility of the underlying asset to kind of recognize the fact that this is a higher impact position being put on.

MR. STEIGERWALD: So thank you.

I just want to come to Mariam, but I want Demitri to know that we see you. We'll come to you next. Lots of interest in joining the conversation. Just give us a moment.

Mariam?

MS. RAFI: Thank you. I think one of my challenges in comprehending all of this is that there's a lot being said that isn't actually documented in the rulebook or maybe conflicts with what's in the rulebook, such as the priority order of the secondary backup liquidity providers and in terms of when they're assigned the positions, but as it goes back to FCM participation, which has been cited, that's another construct that isn't currently permitted by the rulebook. And we've been trying to figure out how FCMs could actually participate within the framework of the current CFTC rules. The Rule 1.30 prevents unsecured lending by an FCM because we aren't allowed to take a security interest in positions. And that's my understanding of what is contemplated by FTX because if we were to advance margin, we wouldn't retain a security interest back in that margin. So it would be helpful to get some more specificity in writing within the rulebook about how these mechanisms should operate. And I think it would also clear up a lot of confusion around how the BLP program works.

One further note that we had about the BLP program is just how conflicts of interest will be addressed. For instance, if there are associated parties with the DCO who are actually also backup liquidity providers; whereas, within the CFTC rules between swap dealers and FCMs, there are very clear conflict-of-interest rules, how would that operate in this sort of circumstance.

MR. STEIGERWALD: Thank you.

Demitri?

MR. KAROUSOS: Thank you, Robert.

That last point was actually one of my points just to be clear whether the BLPs are, in fact, independent of the DMDCO in the stylized rules or not because, otherwise, you might imagine conflicts of interest and potentially further exposure to the DMDCO if there is equity overlap between the two entities.

One of the other questions I had on the BLPs, but I don't want to stop there because I have a couple other comments, is just a recognition that, of course, their own collateral may not be sufficient during the move. The assumption is that these are also market participants whose portfolios themselves may be impacted by the activity.

What I'm struck by, though, Robert, was in your startup of this session of understanding how the waterfalls compare between the traditional model and the one that's proposed, they're actually quite very different scenarios in the sense that the defaults that ICE was describing, what's happening in that situation is that some tremendous market volatility may have occurred and someone or maybe a pair of entities actually failed to make payment. Right? So they actually defaulted.

The other scenario is one in which a price moved, which impacts everybody. And now potentially a lot of people don't have time to respond with additional collateral. I appreciate that emails are going out and so on -- but who knows? -- or how much time they have to respond before this auto-liquidation kicks in. So it's a very different scenario between market moves that impact a lot of entities and only one or two may not have the wherewithal to respond given the normal timing of a default margin cycle, of a regular margin cycle, versus market moves impacting everybody and nobody having time to respond to that. So that's a very real cascading effect, but it's also a very different scenario than your largest participant defaulting.

The other issue that was brought up was this question about price bands and also what I guess I consider a bit of a false dichotomy of the 24-hour market requiring a radically different system. I mean, our system today is anywhere from 9 hours to 23 hours in trading. And we still choose, along with the other clearinghouses, to do either one or two margin cycles a day, not continuous margin cycles, partially because of this question on price. Right? Every tick that happens in the pricing of a contract is not a settlement in price. And that's on purpose.

A settlement price is what you then determine after reviewing the trading activity for the day and where markets have ended up and whether anything unusual happened and should certain transactions be excluded from your settlement price consideration based on concerns you may have from a surveillance perspective. Those are very important considerations that happen in setting settlement prices. Why? And we do this twice a day. Because the settlement prices determine margin, and they determine variation margin, the profit and loss. That's on purpose. That's not a bug in the system. That's a feature. We take time to determine settlement prices because they determine those two important things: initial margin and variation margin.

So the idea that every tick, every movement can trigger these kinds of liquidations, we need to pause and think about what that really means. It's a very big departure from practice that is a conscious choice, not one that is somehow because we can't technologically do it. Of course, we could. It's a conscious choice to take time on developing settlement prices.

MR. STEIGERWALD: Thanks, Demitri.

I would turn it back, but, Sam, we've been riding you pretty hard. So why don't you take it easy for a couple of minutes?

I suspect that both sides of this discussion think they are offering the market features, not bugs. So, you know, how do we decide which is the better of the features, under what circumstances, essentially is the problem we're struggling with here. Hilary?

MS. ALLEN: So we can go to someone with no dog in this fight.

So from this description of the model, it seems like a lot of things have to go right for it to work. Right? So, first of all, the models have to have assessed the right amount of margin, and the decision about the number of the guaranty fund has to be accurate.

It's very difficult, as I mentioned earlier, to make risk assessments with regards to crypto because there is no backing for the asset. And it can go to zero very, very quickly. So, for that reason, investors investing in the space are very vulnerable. They have to get their alerts, and they have to get their alerts. You know, they could be sleeping, but they have to get their alerts in time to respond. If they're highly leveraged, in a highly volatile asset, they can go to zero really quickly. And so they can get liquidated really quickly.

When things start getting worse, we've been told that there's a combination of people making decisions and algorithms making decisions. And I'm not clear exactly on the division of responsibility of where the people make the decisions and where the algorithms are automating things. But we're told that people need to do the moral thing, and then the algorithms have to perform as expected. So that means they can't have bugs, which they often have. They can't have vulnerabilities that can be exploited, which they often do. And they have to know how to respond to unexpected problems, which is not the thing that algorithms typically can do because they have no discretion. And so we've taken all of the discretion out of this. We've left very little space for the regulators to intervene, which is usually a failsafe that we have in most markets. Normally, you have a closure, for at least some period, where the regulators can intervene. So we've taken that out as well.

So we have a lot of stuff that needs to go right for this to work. So I think it's important to take a step back from the how and really ask the question of why we should do this. What's the point of this model? And so what I understand is that it has been proposed to allow retail investors to have 24/7 margin trades in the crypto world.

So what are sort of the positives of that? Yes, it's innovative, but, as we've talked about earlier, innovation needs to be responsible. It can't just be innovation. And we don't just leave it at that.

So one argument that you hear is the financial inclusion one, that this will offer investment opportunities to investors who wouldn't otherwise have had them. So I think we need to sort of be a little careful about there, there's a lot of predation in the crypto markets. We've just talked about the conflicts of interest that the backup liquidity providers could have. So, in addition to that, I mean, even separate and apart from people who have conflicts of interest, there are also sophisticated professional traders for whom these highly margined retail traders could be sitting ducks. So I think it's worth thinking about the potential for market manipulation, exploiting them.

So then we hear sometimes that this is useful from an efficiency perspective, but increasing efficiency basically delivers diminishing marginal returns. Anyone familiar with complex systems knows that you need some redundancy, some friction, some lag in there. Otherwise, the system simply becomes too fragile. And if this breaks, it's not just a consequence for the people who have invested in this space.

So what we have is basically potentially mass liquidations being decided by one algorithm. So if that happens, what does that do to prices in other assets? There's tight correlations between crypto assets, and it may not stay combined, even to the crypto ecosystem. If people are trying to meet margin calls, what are they selling off in order to raise cash and selling off fast because they're being liquidated fast? What are they selling off to raise the money to satisfy the margin call? So this isn't necessarily going to stay within its own little universe. There are potentially spillover effects as well.

So we've heard that this is supposed to

increase liquidity. There's a lot of liquidity sloshing around. Liquidity is valuable when things go wrong. Unless this can provide liquidity in those sort of dire circumstances, then it's not really adding, really, to the useful liquidity in the pool.

So I'm seeing the signs that I've gone a little over time. So that's just my plea to think about this in the broader context of why are we doing this, not just how could we do it.

MR. STEIGERWALD: Thank you.

Todd? Oh, go ahead.

And I'll come to you, Christine.

MR. PHILLIPS: Great. Thank you. Two quick things. It was sad before that in this model, some of the margin that investors can put up could be crypto. I'm just wondering if it's possible that your margin could be, say, bitcoin and you could be long bitcoin futures. And if bitcoin futures move against you, your margin could also decrease at the same time. That sounds really problematic. And I just would want to know if the backup liquidity providers understand that this is a possibility. Also, if backup liquidity providers are also market participants here, is it possible that their backup liquidity could also be crypto that could be moving in the wrong direction.

And I just wanted to, finally, add that I agree with Demitri and Hilary that 24/7 trading for liquidation for retail investors seems really problematic. If the market moves against you in one moment, even if it moves back a minute or two minutes later, you could be wiped out. And we really want retail investors to be protected. I don't think retail investors really understand all of the ways the market can move. I don't think retail investors really understand that there are perhaps people who are much more sophisticated and professional trading desks trading against them. And I just don't think that margin crypto is something that we really want our retail investors to be getting into. It just seems very problematic for people that we need to be protecting.

MR. STEIGERWALD: So I understand the thrust of what you're saying, I think. Those are many of the kinds of remarks I might make as an old man. I do try to inherit something by osmosis, being located in

Chicago, of the Chicago school approach. And I try to avoid unnecessary paternalism, especially in a social environment where casinos are coming to downtown Chicago, apparently. So this is a different world.

So I wonder whether we should be deciding for customers who have a chance to receive information and to demonstrate that they seem to know what it means, that they shouldn't take a shot at becoming the next crypto billionaire.

MR. PHILLIPS: If I can just jump in really quickly and say I think this is the reason that Congress created the CFTC and put five commissioners on the Commission to make decisions about what is appropriate for investors. And, I mean, I have my own thoughts here, but I think the commissioners need to take a look at some of these products and decide, are margin bitcoin trades really what we want retail investors to be getting into?

MR. STEIGERWALD: Yes. That's surely an important point, and I'm sure that the Commission in due course will take full account of that issue. It's an important issue.

I have forgotten my friend down here. I'll come back to you, Andrew.

Christine?

MS. PARKER: Yes. We have a lot of thoughts here at Coinbase about retail traders investing in this space and what they should and should not have access to. We have spent a lot of time looking at where retail traders are trading in crypto, where they're trading in derivatives, how they're trading, what they like, what they don't like.

And this is all sort of based on what we see overseas and where the huge concentration of volume and liquidity is. And it's really generated by retail traders. And it's a trading environment that's not available in the U.S. And so here at Coinbase, we very much want to bring that into the U.S. and have it be regulated by the CFTC under the auspices of their regulatory regime.

One point I want to make and then -- sorry, Sam. I am going to ask you a question. I think for a lot of us in this space, the way that the retail traders trade in the crypto derivatives markets is very, very different than what we're used to in the traditional futures and derivatives markets in the U.S. They have different sort of expectations of what that trading experience will be. They've got different expectations of what they want to get out of that trading experience than traditional futures traders in the U.S., both on the institutional side and on the retail side.

So we don't really have a good view here in the U.S. of what a retail trader in the crypto space, all things being equal, the market that they would design. Those seem to be largely overseas markets that we see. And they have the features that Sam has been describing.

So one question to Sam is, when thinking about these retail traders, I know that there's a lot of consternation around the auto-liquidation. And that is something that institutional customers that are using these markets to hedge, from what I'm hearing, it seems to be untenable here in the U.S. But my question is to you, what are your observations about retail traders overseas when they are auto-liquidated? What is their response? Do they stay away do they come back? Is there any information that you can share for us, really focusing on the retail trader in crypto derivatives?

MR. BANKMAN-FRIED: Yes. And maybe sort of combining a few of those together, retail's not a monolithic word. It's being used to refer to a pretty wide variety of people. The vast majority of the volume on FTX internationally comes from users trading at least a hundred thousand dollars per day of volume. So that gives you some sense of what retail might mean in this context. There is a pretty wide gulf between has never thought about a trade before and ECP, that there is a wide, wide range contained within that category. You could also think about tests that were based more on knowledge than on wealth. I think there are things to be said for that as well.

I think I feel pretty compelled to say this, and I say this with the utmost respect. But I actually found something a little bit offensive that was said. I'm going to be pretty blunt. Most of the traders on our platform know a lot more about these contracts than many of the people in this room, including many of the people in this room who are condescendingly talking to them about what they do and don't know and should and shouldn't be offered. Anyway, I just had to get that off my chest a little bit.

And I think it's to some points about consumer choice here. I'm not saying that should be a sort of like be all and end all, but I think there is something to be said for it. And I think that that there's some irony in some of the statements made by people attempting to protect those who know massively more than they do about the topic and who understand these products extremely well. Most of our users do. We have a lot of suitability tests for that that we have been developing. And I interact with a lot of them to get a sense of how they are viewing these markets and thinking about them.

And I think customer protection is extremely important. I think a lot of the features we have I view to be potentially, in many cases, helping to protect customers by avoiding unnecessary margin calls because of the ability to have precise knowledge of where the collateral is and how much it is and the ability to wait until it's absolutely necessary, the non-recourse nature of it, the ability to give financial access to those users, and an equitable playing field. And I think those are things I think are valuable. Not everyone has to agree on that. It's also worth noting -- I don't want to belabor this point too much, but I think that some of the statements made, at least didn't to me, seem to be cognizant of the fact that there are already leveraged cryptocurrency futures available to retail in the United States regulated by the CFTC. I'm just going to, like, make that point and move on but, like, whatever. That is what it is as well. And I acknowledge comments that this might increase that and that that is sort of the world that we have come from. But, certainly from a rules and regulations perspective, that is a thing, which is already live here.

MR. STEIGERWALD: Thank you, Sam.

So let me tell you I'm soaking wet, my back is killing me, my feet hurt. Yes, I'm an old man. What can I tell you?

We're going to take a break shortly. Before we do, Dave, you tell me you have a point that's directly related to this let's keep it short and then take a break.

I see that we have others who want to join the conversation. When we come back from our break, we will go around the room. And Clark will give us some instructions about how that will proceed if I may just give Dave just a moment or two.

MR. OLSEN: Thank you.

Sam touched on half of my point, which is that there are already micro contracts designed for retail engagement that are offering levered bitcoin exposure from exchanges in the U.S.

The other one, though, Todd brought up the auto-liquidation feature for retail. And in my experience, if you go to any equity brokerage firm and you borrow on margin, there's not this relationship-based conversation about when you might send in more money or anything like that. It's just gone out of your account, auto-liquidated, and that's the experience that tens of millions of margin-using retail equity investors are using in the U.S. today.

MR. STEIGERWALD: Thanks, Dave.

MR. HUTCHISON: Okay. I think it's time for a break, and we'll let Robert have his feet back.

I want to give you something to think about as we wrap up the afternoon. I think it's been a long day. And I don't know that we need to go for a long, long time, but I think it's fair that we go around the room again to have everybody have a chance to say something. We'll keep it short. But what I'd like you to think about and perhaps have a challenge before we go is to say, is there a middle ground?

So I think people have expressed their views, and that's been helpful. And I have more about that in my concluding remarks, but I think part of the challenge is we all encounter innovation and perhaps destruction in different ways, but one of the challenges is, can we think of a solution as middle ground? So I'd like to invite people to propose if they can think of one, a middle ground that we might be enlightened by that we haven't thought of ourselves.

So, with that in mind, we'll come back here in -- let me just do this. I've got 3:02, so let's say 3:12. Okay? Great. Thank you.

(Recess taken.)

MR. HUTCHISON: Hopefully, Robert's back has recovered, and his feet have recovered for just the last little bit here. I think we've covered a lot of ground. And my desire would be that we go around the table, everybody has a chance to say one last thing that comes to their mind, again with maybe the two-minute rule, and then with the challenge if they do have something to say or if they don't, a thought about perhaps what a middle ground might look like, if that's possible, just another way for we at the Commission to think about things that maybe we haven't thought of ourselves.

So, with that, I'm going to turn it to Robert. And, just so you know, when we're done, I'm going to turn it to Chair Behnam. And then it will come from him and the commissioners back to me, and we'll close for the day. Okay.

MR. STEIGERWALD: Thank you, Clark.

MR. HUTCHISON: Okay, Robert. Off you go.

MR. STEIGERWALD: I've got it. Last clear chance to fail, right?

Before we go around the room, I'm afraid that if I wait until the very end, I will forget or not have the time to say how very much I've enjoyed this conversation. It gives you an insight into my idea of pleasure, but I expected something far more contentious. And there are important and contentious issues at stake, but you have all participated very kindly and supported the objective that the chairman, Clark, the staff, and I devised when we thought about what we could accomplish today.

I said at the beginning we wouldn't solve problems, we wouldn't answer a lot of questions. We've put a lot of information out in the public domain. We've shared our concerns. We've staked out positions without being obnoxious, I think. And I think it takes some effort to accomplish that. And so I'm very proud of you. And thank you for engaging with me and with us in this process. So that's what I have to say about the day.

I'm going to start with my friend David Murphy here for our last go-around. And apologies to those of you who didn't get to ask your specific questions in turn. Perhaps you can fold your points into the coming remarks.

MR. MURPHY: Thank you. Thank you so much, Robert. And thank you so much to everyone for a great discussion.

So, look, I'm going to have a first go AT answering the where-best question. And I look forward to hearing other answers. Where does this work best in my view? Well, there's a continuum of liquidity in markets from really deep most of the time and quite deep, even in stress, through to by appointment only. This does not work very well in by-appointment-only markets. It works best in deep and liquid markets.

In terms of default management, it works best if the BLPs can, effectively, connect situations where there isn't enough market capacity locally to the risk capital that can take you out of the risk. So the BLPs need to have wide enough pipes. There needs to be big enough BLP capacity. They need to be contractually committed. They need to actually have the collateral there. There needs to be enough of them. They need to be sufficiently uncorrelated in terms of their capacity to perform with the underlying market stress. There needs to be a robust answer to what happens if you get

BLP capacity wrong. Either BLP capacity needs to be plainly enough to deal with really stressful situations or you need some kind of answer to what if we got that wrong. I don't know what that looks like, but I think that's a useful question. So in my view, this looks like something that's interesting in quite liquid markets where you thought hard about the tales to talk to a discussion we've had a lot of times in CCP policy. It's not about medium stress. It's not even about very high stress. It's about extreme but plausible, really genuinely extreme but plausible, circumstances.

So as long as we maintain that standard, which, by the way, should be uniform across ordinary CCPs and new CCPs, we shouldn't hold new CCPs to a higher standard than the traditional one, but we should accept that there are uncertainties which need to be captured. So I am distinguishing here between risk and uncertainty right in the classic 19 sense. So as long as we have the same standard, we have answers to these, I think not insoluble but quite difficult, questions about capacity in extreme circumstances, then maybe there is a way tentatively, slowly, incrementally, experimentally to think that this might be useful.

But yes. I don't think this is a no. I don't think this is a yes. I think this is interesting. Here's the place, it seems for me, at least, most interesting.

Thank you.

MR. STEIGERWALD: Thank you, David.

Cody, do you want to go to Demitri? Okay. Demitri?

MR. KAROUSOS: Great. Thank you, Robert. And I, too, extend my thanks to the Commission and to you for moderating the panel today.

I just would maybe want to summarize my thoughts with this first observation that as we think about these potential proposals, it is really important to understand that time is an important but not sole defining determinant of managing a default situation. It needs to be managed against other considerations, such as the cost of liquidation, potential for contagion, as well as the potential for other curative steps. So I think that's just a point I'd like to leave with the Commission.

There were a couple of other minor points I just wanted to be able to stick in there. There was this question about in terms of numbers that Clark wanted us to talk about and consider before. In the stylized example, there was a proposal or a suggestion that the guaranty fund be sized at 10 percent of the initial margin. That's actually somewhat comparable to the funding, the funded portion of guaranty funds that exists today, but it would highlight that the unfunded portions, the assessed powers, as it was already noted, is anywhere from two to five times larger than that. So there's quite a lot more in the cushion in the traditional waterfall that is being proposed today. And I think, just to give everyone else a chance, I think I'll leave it with that, do appreciate the ability to contribute here and thank everyone else for their contributions.

MR. STEIGERWALD: Thank you very much.

Allison?

MS. LURTON: Thanks, Robert. And thanks to the Commission for giving everyone here a chance to talk about these issues.

At the risk of underestimating how transformative some of what we're discussing today, I guess I'd say I've heard some talk of it being us versus them or new versus old. And I'm not sure I see it entirely that way. Instead, I think the conversation has showed that there's some more wood to chop and basically what regs and laws are important enough related to customer protection, system soundness, whether the default sizing analysis is sufficient, whether those rules are important enough that they need to stay present in whatever model goes forward and if so, in what form. That analysis still needs to be done. So, even though it's been characterized as us versus them, I thought today's conversation really just highlighted those places where we want to do that further analysis.

I think that's all. I'll leave it there. Thanks, Robert.

MR. STEIGERWALD: Thank you. Tom?

MR. SEXTON: Thanks, Robert. And I certainly want to thank the Commission again for inviting us to participate.

I think our view is essentially that I'm not so sure that the congressional framework, regulatory framework, and the CFTC's regulations quite fit this model yet. And what I mean by that is we spent a lot of time talking about clearing today. Our emphasis, again, is on customer protection and retail customer protection. Certainly retail participants, customers, whatever we call them, are going to trade this market. They've been trading margin products for years. It's fundamental, though, that we have protections in place for those participants. And that's everything from how sales solicitation start to how their customer funds are protected to risk disclosures that should be given to -- we didn't spend a lot of time on it today, but what happens in the event of a bankruptcy?

None of us ever want to talk about that. I can tell you that they happen. And when you have member funds from FCMs, you have participant funds, you have this this entity's own funds, how is that divided up in bankruptcy, particularly when you might have a structure that incentivizes customers to avoid auto-liquidation by depositing XX funds in their account?

So those are all issues I think that that need to be further resolved. The framework I think needs to guide those issues, I think, and resolve those issues.

The last issue is very important and that is who regulates this particular entity. If somehow we make this entity also an FCM, not requiring FCM registration, certainly, the DCM might be an SRO. The DCO, I think by order the Commission, might say they're an SRO. But are we really going to let this entity govern and oversee its interfacing with participants who are retail customers.

Today, we have very robust programs at NFA and the CME and other SROs that guide that and examine for that, but in the absence of an independent SRO looking at this, if the Commission is not going to let this entity be its own SRO with regard to the customer interfacing, it falls largely on the Commission, their staff, their resources. And I can tell you we have robust programs every day where we look at our FCMs making sure that funds are at the FCMs. And that falls largely on the regulatory structure, falls on taxpayers, and something that I think that we should also keep in mind.

So, as I said in my in my opening remarks, market structure is always an interesting issue. It fundamentally impacts customers and also the regulatory structure in place.

Thank you.

MR. STEIGERWALD: Thank you.

Ann?

MS. BATTLE: Sure. Thanks.

As mainly a listener in today's discussion, I think one thing that has been very apparent, particularly in the discussion about the default management process, is that there are a lot of key issues that everyone around this table has been discussing for some time. And while today's discussion, I think, focused on applying those issues, transparency, right-sized resources, protection of customers, and non-defaulting clearing members, a lot of the issues that were raised are also raised in the context of what we're calling the existing model. And so if that goes to the question of whether there can be a middle ground, perhaps the answer is yes because there is actually already a lot of common ground with respect to what is important to the market. And perhaps What we have today is not perfect. Perhaps what we're considering is also not perfect but if we look at this principles-based, then I think we need to get to a place. And maybe there is more than one way to get there.

The other thing that I will just say that I think goes towards not a position with respect to DMDCO that we're considering today but where we go from here, I think it was also raised early on that there are some real impediments to intermediate clearing, especially in the United States. There are some extremely valuable protections that that model provides for customers but also impediments, which is evidenced by the increased concentration. And so, again, without expressing an opinion on DMDCO, I think the market coming together in forums like this and considering alternatives that may take some of those impediments off the table is the right thing to do in the coming months, years, however long it takes.

MR. STEIGERWALD: Centuries. Thank you, Ann.

Jennifer?

MS. HAN: Great. Thank you. And, again, thank you for putting together such a great group of diverse representatives from the industry. I think that hearing all of the different views, we raised a lot of really good questions.

I think, coming back to some of where the conversation was going, what's really evident is, certainly for markets, for market participants, I think there is a real interest and hunger for some regulatory certainty for the continued growth of this area. So I think that that is probably a given for and agreed by from everyone around the table.

That being said, again, in hearing some of the various comments, I do agree with Allison. As we think about it, it doesn't seem like a us versus them either. As buy-side representatives, I think, in looking at both the models, again, a lot of support for in continued innovation and competition in this area. And, again, the us versus them, I think our members realize, recognize that FCMs provide a lot of very valuable services.

And so, again, when it comes to competition, looking at the various models, it's possible that our members will be interested in both or how FCMs may also be using the more DMDCO model. So I think all of this works together.

Again, Tom mentioned bankruptcy. No one wants to talk about it. We do want to understand exactly how these rules are going to play out. This current framework, does that support customers that are going to be members of CCPs? Do they need to be tinkered with so that as we are looking at this different model, it works today?

MR. STEIGERWALD: So thank you, Jennifer. It's easy to exclude some of those really difficult issues on a day like today, but, sooner or later, we've got to get around to that. I think there's wide agreement. I know that Bob is taking careful note and looking forward to the day when we can take a deep dive into those issues.

MS. HAN: You always want to look at the bad things when everything's good and we're all friends. Right?

MR. STEIGERWALD: Absolutely. Joe?

MR. CISEWSKI: I just want to return to the how question again. I do think there are some open issues that have been discussed a bit, obviously with respect to risk controls, market-wide risk controls, but also contract-specific risk controls. And that's pretty granular stuff that the staff is going to have to deal with. And it relates directly, I think, to correlated correlated liquidations, which is something we've talked about at length here.

Something we did not talk about much is the application of the cover standard in terms of sizing the guaranty fund. And I think that's a really big and important issue. We probably should return to that, just as a group of commentators, on the set of issues.

And I listened to some of the commentary on retail investors. And I just want to note that Congress made a policy judgment in the statutory framework -- I hate to go back to that, but I will -- about retail access to derivatives markets. And that judgment was that if you're going to trade through the most highly regulated markets with appropriate safeguards, like DCMs, and if you're going to clear through DCOs and comply with the full panoply of regulations under the statute, retail investors should be protected. And these are contract design and market design, market integrity, contract integrity issues. They're not merit-based approval decisions based on what the underlier is to the contract. And so I hope as the Commission and as the staff considers these issues, though, just keep in mind the statutory framework and, for example, Congress also made a decision not to allow retail investors in other types of markets, like SEFs. So that's basically my comment.

MR. STEIGERWALD: I'm simply reminded that Congress also has prohibited trading futures on onions. So you never quite know what you get out of the legislative process.

So okay. I hear you.

Nelson?

MR. NEALE: Great. Thank you, Bob.

Just to start, we and those who I represent come in with an open mind. And we'll exit this session with an open mind as well. But I was struck by one of the comments that Dr. Murphy made at the outset of this conversation. And he said that innovation was typically a product of stress. What I'm not seeing, at least at present, is a stress situation that has demanded a new solution for the way business is currently conducted. We've spent decades, if not beyond, refining our current market and the solution solutions therein. And it's served us well through a myriad of crise.

Certainly representing the agricultural community and that community of physical players who hedge, I don't necessarily see a particular answer or a solution to a problem. Having said that, though, if there are opportunities to ring fence to digital settlement or some of the ideas that Sam had, again, we would enter with an open mind and exit with an open mind as well.

MR. STEIGERWALD: You might exit faster than you realize under certain models. Neil?

MR. CONSTABLE: Yes. Thank you. And thanks for having us here.

I might start at a really high level. Since we're talking about the retail investors Fidelity is quite literally about serving retail investors. That's basically our entire business model. It's about bringing financial products the advice and the education needed to understand how to use those products to our clients. And so, with that in mind, thinking about how to create access to new, innovative financial products, how that can be, how to get the new financial products in to our clients -- "democratization" I guess is the word I was struggling to find just a second ago. This kind of proposal means we want to be very engaged in trying to find ways to get this into the hands of our clients because we do believe with the right amount of education, with the right amount of disclosures, of course, and the right amount of transparency, in this case particularly around things like the BLPs, where the actual capital that needs to be in the system is really sitting, and whether it's there or not, those types of things are very, very critical. And many people have said it more eloquently than I.

But, given all of that, this is something that we very much think is as much how do we make it happen. And, again, it could go much slower than people want it to, but it's about how, not if, in our mind and how do we get our clients access to that.

And I think the middle ground, to take you up on your challenge, isn't really so much about the polar opposite. It's not the do-it-yourself that we often are talking about here or the fully intermediated model of the FCMs, which I agree are very valuable service providers, but opening up this access, direct market access, creates the opportunity for entities -- and I'll put us up there for Fidelity -- to create ways for clients to interact with this market in ways that don't currently exist. Right? Our clients once they are educated, once they understand what's out there and what's possible, how can we, then, facilitate them to engage with this market in a way that is best for them. Right? And I think that's what we would ask to work with the Commission on, is to find out ways to put in place the regulatory framework to achieve that outcome. So I'll leave it at that.

MR. STEIGERWALD: Thank you, Neal.

Michael?

MR. WINNIKE: Thank you very much.

So I think Professor Murphy kind of did lay out very eloquently sort of in the broad strokes -- right? -- how this model could work and where it might work better and where it might be under more strain. And I think moving from kind of the general model we're looking at to really advancing the conversation, the devil is absolutely going to be in the details. Right? So we have pretty well-understood protections that FCMs provide the system today that are being replaced -- right? -- under this new model with additional CCP skin in the game that maybe is dynamic and scales to risk, rather than a cover 3 system, an auto-liquidation model, an initial margin model, proprietary to the exchange, as well as a backstop liquidity provider program. And I think the real rigor put behind getting to actual numbers and stress testing assumption of each of these components is essential and not only that they be assessed with rigor but that there's transparency, ultimately, for and investors who are trying to make informed decisions and manage risk. So what are the liquidity and volatility assumptions -- right? -- that are behind the decisions being made? You know, educated investors will ultimately be better protected in making choices to move forward.

And, then, in terms of other middle ground, I think that FCMs do provide important roles to institutional investors beyond just risk management. And many firms may want to access an exchange through an FCM. I know there's interest in pursuing a potential hybrid model, but there's obviously a lot of work to do in terms of how an FCM would necessarily fit into this model today and what the customer protections would be and would there be a level playing field between direct members as well as intermediate members.

MR. STEIGERWALD: Thank you.

Emma?

MS. RICHARDSON: Thanks, Robert. And thanks to the Commission for providing the opportunity to participate in this healthy debate.

So I think the current ecosystem has evolved over many years. And as we look forward, there should always be room for consideration given to innovation and evolution and further competition. I think it's clear that there's really critical roles and responsibilities on a framework required to ensure sound and stable markets, including appropriate governance, adequate financial resources, transparency, and customer protection. And I think as the market continues to evolve, how and who they are performed by needs further consideration, as does how does the model fit into the current regulatory framework. And we very much look forward to being part of that discussion.

MR. STEIGERWALD: Thank you.

Gerry?

MR. CORCORAN: Thank you. Fascinating day today. Thank you for leading the discussion. I think we learned a lot today.

Sam, thank you and for your graciousness under fire. A lot of things were pointed in your direction. I thought you did a great job. Thank you for that.

I love the spirited debate. I think we learned a lot of things that we say, okay, that can work, but we learned that we have to dig deeper on some of the other matters that I'm not going to repeat here.

I agree with Allison and Tom. From a regulatory viewpoint, how does this fit in? As an FCM, I don't view it as competition. It could be a new modal for an FCM to operate. So I'm not so sure about it. But I do know when this industry runs into trouble when we have an event, it hurts all of us. It hurts the confidence in the marketplace. It causes a lot of disruption. So the new model, we really have to make sure when we get there, that we've covered all our bases and that there's good oversight and we understand the risk related to the model. And thank you so much.

MR. STEIGERWALD: Thanks, Gerry. I just will take a moment to observe you've been around long enough, as I have been, to know that back in the day, the Chicago Board of Trade, which I represented as outside legal counsel for a period of my career, and the Chicago Mercantile Exchange were bitter rivals. You either didn't walk down a certain part of Jackson Boulevard or you didn't walk down a certain part of Franklin Street or then Wacker Drive once upon a time.

But you make an important point. There were occasions when bad things happened and they affected both markets, sometimes because the member involved was a member of both exchanges, but there may have been other circumstances where the exchanges, bitter rivals, though they may have been, pulled together to do the best that could be done for customers and to restore the market confidence and public confidence in these markets. So that's an intangible that I think is important to take account of. So thanks for bringing it up.

Claire?

MS. O'DEA: Yes. So in terms of finding middle ground, I think from a risk management perspective, there's clearly two key themes. One of them we managed to get into a little bit of detail here today. That was the default management principles and the process that's followed. That's clearly key to any DCO model. And the other one that we didn't really get a chance to get into, but it's obviously worth important consideration, is the financial resources. DCO is having robust stress-testing procedures, a robust framework that looks at theoretical scenarios and not just at the history, especially in the asset class, where the history clearly isn't as deep as other asset classes as well. So I want to underscore that as being an important consideration for finding middle ground moving forward.

And thank you for the invitation to participate today.

MR. STEIGERWALD: Thank you.

Thomas?

MR. CHIPPAS: I'll start by saying thank you to the Commission. Discussing and considering structural change to markets is never easy and sometimes not very popular. Taking the time to listen today is very much appreciated.

We support innovation. Eris launched in 2019. We built a platform for spot and derivatives exchanging clearing from the ground up to support this asset class. We are here because we innovate.

Our new parent company, CBOE, launched a bitcoin future back in 2017. ErisX was the first to get approved and launch a CFTC contract for ethe. futures in the U.S. We support innovation.

With that stated, I would say firmly nothing I heard today here has anything to do with technology innovation. Every technology thing you've heard today exists today. Much of it already operates in the market, whether it be in equities and FX futures. All of the things you're hearing about liquidation in real time exist and live and breathe in the market today. It's not a technology question. And I think that means the questions we've heard today all go to market structure. Requests made domestically to change market structure should engender conversations like the ones we have had today. Outcomes from international markets that have experimented and failed or experimented and succeeded will have copious amounts of data that we can look at, outcomes we can tangibly view and see that should all come into any consideration of a market structure change. It should be used in furtherance of our analysis, but it doesn't mean that we should conform to what others have done.

What I take from today is, more than anything, we need a fulsome and deep analysis of the questions at hand and what would happen to our markets if we were to make some of these changes. Others have made eloquent and accurate references to specific rules that might need to be reviewed, but, more than anything, whatever the outcome of that analysis is through whatever form best delivers that outcome, a common rule set with a common starting line for all market participants will be the most fair outcome that hopefully we can arrive at together.

MR. STEIGERWALD: Thank you. Sean?

MR. DOWNEY: Thank you.

My goal here is to be the most succinct. So thank you to everyone. I'll make this brief and to focus on risk management. Those are the comments that I have made today. I don't want to diverge from that. But, effectively, the question that we get asked and the question I think most policymakers and regulators ask is not, did it work. It's, will it work. And if you think about it from a "Did it work?" perspective, then looking at CME, for example, we've covered every event that ever occurred in margin. That doesn't suggest -- and I don't know if my CFTC DCR colleagues will disagree with this -- that margin is the only thing necessary to cover what comes in the future. So I think the question that needs to be asked as we continue to analyze this is, will it work, not did it work in the past.

MR. STEIGERWALD: Thank you.

Bis?

MR. CHATTERJEE: Thank you, Robert.

You know, a lot of the discussions that have been happening today, I'm trying to put in my head into two different buckets, like what is it that we are trying to achieve and support and comes to innovation and application of technology versus how are we doing that to support it. And it seems very clear to me that a lot of the innovative operators, Sam and the peers, have brought to us a marketplace with a new set of participants where there's a need to execute and transact 24/7. And that's something I don't think we can put back in the bottle. It's almost like what has happened to us post the pandemic, where we are used to executing trades in our personal lives, buying toothpaste in the middle of the night, which didn't happen or didn't exist earlier, but what I can see the experience is to support that need or desire to execute trade and support markets that are all over the world that don't follow time zones. Do we need a settlement and clearing mechanism? And is direct clearing the only way to solve for that? And I certainly think, going back to Director Hutchison's comments, is, like, can we support -- and this may be the hybrid option -- can we support a live trading marketplace 24/7 with a model that is not very different than our current FCM model.

And a lot of the terms that I'm hearing in the debate, "maintenance margin," "excess margin, "backup liquidity providers," seem to package very well under what FCMs and liquidity providers currently provide in the market today. So is there a mechanism in which we can support 24/7 trading?

And I certainly see that in the consumer retail marketplace. If I place an order before 10 p.m., it will be delivered tomorrow, but if I place it after 10:01, it will be delivered day after, which means that the clearing settlement mechanism is really not 24/7. It's really the execution mechanism.

So I think if we go back to basics and say what is it that we are really trying to solve for, we try to separate that debate for how we're trying to solve for I think we may get to a path where we start to really focus on the main problem.

MR. STEIGERWALD: Your reference to retail transactions at Amazon or other similar platforms reminds me that as I was desperately searching for my dress shirts over this past weekend, in preparation for this event I found a place where you can order semi-bespoke, carefully measured, tailored men's shirting online, which I did at 3 in the morning that night. So it is a different world that offers many potential advantages. And the question is how to get there with the fewest possible costs, I guess.

Robert?

MR. CREAMER: Well, I've done a fair amount of talking today, but I just want to reiterate thanks to the Commission for allowing me to participate. I echo everyone's sentiment about how engaging this conversation has been. The application to remain nameless, the participants behind what may be here I feel have definitely held their own and really defended themselves, put a lot of time into it. And I think it's a fantastic debate to have.

I go back to the ideas that I put forth before that our industry does need to innovate. And I often get caught up. I'm guilty, as many others are. I think it's common to end up in the trap of kind of thinking what is the best model and that there's one model and a superior model. And it's hard to really refine and develop models without taking a very empirical sort of approach and really focusing on data.

And I know that there's an importance of looking forward and trying to be anticipatory of how the world could move. And I think that's required right now. But I do think that there is an opportunity for us to better understand, certainly for myself, to really apply data really understand what this sort of model as it's been launched in the past, how it operates would be very, very helpful. And I think that I certainly wouldn't want to rush into anything.

But I think that the individuals at this table have built a pretty impressive business. And there's a lot of retail globally that is really attracted to some sort of solution or this sort of solution that is meeting their needs but just want to thank everyone for having me here and hope that over the coming time we can find some solution that works for everyone.

MR. STEIGERWALD: Thank you.

Christine?

MS. PARKER: Yes. I don't know if this is part of Clark's grand plan or your skillful moderation, but I feel like we've somewhat landed in a middle ground because what I'm hearing today is we're contemplating a direct clearing model, which is something that exists that we're familiar with with some role for intermediaries. And, again, there is a sort of a traditional known role for intermediaries. And we're trying to expand our thinking about that while incorporating some features and functions from different marketplaces that we know about and seen and observed and sort of bring it all together into the same place. So that feels kind of like the middle ground. It's not completely new. It's not completely -- it doesn't replicate an existing market structure today. And so I think -- I don't know. I think under any definition, that would be a good middle ground to start from.

Obviously, the devil is in the detail. So we are super excited to sort of dig in and see how this progresses.

And my last point is just thank you to you for putting your body on the line today --

(Laughter.)

MS. PARKER: -- and to the chairman and the commissioners and the staff. This is very hard conversation to facilitate, and it's very welcome. And we just appreciate having a seat at the table.

MR. STEIGERWALD: You're very kind. I thank myself for my service.

(Laughter.)

MR. STEIGERWALD: Sam, we've put you through your paces today. You've held up very nicely and graciously. Thank you for participating in the conversation. And you have your opportunity to wrap up your thoughts.

MR. BANKMAN-FRIED: Yes. Thank you. And thank you to all of the points made by people. There have been a lot of really constructive ones and appreciate that.

Very briefly, I mean, as makes the most sense for digitally settled markets, I thank you for clearing up what that meant, something stronger than financially settled. And I think that this makes the most sense, as people said, for decently liquid marketplaces or at least would otherwise need pretty economically uncompetitive margin requirements in some cases. And I think that there are a lot of good ideas that have been given about transparency we can provide on various figures. We'll go back and sort of workshop things on that.

The last thing I'm going to say is just like -- and I really do mean this -- we really, really do want to engage with everyone here and work with you guys. We have a lot of existing work streams with FCMs about what that integration could and, as importantly, should look like. And we would love you all to be a part of that discussion. We want to make sure that we are designing the right integration and that we're thinking about what makes the most sense for you and for your customers.

Absolutely reach out if you have any interest. We will start those conversations immediately and make sure that you're involved in thinking about how that process could work. To all of the people looking to use the services in any other way, obviously, welcome you. If you want to be a BLP, we'd love to have that discussion as well, love to get as many people working on this as we can.

And the last thing is a huge, huge thanks, above all else, to, I mean, all of the time we know that the Commission has been putting in to this and to all of you for showing up here for this roundtable and the house hearing and common period and everything else.

MR. STEIGERWALD: Thank you, Sam.

Chris, just before you go, I just want to share with the others that we have a special connection. Semper Fi. I did my service from birth to about age 10. That was my military service my father was a China marine.

But it's a reminder of how the world changes. Right? Just a few years ago, before the pandemic, I was walking the streets of Shanghai, where my father was fighting with the nationalist troops before Mao Zedong achieved hegemony in China. So the world can change in remarkable ways.

You made a passionate statement about international competition. We didn't get to that fully today, but that's another important dimension we should talk about. Thanks.

MR. PERKINS: No. Thank you. Robert, thank you for your service and to the Commission. Thank you for your proactive approach and also for your service. It's not an easy job. And thank you for stepping up and providing your leadership across derivatives markets.

Derivatives. I think we would all agree that derivatives are one of the great innovations of finance because they allow individuals to hedge and lay off their risk. And I want to remind everyone again that those markets are changing. The middle ground here is to stay principles-based. Right? And what does that mean? It means mitigating systemic risk. Real-time collateralization makes a lot of sense to me. It means ensuring that we have inclusive markets.

And I also want to throw out another acronym: ESG. I think there's a very good ESG story here that we need to think about.

And, then, finally, competition is a very good thing for markets.

And so I would encourage us. We spent a lot of time today focusing on the defense, trying to poke holes in various models. And that's important. But I also think we should go on the offense. And I think we should, as people who own businesses in this room, think about how we can move forward to deliver comprehensive derivatives markets to allow industry participants, including retail, to lay off the risk.

Thank you.

MR. STEIGERWALD: Thank you.

Dave?

MR. OLSEN: Thanks. Thank you.

We've talked about the middle ground. And I think there may be some contour. Sam, I think you said you're going to workshop some of the ideas that we thought about today. I think there are various ways to do that.

But I want to talk just for a second about why it's important to move these markets forward. I had the privilege of running an FCM in the aftermath of the financial crisis. And there's been a lot of talk, in this room and elsewhere, about the fragility of the FCM model. I actually think that FCMs are on a little firmer footing than the general consensus, but they're on a firmer footing because of the optimization work that had to be done, especially for bank-affiliated FCMs in the advent of new capital rules and the new market reality. And what that's led to is a filter of economies of scale.

So it used to be in an FCM, you had a salesforce. You would try to onboard as many customers as you could. You would charge them rack rates of some kind and give them access to the futures markets and other clearing markets.

What's happened since is the revenue hurdle to take on a new customer, at least as we've heard from FCMs, is around the $250,000 per year of revenue mark. That's the threshold past which a lot of bank-affiliated FCMs won't consider new business.

But there's another dimension, which is how to add a new product as an FCM. And to add a new product, you have to pay typically Sungard a six-figure charge to onboard that new contract spec, let alone a new DCO. And, even if you are comfortable with the merits of the offering, it just might not be in your technology budget that year or the next year to add that market access.

So I think finding a pathway that allows innovation in the U.S. to give access to markets, maybe in a sandbox kind of a way, but to move that model forward is going to be very healthy.

Thanks.

MR. STEIGERWALD: Thanks, Dave. Graham?

MR. HARPER: Yep. Thanks, Robert.

So I want to echo the comments around innovation and competition particularly. One thing that Dave sort of touched on but we haven't talked a lot about is the concentration that's happened to date in the FCM world.

I don't think there's any reason to say that this model is better or worse than the existing model. I think they can exist side by side. And I think customers can choose where they choose to interact.

I think there have been several regulatory and practical issues that need to be worked through that have been raised today. So I appreciate the Commission's continuing to work through that.

Thanks.

MR. STEIGERWALD: Thanks, Graham.

Stephen?

MR. BERGER: Thanks.

I just wanted to close by, as succinctly as I can, just flagging, I think, four questions and considerations as we consider the market-wide costs and benefits, not of any one proposal but of moving to a clearing model that is premised on prefunding of margin and the need, frankly, for maintaining excess collateral at the CCP to guard against the need to avoid liquidation.

So I think the four quick things I'd flag: first, is this model, like, less capital-intensive or more capital-intensive? And from the perspective of a market participant, like, I'm worried that it is more capital-intensive due to the need for prefunding and maintaining excess. And, then, how do you solve for that? I think, again, at a macro level, that I think has the risk of driving more consolidation and concentration to address the attendant capital and efficiencies that could stem from that. So I think we need to sort of at least just think through the implications of that.

Second, again, to the extent that there's like inefficiencies in how you allocate capital when you need to put on positions, like, what are the resiliency impacts of that? Because you're not going to necessarily, like, leave all your working capital at one CCP or another just to have the ability to put on a position at a given point in time. So, like, does it impair market participants' ability to, like, dynamically readjust their portfolios across different products?

The third question I have that I think is just, again, worth debating is, like, are there inefficiencies introduced from, like, the loss of the end of the netting benefits that are associated. Like, if we look at the debate that's been had in the equities markets, there was this discussion about, do we go to real-time gross settlement or we just try to move from T plus 1. And there was sort of an appreciation that, like, there's inefficiencies that will be introduced by moving to real-time gross settlement. You get inefficiencies from end-of-day netting. And that's why we sort of landed for the time being on the move to T plus 1.

And, then, the last point I think. And I want to make sure we don't create incentives for certain market participants, maybe in the institutional space, to, like, avoid the cleared ecosystem and, instead, do instruments, like, on swap in the OTC space because they don't want to deal with, like, disincentives that stem from a specific clearing model. And I think it's all of our interests to have everyone participating in a cleared ecosystem.

So, again, I throw those out there. There's trade-offs with different models. Everyone has sort of acknowledged that. But I think these are at least four issues that I still think probably are worth debating in terms of the costs and benefits of different clearing models.

MR. STEIGERWALD: Thank you. Andrew?

MR. SMITH: All good comments. A lot's been said. I don't want to repeat too much, but I will repeat gratitude to the chair and the commissioners and the staff as well for having us and for engaging the industry. That's a big step forward. It's great to be here. It's great to have this dialogue with folks and I'm learning a lot and be able to contribute a tiny bit but definitely learning a lot as well.

As I said previously, the new model that we discussed today isn't mutually exclusive. We're a big believer that there is a way to maintain customer protections and the robustness that we have in our system that we enjoy today. We don't have to get rid of that.

I have four kids. In a lot of ways, it's like listening to, "Well, I like this about Elliot, but I like that about Benson." And you're kind of going back and forth at the end of the day like you like them all and there's room for all of them in the family. And I think in in some ways, that's the way I kind of feel about these different clearing models. At least for now, there's room for all of them in the family, but we'll see how they grow up.

I think at the end of the day, like, we see this as a proposal not to change how all models work but to create choice, to create the ability for new entrants to come into the model and to use this new clearing model as it actually helps grow the market. I think that's the biggest thing that we see as this being additive to the market.

Of course, with the right customer protections, Allison raised a lot of good questions that were nowhere near my radar, but now she's got the wheels turning. And I think there's a lot of things that need to think about that as well as how to fit this into the existing ruleset that we have or what needs to be changed to accommodate this if this is the path forward for the industry.

And you did a great job moderating.

MR. STEIGERWALD: You're very kind, but I can't help but say amazing things can happen from conversation. Right? You occasionally can learn something.

MR. SMITH: It's just like I tell my kids. Use your words, not your fists.

(Laughter.)

MR. STEIGERWALD: I hear you.

Todd?

MR. PHILLIPS: Great. Well, thank you so

much, Robert, for moderating. Thank you to the Commission for having this and having us here.

I would just say that I think the initial thing that the Commission needs to think about is the need to ensure that there isn't systemic risk in anything that happens. I spent a lot of time here focusing on retail investor protection. I think that retail investor protection is paramount, whether it comes to trading crypto or trading cotton. I recognize that what might be appropriate for institutional investors may not necessarily be appropriate for retail. And I think that as the Commission considers things going forward, it's important to keep that dichotomy in mind.

For retail, I personally believe that it's important to have intermediaries, like brokers or FCMs, involved with best execution requirements, taking care of liquidation decisions, things like that, that have incentives that are aligned with retail. And, then, having entities like the CFTC or SRO policing what those intermediaries do is a great way to ensure aligned incentives.

MR. STEIGERWALD: Thank you. Hilary?

MS. ALLEN: Bringing up the rear again.

So as the Commission considers this proposal, I hope they focus on the systemic risks associated with a move to more automatic liquidation. So what we saw in 2008 was that systemic risks don't disappear when you take them out of an institution. They just move into the markets. And so I think it's really critical to think about as we increase the volume of automated liquidation, what that could do to prices in the market and the consequences of those fire sales. And I think those fire sale externalities should be front and foremost as you consider this proposal, and I hope it will be.

But I thank you for the opportunity to be here and say these things to you. And thank you again for doing such a wonderful job moderating.

MR. STEIGERWALD: You're very kind. Thank you.

How about -- oh, Dennis? Dennis, please appear. I dream of Jeannie? No? No good? Okay.

So I just would like to conclude my part and suggest that we give each other a round of applause. You've done a great job. Thank you.

(Applause.)

CHAIRMAN BEHNAM: Yes. Yep. Thanks, everyone. This is great. I think after two and a half years, we were reminded of the endurance that it takes to stay in this room all day but great discussion.

And I will note that a few months ago, when I was thinking about this event and talking to Clark and talking to Alicia, there was no doubt, I think, collectively, in our mind that Robert was the right guy. So I really just want to take this time to thank all of you but to thank Robert.

(Applause.)

CHAIRMAN BEHNAM: And everything that happened today was a decision point that he wanted to run by us, including the active professorial in the ring, which I think worked out great and kept everyone engaged.

But, again, great to see everyone. Thanks for being here. And I'll give my fellow colleagues an opportunity to say anything, if they'd like, before we pass it back to Clark.

COMMISSIONER JOHNSON: I think I just want to say thank you for all of your thoughts, ideas, your deep and careful interrogation of where we are and maybe where we're headed. There was so much to learn here today that I'm hopeful this is just the beginning of a healthy conversation about some really important issues that each of you will have an important impact on influencing. So thank you all for coming.

COMMISSIONER GOLDSMITH ROMERO: Thank you.

I want to echo the comments of the chairman and Commissioner Johnson, just say how grateful we are to have you so engaged, to have you come in and give your thoughts in a very succinct, which I know is difficult, careful, thoughtful, open way. And I can't tell how incredible that is for us to hear.

I have told many of you I am very open-minded. I leave here today, continue to be open-minded but with a lot more that has been said, that I will be thought-thinking through all of this.

I also just want to say I think this is terrific to have a full five in the Commission for this consideration. I think everyone is in agreement on that. And I'm grateful to have all of the chairman and my fellow commissioners here today. But thank you all.

COMMISSIONER MERSINGER: I just want to say thank you to everyone, especially to Robert. You're masterful in your moderation. So we greatly appreciate that.

I will just say when I came to this job, I didn't think it was going to be easy. So thank you all for reminding me that it's not. And, as someone else who has four kids, I will say that probably one of the greatest gifts anyone can provide is your time. And you have all given it in abundance today, your time and your knowledge. And it's going to help us do our job better. So I greatly appreciate that. So thank you.

MR. HUTCHISON: Okay. It's back to me. So you should know that I don't often have planned remarks. I kind of wing it. And so I'm winging what I'm about to say. I decided that I'd give you a bit of personal reflection that might be helpful in closing the day.

So over my 42 years of working in derivatives and one might say a very misspent youth, therefor, I've come up with maxims. And I shared one with you earlier today. I've always thought that theory and reality need to meet. And sometimes that's ugly, and sometimes it can be elegant. And one of the challenges we have today, as I said before, is having that theory and reality maxim come together.

But another maxim I have is that regulation should be a two-way street. Good regulation involves communication. And I want to step back for a second and just have us reflect on just how unique today is. Over the time that I've spent being on the other side of the fence and now at the side of the fence of the CFTC, there is something unique about what we're doing. And that is we have a relationship in this ecosystem amongst all of us that's unique: FCMs, market participants, exchanges, DCMs, DCOs, fellow regulators, even international regulators, we interact in a way that's different than in other marketplaces. And what we've been able to do today is again demonstrate that interactiveness that is so unique. And I just want to say that it's characterized by notions of approachability, honesty, and due diligence, good listening.

Awkwardness is articulated and tolerated, willingness to take risk, demonstrated expertise in collegiality. We all know one another, and we will meet again. And I think that's a hallmark of how we grow and how we have this creative destruction, is that we have a little bit of destruction, but we come back and we do it again, and we stay collegial.

So, with that, there's another maxim that we should have or it is at the CFTC, that someone like me shouldn't speak on behalf of the Commission, but I'm going to be daring today. I think, speaking on behalf of the Commission, I can assure you that we were informed today. All of us learned something.

Secondly, I think being informed makes us smarter and makes us more sensitive to some of the things that we have to think about.

But, with that said, finally, it can assure you that we will be both deliberate and I think open-minded in some of the decisions that we have to make going forward. So with apologies for breaking a maxim, but I think we all would agree today has been a big success.

So I thank you all, number one; and, number two, wish you safe travels. Thank you.

(Whereupon, at 4:11 p.m., the meeting was adjourned.)