CHANGING MARKET ROLES: THE FTX PROPOSAL AND TRENDS IN NEW CLEARINGHOUSE MODELS

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CONTENTS

WITNESSESES

CHANGING MARKET ROLES: THE FTX PROPOSAL AND TRENDS IN NEW CLEARINGHOUSE MODELS

THURSDAY, MAY 12, 2022

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

The Committee met, pursuant to call, at 10:00 a.m., in Room 1300 of the Longworth House Office Building, Hon. David Scott of Georgia [Chairman of the Committee] presiding.

Members present: Representatives David Scott of Georgia, Costa, McGovern, Adams, Spanberger, Hayes, Brown, Kuster, Maloney, Plaskett, O'Halleran, Carbajal, Khanna, Lawson, Correa, Craig, Harder, Schrier, Thompson, Austin Scott of Georgia, Crawford, DesJarlais, LaMalfa, Davis, Allen, Rouzer, Kelly, Bacon, Johnson, Baird, Cloud, Mann, Miller, Cammack, and Fischbach.

Staff present: Lyron Blum-Evitts, Carlton Bridgeforth, Emily German, Ashley Smith, Paul Balzano, Caleb Crosswhite, Jennifer Tiller, John Konya, and Dana Sandman.

OPENING STATEMENT OF HON. DAVID SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

The CHAIRMAN. Welcome, everyone. The Committee will now come to order. And I want to thank all of you for coming to this important hearing. It is very timely. We see right now what is happening in the markets with cryptocurrency, which brings us to the significance and importance of this timely hearing. So thank you all for coming.

Our hearing is entitled, *Changing Market Roles: The FTX Proposal and Trends in New Clearinghouse Models.* After a brief opening statement, Members will receive testimony from our witnesses today, and then the hearing will open for questions. And I will begin with my opening statement.

Ladies and gentlemen, this is important. I feel personally that this could be a serious threat, particularly to our derivatives market and our cross-border dealings that we have been involved with. As we know, we are dealing with an $822 trillion piece of the world's economy. That is what is on the table here today. And primarily it is to keep our economy, our financial system as the greatest in the world. That is what is at stake at this hearing.

So, I look forward and I am sure we will have a robust and well-informed debate today on the merits and the suitability of the clearing model that is proposed now by FTX. This is why we are

here. And I have said many times before, and I think my reputation speaks for it in my 20 years, and that is this: I have a tremendous respect, love, and admiration for our great financial system. As Chairman of our House Agriculture Committee, as well as senior Member of the House Financial Services Committee, I am particularly well-suited to really deal with this emerging and worrisome threat. Maybe after today you can convince me that it is not a threat, but until then, it seems to be a threat to me, to our clearinghouses and the derivatives market.

Just as the CFTC has recognized the novelty of FTX's proposal to trade margin products under a non-intermediated clearing model and the need for closer public examination, I have heard a number of concerns about the risk, about the threats of their proposed model, and I believe that we must take great caution to preserve and protect our great financial system, the protections and the international standing it affords our market participants.

And that is why I have asked you and I have brought some very distinguished individuals today representing a variety of interests and perspectives here to ensure that we are giving this conversation the appropriate amount of attention and that all the voices on this issue will be heard this day.

Earlier this year, I invited and asked Chairman Behnam of the CFTC to come and testify before our Committee on the state of the CFTC, and I was heartened to hear that the Commission would offer an opportunity for robust public input on this FTX proposal. Any new and untested proposal that has widespread implications for the orderly clearing of derivatives trades must be given due and proper consideration.

Make no mistake, ladies and gentlemen, while the proposed clearing model by FTX is limited in a select few cryptocurrency contracts, we must consider the potential of this model to expand into other derivatives market and be adopted in some form by other clearinghouses.

Further, I am greatly concerned about the potential of this proposal to upset international agreements that the CFTC and this Committee have worked so hard to preserve, which have deemed our current clearing structure and regulations equivalent to EU and UK rules, affording U.S. derivatives clearing organizations the ability to provide clearing services in their markets.

I want to remind you all that awhile back as I was serving as Chairman of the Commodity Exchanges, Energy, and Credit Subcommittee, that I, along with then-Chairman Collin Peterson and Mike Conaway, who was also Chairman, and my friend Austin Scott, we led a fight then to preserve the sanctity of our clearinghouses. There was a threat that the EU wanted to regulate them. We had to step in and stop that. So this is why this is very critical as we look at this. Both sides of the aisle, Democrats and Republicans, we are very concerned about that.

We have the greatest financial system in the world, as I said, and we must ensure that the CFTC's regulatory safeguards governing derivatives markets help us maintain that position in the future. That is why this hearing is important.

And as Chairman of our House Agriculture Committee, I believe it is very important for this Committee to ensure that this remains

the case. And I look forward to our hearing today, and I am really looking forward to hearing our expert panelists help us as we navigate this challenging issue.

[The prepared statement of Mr. David Scott follows:]

PREPARED STATEMENT OF HON. DAVID SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

Good morning to our witnesses and thank you for joining us today. The purpose of today's hearing is to examine the FTX proposal currently before the CFTC for public comment and the potential of such changes to the traditional clearinghouse model and roles of various market participants.

I look forward to what I'm sure will be a robust and well-informed debate today on the merits and suitability of the clearing model proposed by FTX.

As I have said many times before, I have a tremendous love and admiration for our great financial system.

And as Chairman of our House Agriculture Committee, as well as a senior Member of the House Financial Services Committee, I am particularly interested in new and novel developments involving the CFTC and our financial system.

Just as the CFTC has recognized the novelty of FTX's proposal to trade margined products under a non-intermediated clearing model and the need for closer public examination, I have heard a number of concerns about the risks of their proposed model and I believe that we must take great caution to preserve and protect our financial system, the protections, and the international standing it affords our market participants. That is why I have brought people representing a variety of interests and perspectives here together today to ensure that we are giving this conversation the appropriate amount of attention and that all of the voices are being heard.

Earlier this year, Chairman Behnam was invited to testify before this Committee on the state of the CFTC and I was heartened to hear that the Commission would offer the opportunity for robust public input on the FTX proposal. Any new and untested proposal that has widespread implications for the orderly clearing of derivatives trades must be given due and proper consideration.

Make no mistake—while the proposed clearing model by FTX is limited to a select few cryptocurrency contracts, we must consider the potential of this model to expand into other derivatives markets and adopted in some form by other clearinghouses.

Furthermore, I am gravely concerned about the potential of this proposal to upset international agreements that the CFTC and this Committee have worked so hard to preserve which have deemed our current clearing structure and regulations equivalent to EU and UK rules, affording U.S. derivatives clearing organizations the ability to provide clearing services in their markets.

By holding today's hearing, we are giving yet another public platform to shine a light on these novel market structures and help to ensure that the potential implications—good or bad—of such proposals are thoroughly considered before any changes are made.

We have the greatest financial system in the world, and we must ensure that the CFTC's regulatory safeguards governing derivatives markets help us maintain that position into the future.

As Chairman of our House Agriculture Committee, I believe it is the role of this Committee to ensure this remains the case and I look forward to hearing everyone's perspectives here today.

I will now turn it over to the distinguished Ranking Member, the gentleman from Pennsylvania, Mr. Thompson, for any opening remarks he would like to give.

The CHAIRMAN. With that, now I will turn to our distinguished Ranking Member, my friend from Pennsylvania, Ranking Member Thompson, for his opening statement.

OPENING STATEMENT OF HON. GLENN THOMPSON, A REPRESENTATIVE IN CONGRESS FROM PENNSYLVANIA

Mr. THOMPSON. Well, thank you, Mr. Chairman. I want to acknowledge your efforts to work collaboratively with me on this hearing. I especially appreciate that today's table is a bipartisan

witness table, and it will be a better hearing because of our work together, so thank you very much.

In 1974 when the CFTC was first established, electronic trading was so novel that Congress directed the Commodity Futures Trading Commission in statute to determine the feasibility of trading by computer. Today, of course, the idea of computers would not have taken over markets seems almost laughable. Our markets exist almost entirely on computers. There are virtually no open outcry pits left anywhere in the world, but this transition didn't happen overnight. Certainly, many people are responsible for the transition to electronic markets. However, we have to give credit to both CME and ICE for their pioneering work in the 1990s and the 2000s to bring the futures market into the digital age.

The benefits of this technology have been enormous. Today, computers and capital work together to deepen liquidity, narrow spreads, reduce transaction times, and create new hedging opportunities. Electronic trading provides greater access and availability to all market participants. But in the eyes of some, it also has some drawbacks. Certainly, the men and women put out of work might have mixed feelings. And to this day a few market participants continue to believe that electronic markets are more volatile and less reliable than human-intermediated markets.

Now, since moving markets to the screen, technology underpinning our markets has not stood still. Just last year, CME Group announced it is undertaking the next step in electronic markets by migrating to the cloud. And like the move to electronic trading, their proposal could be both beneficial and disruptive to the markets. Cloud-based infrastructure could be another revolution in leveling the playing field for market access, reducing cost for participants while also upending how existing participants interact with exchanges.

Now, today, we are going to hear about another proposed market innovation, a recent proposal from FTX to expand their current non-intermediated clearinghouse to offer margin products. This proposal has generated excitement, concern, hope, and confusion. It sounds like Washington actually. You get all four of those emotions going at once, that is the kind of world we work and live in sometimes. But we acknowledge that. And this proposal has generated all of those emotions across the derivatives and the crypto industries. And as I have said in the past, I believe this proposal is worthy of balanced consideration.

Now, I know the Commission is working diligently to consider it. A few weeks ago Chairman Behnam sat before us in this very room—thank you for that hearing, that opportunity—and explained his process. Specifically, he committed to us that the Commission will consider, as they do every proposal, the proposal publicly according to the core principles for a derivatives clearing organization. Chairman Behnam also committed to a comment period, which closed yesterday, and to hold a public roundtable, which will take place at the end of the month.

Now, I don't believe this Committee should duplicate that work. We have empowered the CFTC, the Commission and the Commissioners, to ensure stakeholders and the public will have a seat at the table, and now we must trust the process. Where the Commis-

sion fails to consider the proposal appropriately, deviates from the law, or unnecessarily limits debate, we should not hesitate to weigh in. But that has not happened.

For me, the most interesting part of today's testimony will be a broader conversation about changing market structure and the ever-evolving impact of technology on markets, sometimes at a crawl and sometimes in leaps and bounds. Technological innovation is revolutionizing the world around us.

Now, I hope we can discuss how technology can continue to empower market participants by reducing costs, improving access, and protecting our financial markets by increasing transparency and reducing systemic risk. Now, we have the largest, most liquid, most dynamic derivatives markets in the world because the potential for innovation is baked into our regulatory structure. In the end, it is the market participants and ultimately the American people who will benefit from the quality of these markets. Protecting and promoting the health of our markets is what should drive each of our regulatory decisions.

And I want to say a warm welcome to all of our witnesses and I thank all of them for their diligence in preparing for today. And I look forward to your testimony. And with that, Mr. Chairman, I yield back.

The CHAIRMAN. Thank you, Ranking Member.

The chair would request that our other Members submit their opening statements for the record so our witnesses may begin their testimony and to ensure that we have ample time for everyone to ask questions and our witnesses time to give good thorough answers.

Now it is my pleasure to introduce our distinguished panel. Our first witness today is Mr. Terry Duffy. Mr. Duffy is the Chairman and Chief Executive Officer of the CME Group. Our next witness today is Mr. Sam Bankman-Fried, who is the Chief Executive Officer and Founder of the FTX U.S. Derivatives. And our third witness today is Mr. Walt Lukken, the President and Chief Executive Officer of the Futures Industry Association. And our fourth witness today is Mr. Christopher Edmonds, the Chief Development Officer of the Intercontinental Exchange. And our fifth and final witness today is Mr. Christopher Perkins, the President of CoinFund Management, LLC. Welcome to all of you. Thank you for coming.

Now we will get right to the testimonies. Mr. Duffy, you will be first. Please begin when you are ready.

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

Mr. DUFFY. Well, thank you, Mr. Chairman and Ranking Member Thompson, for holding this hearing today. It is a great pleasure to be back in this body. I haven't been here in several years, and it is wonderful to be in person with everyone again. And I hope you and your families are all healthy and doing well.

As the Chairman said, my name is Terry Duffy. I am the Chairman and Chief Executive Officer of CME Group, the world's leading derivatives marketplace, offering futures and options, contracts across every investable asset class. Risk management and innovation are hallmarks of CME Group and have always been funda-

mental to centrally cleared derivatives markets in the United States.

Under false claims of innovation that are little more than cost-cutting measures, FTX is proposing a risk-management light clearing regime that would inject significant systemic risk into the U.S. financial system. The FTX model would come at the expense of proven risk mitigation practices, market integrity, and ultimately financial stability. In fact, the FTX proposal would significantly increase market risk by potentially removing up to $170 billion of loss-absorbing capital from the cleared derivatives market, eliminating standard credit, due diligence practices, and perhaps most importantly destroying risk management incentives by eliminating stakeholder capital requirements and mutualized risk.

The FTX proposal to instantaneously auto-liquidate any customer who is under margin at any given moment in time would jeopardize both market integrity and financial stability. Auto-liquidation can exacerbate volatility and create dramatic price moves during times of turbulence. In an already stressed market, these automated liquidations could lead to a repeated pattern of price declines followed by additional liquidations. This has the potential to build losses on top of losses and destabilize markets for all participants.

Furthermore, FTX's market maker and backstop liquidity provider plans imported from its offshore practices in low regulatory jurisdictions raises serious questions about the potential conflicts of interest embedded in the FTX model.

Finally, the FTX proposal eliminates critical customer protections. Under their model, market participants will lose important customer segregation protections and could be exposed to increased collateral investment losses. In non-defaulting customer positions—let me repeat that—non-defaulting customer positions could be terminated or collateral liquidated at the discretion of first line of defense against losses for any reason under any market condition. By contrast, U.S. clearinghouses like CME Clearing have billions of dollars of resources available in the default waterfall that must be used to cover losses prior to any possibility of a position tear-up.

The FTX proposal is not innovation. It is an evasion of best practices and prudent risk management. And while the Commodity Exchange Act may promote innovation, it does not promote innovation for the sake of innovation alone. In order to approve the FTX proposal, the CFTC must determine that it complies with the core principles and is in the public's best interest. We do not see how the Commission could credibly make this finding or legally limit its approval even on a test basis to crypto only. If the Commission makes its finding for crypto markets, they will not be able to keep FTX or others from expanding into other asset classes. To suggest otherwise would put all market participants at an extreme disadvantage. Market structure changes would affect the entire industry, not just FTX. And all platforms must be able to participate under the same rules at the same time. Accordingly, the CFTC should either reject the FTX proposal or commence a formal rulemaking to allow a broader public discussion of appropriate risk management standards.

In conclusion, let me make one final point. As you know better than anyone, Chairman Scott, you and this Committee have spent enormous time—you mentioned it in your opening remarks—and energy defending the CFTC's standards and regulatory oversight as equal to or better than any other jurisdiction in the world. If in fact the CFTC decides to approve a rushed and ill-conceived proposal, we believe the hard-won cross-border equivalence agreement that you referred to will come under question.

Just a few weeks ago, sir, a senior European Central Bank official warned, and I quote, "The crypto market is now larger than the subprime mortgage market was when it triggered the global financial crisis." To put this into context, the subprime mortgage market was at $1.8 trillion in 2008. Today, the cryptocurrency value is north of $1.8 trillion and growing. The stakes are extremely high.

Exempting FTX from well-established U.S. clearing rules could undermine confidence in our regulatory regime. Therefore, I applaud you, Mr. Chairman and this Committee, for holding this hearing today. Your oversight of the derivatives marketplace structure is critical to ensuring sound public policy. Mr. Chairman, Ranking Member, and Members of the Committee, I thank you. I look forward to answering your questions.

[The prepared statement of Mr. Duffy follows:]

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

Chairman Scott, Ranking Member Thompson, and Members of the Committee, I am Terry Duffy, Chairman and CEO of CME Group Inc. ("CME"), the world's leading and most diverse derivatives marketplace. We offer the widest range of global benchmark products across all major asset classes and provide clearing services for our customers around the globe through our clearinghouse, CME Clearing.

Thank you for the opportunity to testify today regarding proposed revisions to the derivatives clearing organization (DCO) registration order of LedgerX, LLC d.b.a. FTX US Derivatives ("FTX") to offer central clearing of margined products directly to retail customers (the "FTX Request" or "FTX Proposal"). This proposal, if approved by the Commodity Futures Trading Commission ("CFTC"), would represent a dramatic change to the market structure of the derivatives industry and would set a precedent with wide-ranging negative implications for the safety and soundness of U.S. financial markets.

FTX's Proposal is glaringly deficient and poses significant risk to market stability and market participants. We believe the implications of this application far exceed the parameters of the typical matters that lay before the CFTC, and we appreciate your interest in considering the numerous pitfalls inherent in the FTX Request. It is imperative that the committee of jurisdiction provides oversight and consideration of this matter. It is of fundamental importance to the effectiveness of the global commodity markets, and I hope that you will give the FTX Request the fullest measure of scrutiny because, as proposed, it promises to usher in a derivatives clearing model rife with risk management deficiencies, market integrity issues, cross border implications, and customer protection issues.

I. Risk Management Deficiencies in the FTX Request

FTX's proposal does not instill the necessary risk management incentives for its participants—it is risk management "light." Under this regime, FTX will not impose any capital requirements on its participants and does not intend to maintain mutualizable participant resources (*i.e.,* loss-sharing among non-defaulting participants) to address participant defaults.

More broadly, FTX's proposal is insufficient, as its direct model eliminates potentially billions of dollars of loss-absorbing resources that are currently a feature of the derivative markets.

A. Elimination of Capital Requirements

FTX's proposed risk management regime has no capital requirements for participants. Today, DCOs maintain strict minimum financial requirements and are backstopped by the FCMs' own capital. FCMs, in the aggregate, maintain over $173 billion in adjusted net capital and other resources.[1] There is no indication that FTX would hold capital or residual interest comparable to FCM levels today.

B. Lack of Counterparty Due Diligence

Counterparty due diligence is a linchpin of the modern financial system and a key part of current DCOs' risk management practices, used to confirm that clearing members are well-placed to meet the obligations that arise from their risk-taking. FTX would not be the first party, novice or otherwise, to suggest that financial modeling and algorithm design could eliminate the need for best practices in risk management; however, the eventual fate of Long-term Capital Management[2] and bespoke financially engineered products, such as mortgage-backed securities and collateralized debt obligations, suggest that it would be folly to unwind core risk management practices based on the assurance that "this time it's different."

C. Insufficient Financial Resources for Managing Participant Defaults

Unsurprisingly given the proposed lack of capital requirements for participants, under FTX's proposal, FTX will have insufficient financial resources to address default events (*i.e.,* tail risk). Additionally, by proposing to self-fund its guaranty fund, FTX eliminates a core incentive for participants to effectively manage their risks. In contrast, current DCOs require clearing members to fund a mutualized pool of resources with knowledge of the risks they assume (in addition to a DCO's own contribution known as, "skin-in-the-game"), so that as risk-taking increases, resources increase. This provides incentives to clearing members to manage their own and their customers' risk in business-as-usual and stressed markets, while also incentivizing them to actively participate in the default management process. Removing the potential for loss mutualization, as FTX proposes, eliminates these risk management incentives.

D. Failure to Use Appropriate Stress Scenarios for Sizing Financial Resources

FTX also does not appear to fully understand the concept of "***extreme but plausible market conditions***" (emphasis ***added***)[3] for the purposes of guaranty fund sizing. Surprisingly, FTX appears to suggest that increasing the assumed number of participants defaulting meets this requirement,[4] and no other information is provided in the FTX Request on its stress testing methodology. DCOs today size their financial resources using both historical data and hypothetical scenarios that are designed to capture tail risk.[5] Failing to do this ignores tail risk and leads to inadequate resources to cover default losses, particularly during stressed markets.

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[1] CFTC, Financial Data for FCMs (Feb. 2022) (noting, figure includes adjusted net capital and residual interest for the customer segregated account), available at *https://www.cftc.gov/sites/default/files/2022-04/01-%20FCM%20Webpage%20Update%20-%20February%202022.pdf*.

[2] The near-failure of Long-Term Capital Management ("LTCM") and the hedge fund it operated ("LTCM Fund") in the summer and early fall of 1998 vividly highlighted the need for using sound risk management practices in the financial markets. LTCM engaged in highly leveraged trading for the LTCM Fund based on the general strategy that liquidity, credit and volatility spreads would narrow, in a range of financial instruments including derivatives. LTCM relied on risk management models that underestimated the risk that the spreads would widen as they did. By the end of August 1998, the capital held by the LTCM Fund had declined over 50% from the start of the year. The President's Working Group on Financial Markets issued a report in April 1999 identifying the risk management and other failures at LTCM and its counterparties and provided a number of recommendations in the report to enhance risk management practices, including counterparty due diligence. *See* "Hedge Funds, Leverage, and the Lessons of Long-Term Capital Management Report of The President's Working Group on Financial Markets" (April 1999).

[3] CFTC Regulation 39.11(a)(1).

[4] FTX Request, Letter from Julie L. Schoening, Ph.D., Chief Risk Officer, FTX US Derivatives, to Clark Hutchinson, Dir., Div. of Clearing & Risk, at pg. 3 (Feb. 8, 2022) (Financial Resource Requirements under Core Principle B and CFTC Regulation 39.11(a)(1) in the Absence of Clearing Futures Commission Merchants ("FCMs")) (noting, "[i]ncreasing the number of the largest participants that are assumed to default at the same time makes a scenario more extreme but naturally decreases the plausibility of such a scenario."), available at *https://www.cftc.gov/media/7006/ledgerx_dba_ftx_ltr_fin_resource_req2-8-22/download*.

[5] CFTC Regulation 39.11(c)(1) (noting, CFTC Regulation 39.36(a) establishes additional requirements with respect to a systemically important and electing subpart C DCO's stress testing methodology (*e.g.,* scenarios considered)).

II. Market Integrity Jeopardized

The FTX Request, as designed, would have a significant negative impact on market integrity. FTX assumes that auto-liquidation is a panacea that eliminates the need for other risk management practices. FTX is arguing in favor of eliminating best practices in risk management represented by risk-based capital and other participation requirements, counterparty credit due diligence, and participant funded mutualizable resources for managing defaults, among others. This collectively eliminates core incentives for participants to effectively manage their risk-taking.

Contrary to FTX's assertions, auto-liquidation is not a new concept and has not been broadly implemented due to the panoply of problems it creates, particularly in stressed markets. Auto-liquidation may, at first glance, appear to be novel but it has been evaluated and generally dismissed as a market-wide risk management tool for three primary reasons: (1) it risks creating a vicious pro-cyclical cycle of cascading liquidations; (2) it incentivizes market abuse and bad behavior, including but not limited to, market participants triggering and trading against liquidation orders and market participants anticipating and front-running the liquidation orders, exacerbating market volatility and increasing liquidation cost; and (3) at least in the case of the FTX implementation, it closes out participant positions without the ability to cure the collateral shortfall.

Moreover, FTX appears to realize that its proposed auto-liquidation tool and use of backstop liquidity providers may not always be successful. However, rather than proposing additional resources or risk management incentives to address an unsuccessful liquidation, FTX's proposed solution is to tear up positions in a manner similar to what was recently observed in the nickel derivatives market in the UK.

A. Cascading Liquidations

FTX's proposed use of an auto-liquidation algorithm across its entire customerbase could cause widespread market disfunction and price distortions. Often referred to as a "contagion effect" in mass liquidations, the market impact associated with the liquidation of one account can cause the liquidation of other accounts, thus leading to a dysfunctional cycle of cascading account liquidations. Auto-liquidation has historically shown a propensity to exacerbate price moves during volatile markets, leading to cascading liquidations and further market destabilization.[6]

B. Market Abuse

FTX's proposed use of an auto-liquidation algorithm across its entire customerbase also sets the table for significant abusive practices. FTX's seemingly predictable auto-liquidation algorithm (*i.e.,* X-percent of account liquidated in Y-second intervals) paves the way for predatory order anticipation strategies to front-run or trade ahead of the liquidation, which would have the effect of removing market liquidity and thus impairing the ability of the auto-liquidation algorithm to offset positions without significant price concession. It is also conceivable that sophisticated market participants could earn significant profits triggering and trading against liquidations, particularly during times of low liquidity.

C. Broken Hedges

FTX has expressed its ambition to apply its model to other asset classes. Auto-liquidations could also have knock-on effects on the real economy, including exacerbation of price increases already being observed due to inflationary pressures, if it were utilized in core commodity markets such as agricultural, energy, and metals, as well as other markets. Commodity producers and purchasers often use derivatives markets to hedge their business risks over short-term and long-term time horizons. This has been reflected by the hedge accounting rules which, under certain conditions, allow these participants to benefit from preferential accounting treatment due to the reduced business risk associated with their well-hedged exposures.

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[6] *See* CME Group, Notice of Disciplinary Action, COMEX–15–0303–BC (Sept. 2020) (sanctioning firm that utilized functionality designed to automatically liquidate under-margined customer accounts that caused extreme price movements, liquidity and trade volume aberrations and velocity logic events on multiple occasions), available at *https://www.cmegroup.com/notices/disciplinary/2020/09/COMEX-15-0303-BC-INTERACTIVE-BROKERS-LLC.html*. *See also* CME Group, Notice of Disciplinary Action CBOT–15–0158–BC (Mar. 2017) (sanctioning firm that utilized an auto-liquidation algorithm to liquidate under-margined client accounts causing significant market disruptions on several dates), available at *https://www.cmegroup.com/notices/disciplinary/2017/03/CBOT-15-0158-BC-SAXO-BANK-AS.html*.

FTX propagates a model where participants can be liquidated without notice,[7] in the middle of the night, and on weekends and holidays, during illiquid market conditions and at discounted prices.

Auto-liquidation would inject uncertainty in the application of hedge accounting programs at firms because the risk of sudden broken hedges. Such a break could occur during a market event, or in the case of FTX even without significant market moves, leading to realized and unrealized gains impacting firms' accounting statements at a time when balance sheet stability is more important than ever.

D. Partial Tear-Ups as a Front-Line Risk Management Tool

Under FTX's proposal, innocent, non-defaulting participants may be subject to liquidation if FTX employs the partial tear-up of positions as a front-line risk management tool to manage a default. FTX has the discretion to implement partial tear-up prior to any attempt at liquidation (auto-liquidation or otherwise) or the use of FTX's guaranty fund.[8] Thus, even a participant who deposited significant amounts of collateral in excess of their margin requirement to avoid auto-liquidation may still be subject to having their positions torn-up through no fault of their own.

In other words, FTX has the power to implement a tear-up-similar to recent events in the nickel derivatives markets—in business-as-usual market conditions prior to the implementation of any risk management tools or utilization of any loss-absorbing resources, including those of FTX. This also inherently creates a conflict of interest for FTX, as it could elect to use partial tear-ups in order to avoid losses to its entirely self-funded guaranty fund.

E. Conflicts of Interest Need to be Disclosed and Explained

FTX heralds its use of backstop liquidity providers as a prudent liquidity risk management tool that can be utilized where auto-liquidation fails. FTX does not identify these potential backstop liquidity providers. We can only speculate on who they are and their relationship to FTX. It is worth noting that Alameda Research, which has common ownership with FTX and was originally founded to exploit cross-border crypto arbitrage opportunities, plays a significant role in managing liquidations and providing liquidity in offshore and cash crypto markets. It is important for market stakeholders and the CFTC to investigate these unknowns further in light of the clear conflicts of interest of such a structure.

III. Cross-Border Implications of the FTX Request

Permitting the FTX Request to move forward in its current form could undermine the CFTC's position as a leader in derivatives regulation. The CFTC has long-been at the forefront of promoting best practices in risk management, including through its role in global standard-setting organizations[9] and the adoption of risk management innovations that have been exported across the globe. The CFTC's potential abdication of this leadership role in the supervision and regulation of U.S. DCOs will have real world consequences for U.S. and global derivatives markets. The CFTC's leadership has helped to ensure that U.S. DCOs can effectively offer their risk management services to participants on a global basis.

IV. Customer Protection Issues in the FTX Request

FTX's proposal eliminates customer protections for all of FTX's participants in margined and fully collateralized products. FTX's proposal discards these carefully crafted customer protections developed by the CFTC over decades without consideration of the rationale underpinning their design.[10] Most notably, the FTX proposal would eliminate regulatory standards designed to protect customer funds. An FCM is subject to stringent customer funds segregation requirements under the CEA and CFTC regulations with respect to holding funds it receives from public customers to guarantee, secure or margin their cleared futures and other derivatives transactions. The predominantly retail market participants that FTX plans to solicit to engage in leveraged futures trading as direct clearing members are the very type of market participants the segregation requirements are intended to protect, and they have a very different profile from institutional market participants that decide for business and other reasons to self-clear their leveraged trades as direct clearing members. However, because retail participants would self-clear their leveraged transactions directly on FTX, the CEA's customer funds segregation regime would

[7] *See* proposed FTX Rules 7.1.C.5 and 7.2.D.2.
[8] *See* FTX Rulebook at proposed FTX Rule 14.3.
[9] The CFTC is a member of IOSCO.
[10] Under FTX's proposal, fully collateralized participants (who lose these customer protections) would be inordinately penalized due to the legislative mandate requiring them to share losses on a *pro rata* basis with margined participants.

not apply. If the segregation requirements do not apply, FTX's retail clearing members will lose the following protections, among others:

- FTX would not be prohibited from using a futures clearing member's funds for any purpose other than to guarantee, margin or secure such person's transactions.
- FTX would not have to hold funds of futures clearing members as customer funds subject to the statutory trust created by CEA Section 4d(b). The custodians that FTX uses likewise would not hold those funds subject to statutory trust.
- FTX would not have to open accounts with custodians to hold futures clearing members' funds under account names identifying the accounts as holding property belonging to its customers, nor would FTX have to obtain acknowledgement letters from such custodians as would be required under CFTC Regulation 1.20.
- FTX would not have to use depositories that meet the requirements of CFTC Regulation 1.49 to hold clearing members' funds.
- FTX would not be required to bear sole responsibility for any loss in its investment of clearing members' funds, as it would under CFTC Regulation 1.29 if they were protected segregated funds of an FCM's customers.

Under FTX's proposal, the failure of FTX to provide these protections would not be disclosed to the customers; in fact, new entrants to the futures markets would have no knowledge that these protections exist and that these protections would normally be provided when trading on a futures exchange through the intermediation of FCMs.

V. The FTX Request is Contrary to and Inconsistent with the Commodity Exchange Act

The FTX Request blurs the existing distinctions between an FCM, a DCO, and a DCM and the clear set of rules and principles applicable to each registrant. If approved by the Commission, FTX will be allowed to engage in otherwise-regulated FCM activities without the same oversight and supervision that applies to FCMs. Not only is this counter to the foundational elements of the CEA, but FTX's proposal, if approved, will create a regulatory gap which will, in fact, lower regulatory standards and protections provided to retail participants.

A. The FTX Proposal Does Not Represent Responsible Innovation Serving the Public Interest

CEA Section 3(b) does not promote innovation in financial markets for the sake of innovation alone; it promotes ***responsible*** innovation that ***serves the public interests described in Section 3(a),*** namely, innovation that would foster fair, liquid and financially secure markets that businesses rely upon for risk management and price discovery. FTX's Proposal, if allowed and implemented, will harm market integrity, erode customer protections, and inject risk and financial instability into the markets.

Moreover, FTX's purported innovations are neither innovative nor responsible. What, precisely, is innovative or responsible about shifting FCM activities into its DCM and DCO entity to circumvent FCM registration and regulation? This seems more evasive than innovative.

B. The FTX Proposal Would Degrade Existing Regulatory Standards

The CEA's core principles governing a DCO under the CEA—and those of a DCM as well—are no substitute for the myriad of requirements that apply to FCMs under the CEA framework. While DCOs and DCMs are held to rigorous, comprehensive standards, these standards are designed to work in conjunction with the panoply of requirements applicable to FCMs. The CEA framework does not contemplate that a DCO or DCM would combine solicitation of customers and their funds to open accounts for leveraged trading with the market operations or clearing functions that they perform.[11]

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[11] Putting aside the fully-collateralized disintermediated DCMs that the Commission has allowed, DCMs—those that provide for market access through the intermediation of FCMs—promote the contracts they list for trading generally to prospective market participants. They do not engage one-on-one with prospective customers to solicit them to open trading accounts, assist them with the customer on-boarding process, conduct "know-your-customers" reviews, or otherwise have ongoing day-to-day engagement with customers. Those functions are performed by the FCMs and are material components of the important checks and balances that FCMs provide.

In addition, FTX's proposal would result in limiting the recourse available to retail customers if FTX were to engage in fraudulent or abusive business conduct practices with its customers or mishandle customers' funds. The National Futures Association's ("NFA") arbitration and mediation would be unavailable for resolving customer disputes because FTX would not be an FCM member of NFA, nor could customers file a complaint against FTX using NFA's customer complaint process, for the same reason.

Conclusion

Although the CEA does feature innovation as a statutory goal, the Act does not promote innovation for the sake of innovation alone. This means any purported "innovation" which is found to increase risk unacceptably or fails to protect customers, would be in contravention of the purpose of the law.

The FTX Request does not meet this test. FTX proposes to implement a "risk management light" clearing regime. In fact, the purported "innovations" of FTX's proposal are best understood as simple cost-cutting measures. And these cost cutting measures would come at the expense of risk management best practices, market integrity, customer safety, and ultimately, financial stability. It should not be allowed to go forward as proposed. The CFTC should either reject the FTX proposal or commence a formal rulemaking to allow a broader public discussion of appropriate risk management standards.

Thank you. I look forward to answering your questions.

The CHAIRMAN. Thank you. Mr. Bankman-Fried, please begin when you are ready.

STATEMENT OF SAMUEL "SAM" BANKMAN-FRIED, CO-FOUNDER AND CHIEF EXECUTIVE OFFICER, LEDGERX LLC D/B/A FTX US DERIVATIVES, CHICAGO, IL

Mr. BANKMAN-FRIED. Chairman Scott, Ranking Member Thompson, Members of the Committee, thank you so much for having me here today. A bit about myself, I went to MIT, majored in physics. I worked on Wall Street at Jane Street Capital with the goal of donating what I made. And I got involved in the digital asset ecosystem in 2017. In 2019, I founded FTX, a global cryptocurrency derivatives exchange. In 2020, we launched our U.S. arm, FTX US. And in 2021, we acquired LedgerX, now FTX US Derivatives, a CFTC-licensed clearinghouse and marketplace.

Last year, we submitted an amendment to our clearing order, which would allow us to operate as almost every other clearinghouse does, with margin. We have spent tens of thousands of hours talking with the Commission about this proposal and thousands of pages of documents. We really, really deeply respect the thorough process that the CFTC has undergone, the amount of time that they have spent digging into the details of our proposal, challenging it where appropriate and the seriousness with which they are treating this proposal. We respect the CFTC and their process and whatever conclusions they ultimately come to.

I will note that while our proposal does combine things together in a way that I think might bring powerful innovation to this space, each of the elements already exists in CFTC-licensed derivatives exchanges, including ICE NGX, LedgerX, and others.

I believe that the amendment that we put forward would help promote healthy markets. I think it that would promote fair and equitable access to platforms. In particular traditional exchanges charge for market data such that only the largest traders are able to get full knowledge of the markets that they are supposed to be trading on. With FTX, all of our market data is 100 percent free,

transparent, and public. All users, regulators, and other observers have full access to our market data.

Traditional exchanges have separate models for the largest traders and for other users such that only the largest traders have direct access with lower latency fees and more options. We would have equitable access to our platform where all users can choose the method of access that they most prefer and have access to the most powerful tools.

We also have strong customer protections under our model. It is a safe and conservative risk model which would have helped to alleviate some of the instances that we have seen with recent futures exchanges like the LME nickel fiasco earlier this year by having the collateral pre-funded at the clearinghouse rather than relying on credit, and having a real-time risk engine.

We also have enhanced customer protections. We have all of the customer protections that exist on traditional features exchanges and on FCMs because we understand deeply that we have a responsibility to ensure that if there is direct access to the platform, that users are still afforded the same level of protection. On top of that, we have further customer protections, suitability, and transparency than what you find on most other platforms.

Finally, we believe that this would bring competition and innovation. It would bring liquidity to the U.S. marketplace and options to U.S. consumers. It would bring competition in the futures markets where almost all of the volume is traded by just two exchanges. And it would bring competitiveness to the United States with respect to the rest of the world. Today, 95 percent of digital asset volume trades overseas.

And that brings me to some of the broader context here. Digital asset marketplaces need Federal oversight. They need that oversight to protect consumers, to protect against systemic risk, to bring liquidity back onshore, to ensure U.S. competitiveness globally. This is good for the U.S. economy, for Americans, for wealth creation, and good for our consumers. The CFTC is an appropriate regulator to provide this for digital asset futures contracts. They have been doing so on CME and other platforms for a number of years, a very thorough regulator who understands the space very deeply.

Thank you to the Committee for having me today, and thank you for all of the work that you have put in to providing oversight and guidance on the this ecosystem. And I look forward to your questions.

[The prepared statement of Mr. Bankman-Fried follows:]

PREPARED STATEMENT OF SAMUEL "SAM" BANKMAN-FRIED, CO-FOUNDER AND CHIEF EXECUTIVE OFFICER, LEDGERX LLC D/B/A FTX US DERIVATIVES, CHICAGO, IL

Introduction

Chairman Scott, Ranking Member Thompson, Members of the Committee, and distinguished guests, thank you for inviting me to testify before this Committee today. It is an honor and a privilege to be before you to share information and insights into our license application before the U.S. Commodity Futures Trading Commission (CFTC), as well as some of the key topics stemming from that effort. Along with my colleagues and teammates at FTX, I am pleased to provide you with as much information as you need in order to ensure a fully informed and robust conversation around whether and how this Committee could address some of these key topics.

Background on FTX and FTX US Derivatives

The FTX group of companies (FTX Group or FTX) was established by three Americans, Samuel Bankman-Fried, Gary Wang and Nishad Singh, with international operations commencing in May 2019 and the U.S. exchange starting in 2020. The business was established in order to build a digital-asset trading platform and exchange with a better user experience, customer protection, equitable access, and innovative products, and to provide a trading platform robust enough for professional trading firms and intuitive enough for first-time users. In the U.S., the company operates a federally regulated spot exchange that is registered with the Department of Treasury (via FinCEN, as a money services business) and also holds a series of state money transmission licenses. Our U.S. derivatives business is licensed by the CFTC as an exchange and clearinghouse, the subject of our application discussed today. FTX US also holds a FINRA broker-dealer license. FTX's international exchange, which is not available to U.S. users, holds a series of marketplace licenses and registrations in many non-U.S. jurisdictions including Japan and the European Union.

The core founding team had unique experience to develop an exchange given their experiences in scaling large engineering systems at premier technology companies, combined with trading experience on Wall Street. This brought to the effort an understanding of how to build the best platform from scratch, as well as what that platform should look like, unencumbered by legacy technology or market structure. ***FTX has aimed to combine the best practices of the traditional financial system with the best from the digital-asset ecosystem.***

Early International Success. The international *FTX.com* exchange has been successful since its launch. This year around $15 billion of assets are traded daily on the platform, which now represents approximately 10% of global volume for crypto trading. The FTX team has grown to over 200 globally, the majority of whom are responsible for compliance and customer support. The FTX Group's primary international headquarters and base of operations is in the Bahamas, where the company is registered as a digital-asset business under The Bahamas' Digital Assets and Registered Exchanges Act, 2020 (DARE).

FTX % global volume, 15d

In addition to offering competitive products, the FTX platforms have built a reputation as being highly performant and reliable exchanges. Even during bouts of high volatility in the overall digital-asset markets, the *FTX.com* exchange has experienced negligible downtime and technological performance issues when compared to its main competitors. We believe the dual-track focus on customers and reliability, plus compliance and regulation, are key reasons why FTX has also experienced the fastest relative volume growth of all exchanges since January 2020.

The core product consists of the *FTX.com* website that provides access to a market place for digital assets and tokens, and derivatives on those assets. Platform users also can access the market through a mobile device with an FTX app. The core product also consists of a vertically integrated, singular technology stack that supports

a matching engine for orders, an application programming interface or API, a custody service and wallet for users, and a settlement, clearing and risk-engine system. In a typical transaction, the only players involved are the buyers, sellers, and the exchange/clearinghouse.

The FTX Group has operations in and licenses from dozens of jurisdictions around the world, including here in the U.S., Europe, and Japan. At the time of this writing the FTX platforms have millions of registered users, and the FTX US platform has around one million users. For *FTX.com*, roughly 45 percent of users and customers come from Asia, 25 percent from the European Union (EU), with the remainder coming from other regions (but not the U.S. or sanctioned countries, which are blocked). In comparison to the international exchange, nearly all users of *FTX.us* are from the U.S.

Commitment to a Diverse Workforce. We are proud of our workforce at FTX and believe that one of our key strengths is a culture of mutual respect and cooperation. This type of culture is borne from the diversity of our team, which necessitates a spirit of empathy, understanding and humility. These traits in our workforce are good for business and are much of the reason we have been successful at understanding our customers and their needs, and executing on products that meet their needs. FTX has employees from all over the world with diverse ethnic backgrounds, and 60 percent of women in our workforce are in senior management positions. The majority of our global leadership comes from diverse backgrounds.

Commitment to Giving Back. FTX is committed to improving the lives not just of our customers through superior products, but also the lives of those in the broader global community. Toward this end, FTX created the FTX Foundation, founded with the goal of donating to the world's most effective charities. At minimum, one percent of net fees from FTX transactions are donated to the foundation; additionally, FTX's founders have pledged to donate the majority of what they make. Mr. Bankman-[F]ried has personally committed to donating 99% of his wealth. In 2022 alone, FTX, its affiliates, and its employees so far have donated over $100 million to alleviate global poverty, provide ventilators to countries ravaged by [COVID], provide financial services to the un- and under-banked, and combat climate change by ensuring FTX is carbon-neutral, and help the world achieve a brighter future.

FTX has launched additional philanthropic initiatives including the FTX Future Fund which invests in ambitious projects aiming to improve humanity's long-term prospects. FTX Community's philanthropic efforts are focused on global poverty, animal welfare, and community outreach. In 2021, FTX Community organized the *FTX Charity Hackathon* * and awarded $1 million to a local student group with the best idea to improve mental and physical health.

Commitment to Carbon Neutrality. FTX Climate is a comprehensive initiative to make FTX carbon-neutral, support important environmental projects, and fund transformational research on the most impactful solutions to climate change. FTX plans to spend at least $1 million annually through FTX Climate. FTX has endeavored to take ownership of our portion of the environmental costs of mining associated with public blockchains and has purchased carbon offsets to neutralize those costs, in addition to funding research. Those interested in learning more about these initiatives can find more information at *https://www.ftx-climate.com*.

Banking the Un- and Under-Banked. FTX is dedicated to harnessing the power of crypto to tangibly improve lives. We are working with nonprofit organizations, cities and counties to make the financial system more inclusive. According to Federal Reserve estimates, 70 million Americans are either unbanked or underbanked. They lack a safe place to store money and pay exorbitant fees to cash checks. Millions more are banked but face high fees when their balance falls below a minimum. Members of these communities often do not have insured checking accounts, for a variety of reasons, including credit histories. The legacy bank settlement system makes it hard to see realtime balances, and leads to overdrafts, which leads to higher fees. Our bank the unbanked program offers those cut out of the financial system a free bank account and debit card linked to a crypto wallet. There are no fees, and no minimum balances. Transferring funds is virtually free and instantaneous and can be accessed on a phone. They can use it to receive money, make payments and build savings. There are no fees and no minimum balance. Transferring funds through the crypto wallet is virtually free and instantaneous. We began our program in South Florida in partnership with OIC of South Florida and Broward County Government, and have recently announced a new million dollar program with the City of Chicago, and look forward to expanding to many other cities and communities across the country.

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* *https://ftxcharityhackathon.com/*.

Humanitarian Aid in Ukraine. Ukraine is deploying digital assets to defend against Russia's invasion and support the population. In collaboration with the Government of Ukraine, FTX is converting millions of dollars in wartime crypto donations to fiat for the National Bank of Ukraine. This marks the first-ever instance of a cryptocurrency exchange directly cooperating with a public financial entity to provide a conduit for crypto donations. Facilitated by FTX, the Ukrainian Government has purchased crucial defense and humanitarian equipment including medicine, ballistic plates for bulletproof vests, walkie-talkies, lunches for soldiers, thermal imagers and helmets. Ukraine's Deputy Minister of Digital Transformation has noted, "each and every helmet and vest bought via crypto donations is currently saving Ukrainian soldiers' lives." Additionally, when the war broke out in Ukraine, FTX gave $25 to every Ukrainian user of our platform.

U.S. Operations and FTX US Derivatives. FTX services U.S. customers through the FTX US businesses, which includes the spot exchange, FTX US Derivatives (*https://derivs.ftx.us/*), the NFT marketplace, and a soon-to-go-live FINRA broker dealer (FTX Capital Markets). FTX US is housed under a separate corporate entity from FTX international and is headquartered in Chicago, IL. It has a similar governance and capital structure to the overall corporate family, and also has its own web site, *FTX.us,* and mobile app. As with *FTX.com,* the core product is an exchange for both a spot market for digital assets as well as a market for derivatives on digital assets. Like other crypto-platforms in the U.S., the spot market is primarily regulated through state money-transmitter laws. FTX.us and FTX US Derivatives (FUSD) are being integrated into one user-experience platform and web site, but for now these two categories are separated in the United States, with spot market trading on *FTX.us* and derivatives trading offered through FUSD.

FUSD was formed through the acquisition and re-branding of LedgerX and is being integrated with the overall FTX US platform. The product offers futures and options contracts on digital assets (or commodities) to both U.S. and non-U.S. persons. FUSD operates with three primary licenses from the CFTC: a Designated Contract Market (DCM) license, a Swap Execution Facility (SEF) license, and a Derivatives Clearing Organization (DCO) license. Prior to its acquisition, this business was the first crypto-native platform issued a DCO license by the CFTC in 2017, which was a milestone for the agency and the digital-asset industry. That license was later amended in 2019 to permit the clearing of futures contracts on all commodity classes.

FTX US Derivatives "Equitable" Market Structure. On the FUSD platform, users can trade a Bitcoin Mini Option or Ethereum Deci Option, a Next-Day Bitcoin Mini Swap or Next-Day Ethereum Deci Swap, and a Bitcoin Mini Future. For now, all of these contracts are fully collateralized. FUSD operates its trading platform with the option of direct access to the market and clearinghouse for users, which allows those who access the platform in this manner to become direct members of the FUSD clearing house. In practice, this allows any individual or institutional investor to onboard the FUSD platform by visiting the FUSD web site and completing the on-boarding process, or by connecting to the platform through the FUSD API. Importantly, FUSD is also willing for intermediaries to connect and provide their own customers access to FUSD products for trading, which is contemplated both by FUSD's existing clearing order, by FUSD's active rulebook, and confirmed publicly by the company's leadership at FIA's conference in Boca Raton, FL this year. By providing both options to investors for accessing FTX products—direct access or intermediated access—FTX maximizes choice for the investor and likes to think of this market structure as a more equitable market structure. For direct-access users, FTX also provides all of the applicable suitability controls and KYC processes that are often done by intermediaries, ensuring that the standard safeguards are in place whichever way customers access the platform.

While this market structure is not unusual among global derivatives exchanges (it is the norm for digital-asset exchanges that list derivatives products), it is not the common market structure for the U.S. derivatives market. Nonetheless, the FUSD market structure is familiar to the CFTC and permitted under the CFTC's regulations, as evidenced by the fact that FUSD has been operating and supervised by the CFTC since 2017; in addition, ICE NGX operates a CFTC-licensed, direct-member model that offers margined products (see *https://www.theice.com/ngx*); ErisX (*https://www.erisx.com/*); Nadex (*https://www.nadex.com/*).[1]

The FTX Application Before the CFTC. When the FUSD DCO was originally approved by the CFTC, the order granting the license limited the products that the DCO could clear to fully collateralized derivatives. In December 2022, FUSD submitted an application to amend its DCO license (FTX Application) to allow FUSD

[1] *https://www.cftc.gov/PressRoom/PressReleases/6833-14.*

to clear margined futures contracts.[2] The submission was made after many months of informal discussions with the CFTC staff, and after voluminous materials were created in support of the application and made part of the submission. Those discussions led to various adjustments and edits to the materials during the process.

On March 10, 2022, the CFTC released a request for comment on the FTX Application and posed a number of questions to the public for consideration. The period for comment originally was 30 days but the CFTC extended it for another 30 days, which ended May 11, 2022.[3] The CFTC May 11, 2022 also has noticed a staff roundtable for May 25, 2022, where the agency will oversee a discussion on issues related to intermediation in the U.S. derivatives market place.[4] To be sure, the CFTC has responded to and addressed the FTX Application in a very deliberate and transparent manner, allowing considerable opportunity for the public and the industry to comment on this narrow licensing matter. Under the CFTC's regulations, the process for applying for a DCO license is not required to be the subject of public comment and normally is not subjected to the same level of public scrutiny. This is in addition to a large amount of time that the staff has spent evaluating the FTX Application.

Discussion

In this discussion I will address the following key points related to the FTX Application: (1) the sound and conservative approach to risk-management taken by the FUSD platform; (2) how FTX promotes equitable access while ensuring adequate customer protections to users of the FUSD platform; (3) how the innovations of the FTX Application address many pain points experienced by the U.S. derivatives market place; and (4) the importance of promoting responsible innovation and competition in the U.S. derivatives market place. While discussing these points this testimony references relevant CFTC regulations as needed, as well as international considerations related to equivalency determinations made by other jurisdictions.

1. The FTX Risk-Management System is Tested, Safe and Conservative

The FTX Application before the CFTC proposes a risk-management system that is safer and more conservative than what is normally seen in the U.S. derivatives markets for a number of reasons. The proposed risk-management system, moreover, is consistent with CFTC regulations, including those related to DCO risk management. The Commodity Exchange Act (CEA), which authorized the CFTC and its regulatory authorities, is purposefully principles-based and flexible in allowing each DCO to implement a particular risk-management program for the market that it clears, so long as the core requirements of the CEA are met.[5] Pursuant to Congressional intent, the CFTC's regulations give discretion to the DCO in the exact design of the risk-management system, and give the CFTC the authority to determine whether that design is consistent with the CEA.[6] With this legal basis in mind, FTX has designed a system that has several key features that reflect a more conservative approach to risk management.

Real-Time Risk Assessment. First, the FTX risk-management system assesses risk on a nearly real-time basis, assessing customers' trading positions and account balances every few seconds to determine whether a customer has adequate resources or collateral in their account. This risk-exposure time period is substantially shorter than what is typically seen on other derivatives exchanges in traditional finance, ensuring on a more frequent basis that adequate collateral is on hand, rather than waiting longer for risk in the portfolio to potentially increase. This contrasts with most traditional markets, where risk typically is monitored on a less frequent basis.

Prefunded Collateral Deposits Instead of Credit Extensions. Second, the system also requires that customers transfer the required collateral to support their trading to the FTX platform before they can begin trading. The amount of collateral required is based on a proven risk methodology that would cover at least 99 percent of the one-day portfolio returns using appropriate weightings for base VaR and stress VaR. To account for stress scenarios for a particular asset, the model looks at both historical as well as hypothetical scenarios to appropriately calibrate necessary resources. Notwithstanding the shorter risk-exposure time period the FTX system relies on, for its CFTC risk model FTX relies on a time period of 24 hours to calculate collateral requirements based on regulatory requirements, building in an additional buffer to the original 99% margin calculation. On traditional deriva-

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[2] FUSD currently only offers futures, options, and swaps on digital asset commodities.

[3] *https://www.cftc.gov/PressRoom/PressReleases/8499-22*.

[4] *https://www.cftc.gov/PressRoom/PressReleases/8499-22*.

[5] *Derivatives Clearing Organization General Provisions and Core Principles* ("DCO Final Rule"), 76 FED. REG. 69334, 69335 (Nov. 8, 2011).

[6] *Id.* at 69365–76.

tives exchanges collateral is instead generally based on credit, exposing all market participants if that credit decision turns out to be unwarranted.

Market-Responsive Liquidations Rather Than Risk Buildup. Third, the risk system has a real-time liquidation feature to prevent a build up of risk in a customer portfolio. If a customer begins to suffer trading losses and their collateral balance declines toward minimum margin requirements, an automatic liquidation process uses rate-limited, marketable limit orders to reduce risk as the customer account value falls below the maintenance margin level. As a result, customers are incentivized to manage their account collateral and proactively add collateral or reduce risk positions prior to partial auto-liquidation. ***Users of the platform receive ample and repeated notice that a liquidation of a position could ensue—the FUSD platform provides a series of warnings that a customer account is reaching levels that could trigger the risk system's liquidation feature.***

Notably, unlike traditional platforms, the FTX risk system does not extend calls for additional margin or extend credit to the customer hoping that such a call can be met—the system is based on a presumption that FTX will not have recourse against any customer for credit losses. On traditional exchanges it can take days to begin attempting to liquidate a large position, by which time it can be substantially more underwater than it was initially. This also means that FTX's risk system is non-recourse, and so customers cannot lose more than they proactively deposited to the clearinghouse prior to trading, unlike traditional platforms that may attempt to seize a customer's other assets.

Auto liquidations on the platform are not expected to be the norm or common as some have feared, particularly because of the conservative initial-margin methodology FUSD has used. With initial margin required by FUSD based on a 24 hour period of risk, but with the period of risk assessed measured in seconds, the amount of initial margin collected by FUSD will be substantially higher than the risk model actually requires. This means that the risk of auto liquidations of positions goes down, minimizing the number of instances this feature is deployed. Indeed, on the FTX international platform, the notional value of liquidated positions is well less than one percent of all notional activity on the platform historically. Intermediated users also will have opportunities to avoid auto liquidation through their FCM's extension of credit, if such a product is offered.

Observers have asked whether the auto-liquidation feature could promote "pro-cyclicality" in a market, exacerbating or accelerating declines in asset prices. The risk of pro-cyclicality comes from the interplay between margin calls and market moves. In particular, if markets start moving down[up], that could cause selling[buying] margin calls, which could move markets further down[up], creating a cycle. The core parameters that control this are:

1. Market liquidity
2. Margin call concentration
3. Original market move

If (1) is much greater than (2), the risk of strongly pro-cyclicality is low. If (2) is comparable to (1), there is larger risk. In order for there to be a large risk of a pro-cyclic event, you also have to have a large enough initial market move to trigger the cascade.

Over the past few years, the risk of pro-cyclic behavior has dropped substantially on the FTX international platform. Market liquidity has increased substantially, from roughly $10 billion of daily digital asset volume in 2019, to ~$150 billion today. Here is some information from the two largest moves in cryptocurrency markets:

Day	BTC move	ETH move	FTX volume	FTX OI	Liquidations	Insurance fund
2020–03–12	−39%	−44%	4,441,696,624	228,317,363	44,946,399	−410,638
2021–05–19	−14%	−26%	53,068,090,693	3,718,475,962	1,679,839,594	−4,686,029

Both March 12, 2020, and May 19, 2021, represented elevated risk days for pro-cyclical behavior, with market moves of roughly 40% and 20%, respectively. The scale of the marketplace grew substantially over that year, with volume and open interest climbing by more than 10x, and liquidation volume growing by more than 30x. Notwithstanding the higher number of liquidations, the growth in the liquidity of cryptocurrency markets helped to buffer the moves, creating less total price movement on the day.

In any case, FTX has addressed risks related to pro-cyclicality in a comprehensive manner. First, the FUSD risk model follows various CFTC regulatory requirements related to the margin model that are designed to address pro-cyclicality. Second, the FTX trading platform sets slowly moving price bands for certain contracts, where

the exchange will not accept trades or orders that are set outside the minimum and the maximum of the price range for that particular contract. These price bands have the effect of mitigating the impact of erroneous orders, momentary illiquidity, or large concentrated buying or selling of contracts that could momentarily exhaust the orderbook. They also act as a temporary circuit breaker, preventing markets from being able to quickly decline or increase more than a certain amount while creating time for algorithms to be inspected and liquidity to refresh.

Additionally, FUSD limits the rate at which it closes customer positions to be within a small fraction of global volume. While this will not entirely eliminate the price impact of liquidations, it will ensure that the liquidations are much slower than the rate at which liquidity can be transported to the orderbook by sophisticated market participants, mitigating the risk of inefficient short-term price impact. Together these market and risk controls work to stem pro-cyclical trends in the FTX order book, including trends influenced by the auto-liquidation feature of the FTX risk engine. With appropriate calibration of each of these controls, the FTX risk-management system promotes risk-reducing platform operations that also limit systemic risks throughout the market ecosystem.

It is important to note that the absence of the auto-liquidation feature would have a pro-cyclical impact on markets but that would manifest in a different manner. Without auto-liquidation, there would be a call for additional collateral from a customer whose position suffered enough losses to require it. During a period of market stress and declining asset prices, market participants operating under this model would be under pressure to find liquid resources to make a margin call at a time when liquidity becomes more scarce. There are trade-offs to any risk-management system and in times of market stress, pro-cyclicality always will be a risk to address and manage; FTX believes its risk system does so most effectively and appropriately.

One way to view the decisions made by the risk engine is through the lense of a particular account. If a particular user's collateral is decreasing and nearing empty, the combination of real-time assessment and collateral prefunded directly at the clearinghouse allows FTX's risk model to ascertain exactly what the account's risk level is. This means that the risk engine can delay liquidating until the account is nearly out of collateral, while still successfully closing down the account's position in time to avoid a default. In a traditional, slower model, the risk engine would have had to choose between margin calling the account much sooner—building in days of delivery time—or risking the account defaulting and risk spreading to the system, as happened recently on another commodity exchange.

Backstop Liquidity Providers to Address Defaulting Positions. Fourth, the FTX risk-management system relies on backstop liquidity providers (BLPs) to take on the portfolio of a participant in default. To wit, if a customer's account value continues to decline further to a determined margin threshold, then the system declares a default and the risk position is moved automatically to the contractually bound BLPs. Firms volunteer to be BLPs—no one is forced to—but when a firm does become a BLP, they are automatically passed liquidating positions in real time and are unable to reject it, legally bound to provide liquidity when it is most important.

Over-Capitalized and Conservative Guaranty Fund to Absorb Default Losses. Finally, after BLPs assume and manage the risk positions of participants in default, and if there remain accounts with negative value, the FTX guaranty fund will absorb those remaining negative values. The sizing of the guaranty fund has been undertaken very conservatively, based on a multiple of a conservative and reasonable estimate of ten percent of total outstanding initial margin posted on the FUSD platform, which resulted in a calculation of $250 million cash now deposited unencumbered in a bank account held at Bank of America. Historically, on *FTX.com* less than one percent of this amount has been drawn from the *FTX.com* guaranty fund.

Nonetheless, FTX is committed to growing the guaranty fund's minimum size as activity on the platform grows: Instead of fixing the fund's size to sustain the failure of the largest clearing FCMs ("Cover-1" or "Cover-2"), we have instead voluntarily committed to cover 10% of total outstanding initial margin, up to a "Cover-3" standard if required. This is substantially more conservative than is required by regulation. (I have included as an exhibit to this testimony a fuller explanation of how FTX sized the guaranty fund for the FTX Application.[7])

Some observers have assumed that if the FUSD risk model relies only on its own capital (and not guaranty-fund contributions by member FCMs), and the guaranty fund is sized based on the CFTC's "Cover-1" standard with only non-institutional participants, then the guaranty fund must be too small to sufficiently absorb losses.

[7] See also *https://www.ftxpolicy.com/ftx-guaranty-fund*.

Instead, FTX has gone above and beyond the regulatory requirements, and well above what has been necessary or required based on our experience over the past years of operation internationally.

All other things remaining equal, this type of system is a more conservative approach to managing risk. So long as the collateral required by the system's risk model is adequate, and so long as the platform deploying the risk system is otherwise operated in a resilient manner, this type of system will better prevent massive losses by a customer that could have implications for the broader market by requiring collateral to be posted to the clearinghouse, and by acting promptly in the case of large market moves. And perhaps most importantly, the FUSD risk-management system also aligns with the CFTC's regulations.

2. FTX US Derivatives Promotes Equitable Access While Ensuring Customer Protections

FTX is focused on compliance, transparency, education, and assessing users' knowledge and understanding of our products to create responsible equitable access. FTX believes that all users (provided they pass our KYC/AML program and are not otherwise barred by law or past improper conduct) should have full access to FTX, so long as they are sufficiently informed and can demonstrate that they understand what they are trading; we also believe that it is our duty to ensure that those safeguards are in place. This approach is fully aligned with the Congressional mandate to provide for fair and open access to CFTC markets in a manner that is consistent with prudent risk management.[8]

Hallmarks of Equitable Access. FTX's real-time monitoring of participant positions enables it to determine, at all times, whether a participant's account has sufficient cash and collateral to meet its margin obligations to the DCO. Because FTX monitors participant accounts 24/7 and addresses risk in real time, there is no need to establish minimum capital requirements for each participant, as is the common approach to U.S. investors for credit and risk purposes (FTX does collect financial information from all users during the on-boarding process). Instead, FTX's risk-management framework enables it to ensure at all times that each participant has sufficient financial resources to meet its current obligations arising from participation in the DCO. Any "means" testing that constrains access to FUSD therefore stems from available resources that the user has posted as collateral on the platform, not otherwise on personal wealth.

Notwithstanding the above, the vast majority of FTX users on all of its platforms are highly sophisticated traders. On the FTX international platform, for example, more than 90 percent of the trading volume comes from users trading more than $100,000 in volume per day. FTX anticipates that the user base for FUSD would be similar if the FTX Application is approved.

Another hallmark of equitable access is free and open access to all market data on FTX platforms including FUSD. Users, regulators, and other market participants can access all public market data via the FTX website, mobile app, or API in real time. Additionally, there are no platform-access or connection fees—all users large and small have the same options for connecting to the matching engine and clearing house. Users have access to their entire account, balance, funding, and trading history displayed via website, mobile app, and API. All fees charged are displayed transparently in a user's market data.

Customer Protections—Protection of Customer Funds. In the case of a FUSD user who also is a customer of an FCM, the full panoply of FCM requirements would apply, including those that relate to the safekeeping of customer assets. Similarly, a direct-access user of FUSD also enjoys comparable protections under the relevant rules applicable to all DCOs. These rules include those related to commingling of DCO and clearing member customer positions, as well as rules on money, securities, or property received to margin, guarantee, or secure such positions.[9] Pursuant to its current CFTC clearing order and rulebook, FUSD separately accounts for and segregates from FTX proprietary funds all participant funds used to purchase, margin, guarantee, secure, or settle positions. Finally, restrictions on investing customer collateral apply equally to the FUSD DCO.[10]

Customer Protections—Robust Systems Safeguards. The FUSD platform, like all DCMs and DCOs, is subject to the CFTC's system-safeguards regulations,[11] which require a program designed to identify and minimize operational risk and protec-

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[8] See CEA section 5b(c)(2)(C), 7 U.S.C. § 7a–1(c)(2)(C); see also CEA section 5(d)(2), 7 U.S.C. § 7(d)(2).

[9] CFTC Regulation 39.15.

[10] CFTC Regulation 1.25.

[11] CFTC Regulation 38.1050–51 and Regulation 39.18.

tions from cyber-related threats. FTX has implemented best-in-class controls relating to information security, including controls related to: (1) access to systems and data; (2) user and device identification and authentication; (3) vulnerability management; penetration testing; (4) business continuity and disaster recovery processes; and (5) security incident response and management, among others.

Customer Protections—Related to Trading. In its capacity as a DCM, the FUSD platform provides the same types of customer protections and transparency ***related to trading*** on the platform when a user accesses the platform directly as the user would experience through an FCM. In the absence of an intermediary standing between the FUSD platform and the user, FTX would provide the following types of protections or reports normally provided by an FCM:

- Disclosures related to the risks of trading; [12]
- Order and transaction recordkeeping obligations; [13]
- Minimum trading standards; [14]
- Trading authorization requirements; [15]
- Requirements to produce monthly statements and confirmations; [16]
- Conflict of interest and trading standards.[17]

Again, FUSD has been operating under CFTC supervision for years and providing these protections as required, and would continue to do so if the FTX Application is approved. Over years of operation, FUSD has demonstrated how its market structure and customer-protection regime can provide the same or superior level of protections even for those users who access the platform directly.

3. The FTX Application Addresses Long-Standing Industry Pain Points

FTX is eager to help contribute ideas and solutions to some of the challenges the global derivatives industry has faced, and we believe that approval of the FTX Application could promote this in some measure. There is a trend toward more derivatives trading taking place on exchanges or otherwise being cleared by clearinghouses, meeting a policy goal reflected in the Dodd-Frank Act and similar policy efforts globally.[18] But this trend has witnessed the coincident rise in regulatory-related costs for intermediaries (including regulatory-capital requirements), and the low interest-rate environment over recent years since the 2008 financial crisis (although the interest-rate environment is changing).

These factors have led to some market concentration in the derivatives market, which could increase systemic risk, and limit access to markets and products in a way that ultimately could hamper risk-management efforts (for which derivatives markets are formed). For example, there were 176 FCMs registered with the Commodity CFTC in early 2008, while today there are only 61, with only 51 holding client margin for futures, and 18 for cleared swaps.[19] Meanwhile, the amount of margin held by U.S. FCMs is at all-time historical highs, meaning risk is increasingly concentrated in fewer intermediaries, which in turn leads to higher capital requirements for these firms.[20] (In Section 4 of this testimony below, I discuss market concentration in exchange trading among the small number of U.S. derivatives exchanges.) Additionally, efficient movement of collateral between market participants can be encumbered by legacy technology systems used by those participants.

Approving the FTX Application could help address concerns related to market concentration, consequent systemic risk, rising costs, and collateral movements, albeit in measured ways. First, the FTX Application envisions the "equitable access" market structure earlier described that would allow investors to access the FUSD mar-

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[12] FUSD is subject to exchange trading related public disclosure requirements as set forth in DCM Core Principle 7, and CFTC regulations 38.1400 and 38.1401, which are comparable to the duties of an FCM.

[13] FUSD is subject to exchange trading related recordkeeping requirements as set forth in DCM Core Principle 18, and CFTC regulations 38.950 and 38.951.

[14] FUSD is subject to exchange trading related requirements to protect its markets and market participants as set forth in DCM Core Principle 12, and CFTC regulations 38.650 and 38.651.

[15] CFTC Regulation 166.2.

[16] FTX provides IRS Form 1099s to customers, trade history is available to each customer.

[17] FUS is subject to exchange-trading, conflicts-of-interest requirements as set forth in DCM Core Principle 16, and CFTC regulations 38.850 and 38.851.

[18] *https://www.greenwich.com/fixed-income/derivatives-market-structure-2022-identifying-opportunities-growth.*

[19] *https://www.cftc.gov/MarketReports/financialfcmdata/index.htm.*

[20] *https://batonsystems.com/the-broken-fcm-model-could-distributed-ledger-technology-be-its-saviour/.*

ket directly if they choose, or through an intermediary. Importantly, this market structure not only promotes market access but also relieves cost pressures on those intermediary FCMs that choose to connect to the platform. This is so because the FUSD risk model does not require guaranty-fund contributions from the FCM, thus reducing the FCM's costs—including regulatory costs—related to connecting and offering the FUSD products to its customers.

Second, the FTX real-time risk model promotes more efficient risk management that requires relatively less margin from investors compared to other models. This is due to the shortened period of risk that the risk system measures and relies on for collecting adequate margin from investors. Broader adoption of this type of model could eventually lead to less margin costs for a broader segment of the market, freeing up precious capital for other investments and uses.[21] Reducing margin held by an increasingly smaller number of intermediaries also would lower systemic risk in the markets overall.

Third, FTX is a digital-asset-native exchange and clearinghouse that has helped pioneer new technologies for more efficient payment and collateral transfers. Any reliable and resilient payment system that reduces the settlement times of payments and transfers reduces risk. If the FTX Application is approved and FTX can bring those innovations responsibly and through approval of the CFTC, the approval could help reduce settlement risk not only on the FUSD platform, but encourage the same on others. Broader adoption of payment technologies that reduce settlement times and risk also would benefit intermediaries in the ecosystem, whose regulatory costs would be reduced by such implementations.[22]

Approval of FTX Application Would Ensure Continued International Cooperation. Continued international cooperation among jurisdictions that host healthy derivatives markets also is important to risk reduction and other market efficiencies that benefit the public. It has been suggested that approval of the FTX Application might have an impact on international recognition of the CFTC's regulatory regime for purposes of equivalency determinations, on the basis that the FUSD DCO would not comply with the international Principles for Financial Market Infrastructures, or PFMIs.

In 2012, the Committee on Payment and Settlement Systems of the Bank for International Settlements and the Technical Committee of the International Organization of Securities Commissions published the CPSS–IOSCO Principles for Financial Market Infrastructures (PFMIs). The PFMIs set out twenty-four principles to be followed to manage market risk in financial market infrastructure. The PFMIs were issued in the wake of the financial crisis in 2008 and reflect international standards that regulatory bodies in individual countries are recommended to implement. In 2013, the CFTC promulgated rules implementing the PFMIs that apply to a certain subset of CFTC-registered DCOs that meet additional requirements under Subpart C of the CFTC's Part 39 regulations. Jurisdictions around the world, including the European Union, have made equivalence determinations based on their assessment of the CFTC's Subpart C of Part 39 regulations.[23] FUSD would not be able to receive recognition under another country's equivalence determination for the CFTC until it satisfies the Subpart C requirements.

The FUSD DCO is not registered under Subpart C of Part 39 at this time, nor has the FTX Application been filed pursuant to Subpart C of Part 39. If the FTX Application is approved, the fact that the FUSD DCO is not registered as a Subpart C DCO would have no bearing on equivalency determinations made by other countries with respect to the CFTC's regulatory regime. Those determinations are based on a review of the CFTC's regulatory regime, not on an individual DCO's operations or compliance profile. Unless the CFTC's regulations are amended in a way that departs from consistency with the PFMIs, equivalency determinations of the CFTC framework made by other countries will remain in place. The CFTC's approval of the FTX Application would not change that.

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[21] The amount of margin posted to intermediaries and clearinghouses for derivatives markets has increased in recent years. See *https://www.greenwich.com/fixed-income/derivatives-market-structure-2022-identifying-opportunities-growth*.

[22] See *https://batonsystems.com/the-broken-fcm-model-could-distributed-ledger-technology-be-its-saviour/*.

[23] *See e.g.,* Commission Implementing Decision (EU) 2016/377 of 15 March 2016 on the equivalence of the regulatory framework of the United States of America for central counterparties that are authorised and supervised by the Commodity Futures Trading Commission to the requirements of Regulation (EU) No 648/2012 of the European Parliament and of the Council (*https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016D0377&from=EN*).

4. The FTX Application Promotes Innovation and Competition

One of the early actions of President Biden and his Administration was to issue the ***Executive Order on Promoting Competition in the American Economy*** (Competition EO).[24] Section 1 of the Competition EO reaffirmed the U.S.'s pro-competition policy and observed:

> "A fair, open, and competitive marketplace has long been a cornerstone of the American economy, while excessive market concentration threatens basic economic liberties, democratic accountability, and the welfare of workers, farmers, small businesses, startups, and consumers . . . [and the] American promise of a broad and sustained prosperity depends on an open and competitive economy."

The Competition EO goes on to assign responsibilities to all agencies, including the CFTC, to:

> "Us[e] their authorities to further the policies set forth in section 1 of this order, with particular attention to . . . the influence of any of their respective regulations, ***particularly any licensing regulations,*** on concentration and competition in the industries under their jurisdiction."

The CEA also specifically refers to competition as a policy goal of the statute, to wit:

> "It is the purpose of this [Act] to serve the public interests . . . and to ***promote responsible innovation and fair competition*** among boards of trade, other markets and market participants."[25]

Congress therefore has enlisted the CFTC to ensure there is competition in the U.S. derivatives markets industry. Indeed, Congress since the beginning of the republic has repeatedly re-affirmed the importance of competition to the continued strength of the American economy and thus the strength of the U.S. globally, including through the body of antitrust law referenced in the Competition EO.

According to data provided by the Futures Industry Association, the total monthly volumes for futures trading in North America for March 2022 was 504,852,212 futures contracts traded.[26] For March 2022, the two largest U.S. derivatives exchanges reported trading volumes of 488,727,555 futures contracts traded.[27] This figure reflects **97 percent** of the total futures trading volume for March 2022.

These same two largest U.S. exchanges are the only CFTC-licensed venues offering margined futures on BTC at the moment. At the time of this writing, there were $1,126,498,100 of notional daily trading on one platform,[28] and $1,334,715 on the other.[29] FTX would be able to contribute to this data set only if the FTX Application is approved.

If the FTX Application is approved by the CFTC, FUSD plans to list cash-settled futures contracts on BTC and ETH. The FTX Application and the model designed to risk manage these futures contracts is specific to digital assets and is based on several years of experience successfully operating a similar risk model on the FTX international platform. At the time of this writing, FTX has no plans to list futures contracts on other asset classes, and in any case would need to undertake the process of CFTC reviewing its risk model and product specifications for any additional products on different asset classes.

FTX encourages the Committee to approach this hearing with this information, pertinent considerations and policy goals related to competition and innovation in mind. Indeed, this Committee should be commended for reviewing whether there is market concentration in other sectors of the economy under its purview, consistent with the goals of the Competition EO and longstanding U.S. policy related to competition.[30] FTX respectfully requests that the Committee do the same in reviewing FTX's licensing matter. FTX strongly believes that if the FTX Application is approved, the company will help address the challenges facing the U.S. derivatives

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[24] *https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/*.

[25] The Commodity Exchange Act, 7 U.S.C. section 5(b) (emphasis added).

[26] *https://www.fia.org/resources/etd-volume-march-2022*.

[27] See *https://www.cmegroup.com/daily_bulletin/monthly_volume/Web_Volume_Report_CMEG.pdf; https://www.theice.com/marketdata/reports/8*.

[28] *https://bitcoinfuturesinfo.com/market-share-and-futures-curve*.

[29] *Id.*

[30] This Committee held a hearing on April 27, 2022, titled "An Examination of Price Discrepancies, Transparency, and Alleged Unfair Practices in Cattle Markets," where among other issues concentration in the meat packing sector were reviewed and discussed. *https://agriculture.house.gov/news/documentsingle.aspx?DocumentID=2491*.

market place, reduce market concentration and unleash many of the broadly beneficial and impactful results that innovation and fresh thinking can bring to the U.S. economy. The over 1,490 public comments submitted to the CFTC in support of our application from academics, industry groups, investors and public-interest groups reflect that many Americans agree.

Conclusion

FTX is grateful to this Committee for the opportunity to share information about the digital-asset industry, our business, as well as the FTX Application.

It's extremely important that there is regulatory clarity and oversight for digital assets in the U.S. Currently, there is a lack of customer protection, with very little oversight of the transparency and products that customers are accessing. The U.S. economy is losing out: 95% of digital asset volume is offshore, meaning a lack of revenue and income for Americans. Finally, U.S. investors are at a disadvantage relative to those from other jurisdictions, facing markets with much less liquidity. Having a clear framework applied for markets and assets in the digital asset ecosystem would protect customers, move the industry forward, advance U.S. economic interests, and protect against system risk.

The CFTC has the tools to be a model regulator for digital assets. The agency and its staff have deep knowledge of the ecosystem; the staff has already dove into the details of blockchain-asset custody and safeguarding customer assets. The principles-based framework under the CEA is a good fit for the nascent ecosystem, which, combined with the bipartisan nature of the agency, allow it to nimbly but carefully apply its core principles and protections to new asset properties. By taking the lead on enforcement actions in the ecosystem on unregistered digital asset derivatives, the agency has created a pathway for licensure. Finally, the CFTC already oversees both direct-access platforms, and digital-asset futures—there is nothing fundamentally novel to the agency about FTX's margin application. The industry, Congress, FTX, and consumers have put their faith in the CFTC to provide Federal oversight and a pathway to registration and licensure for digital-asset venues.

In addition, providing licensure for digital-asset exchanges would increase competition in the derivatives exchange industry. Promoting competition has been a focus of the agency, the Biden Administration, House Agriculture Committee Chair Scott, and our antitrust laws. Increased competition benefits U.S. consumers and the U.S. economy and ensures global competitiveness for the country.

To be clear, we are not asking for a less thorough review from the CFTC than is always applied, nor are we looking to discard core customer protections. The CFTC has spent nearly a year digging into FTX's application, and done so with a level of rigor and comprehensive analysis that should make any regulator proud. It is up to the CFTC to make the judgments it feels are in accordance with the CEA and its core principles, and we respect that process and whatever conclusions it ultimately comes to on our margin application.

In order to protect consumers, restore America's global competitiveness in digital assets, allow the industry to function, increase competition, and protect against systemic risk, it's imperative that the CFTC use its jurisdiction over digital-asset commodities to register marketplaces.

EXHIBIT A

Understanding FUSD's Guaranty Fund Sizing

Executive Summary

Many of the questions that FTX US Derivatives has received in connection with its proposal to offer leverage for U.S. crypto futures, and its $250 million guaranty fund (of unencumbered USD cash), relate to perceived uncertainty around how or whether the 24x7 risk model and the guaranty fund will work in times of stress and/or volatility. Fortunately, through FTX's experience running the *FTX.com* trading platform over the last several years, we have objective and historical data based examples that show how well the FTX risk and clearing model works.

In this post, we walk through the model and the real world experience showing that, even on days of 35% or higher movements in the price of bitcoin, *FTX.com* has never had to use more of its guaranty fund than *FTX.com* made in revenue for that day.

We then observe that while the FUSD risk model will follow the *FTX.com* model concept, there are at least two important enhancements that allow it to provide an even greater level of comfort and protection to market participants and regulators.

First, the FUSD risk model assumes that it will take 24 hours to start to close out undercollateralized positions (*versus* the reality of the risk program running in

real-time)—meaning that the initial margin requirements themselves are materially more conservative than they need to be.

Second, FUSD has sized its guaranty fund at a level that is many multiples of the amount that even its conservative risk model projects as the required guaranty fund level (*i.e.,* approximately 100 times times the estimated highest daily draw on the default fund in extreme volatility scenarios).

Finally, the FUSD initial margin model uses a sophisticated filtered historical simulation to capture market risk, concentration risk, and liquidity risk, incorporating anti-pro-cyclicality controls such as stress VaR and volatility floors.

CFTC Comment Period (Open Until May 11, 2022)

As many are aware, FTX US Derivatives ("FUSD") operates a futures exchange and derivatives clearinghouse in the U.S. via licenses issued by the U.S. Commodity Futures Trading Commission ("CFTC"). Currently, FUSD is only permitted to list and clear fully collateralized derivatives products; however, FUSD has requested that the CFTC amend FUSD's derivatives clearing organization ("DCO") registration to permit FUSD to list and clear leveraged/margined futures contracts. Once approved, FUSD intends to list and clear leveraged/margined futures and options contracts on digital assets, including bitcoin and ether, among others.

The CFTC has invited the public to comment on FUSD's request, through May 11, 2022. The CFTC's six-page request for comment is a straightforward list of questions and may be viewed here: *https://www.cftc.gov/media/7031/CommentFTXAmendedOrder/download*. Any member of the public may submit a comment here, through May 11, 2022: *https://comments.cftc.gov/PublicComments/CommentForm.aspx?id=7254*.

Robustness of the FTX Clearing Model and Guaranty Fund

The FUSD clearing and risk model for leveraged futures products is patterned on the clearing and risk model that FTX has deployed and operated on its non-U.S. venue, *FTX.com*, for several years. *FTX.com* routinely handles the trading and clearing of $10 billion or more in transactions daily, measured on a notional basis (any interested observer can track daily notional volume and open interest levels for all of the major global crypto exchanges here: *https://ftx.com/volume-monitor*). Notably, the *FTX.com* risk model operates on a 24 hours a day, 7 days a week basis, and under this risk model positions that become undercollateralized are de-risked (or "liquidated") on an orderly step basis (*i.e.,* the overall position is reduced/closed out some percent at a time, subject to prevailing liquidity and market conditions) through a process that runs essentially in real time. This is in contrast to the traditional clearing and risk model deployed by most of the U.S. futures market today—where undercollateralized positions may generally be held open for a day or more (particularly if over a weekend), even if the underlying collateral has been completely exhausted, while the clearinghouse and typically its clearing members wait for the owner of the undercollateralized position to respond to a request (*i.e.,* a margin call) to deliver collateral (or margin) in an amount sufficient to bring the position back above water. Liquidation or close out of the position is then generally initiated only when the owner of the position has failed to meet this margin call after some determined period of time—which could be on a 24 hour delayed basis or, depending on the market and timing, several days delayed basis. During that gap, the position can continue to deteriorate and the level of insufficiently collateralized risk accumulates without being backstopped (other than by the assets of other market participants and the clearinghouse).

Under FTX's model, risk is not permitted to build, unchecked, on an under- or uncollateralized basis, full stop. Instead the FTX risk model, on a 24x7 basis, operates to de-risk (and liquidate) these positions in real time, down to levels where the collateral that is posted is sufficient to support the remaining position (if any). Where the posted collateral is insufficient to support any remaining position, the positions may be given over to backstop liquidity providers (each, a "BLP", which generally are sophisticated trading firms with substantial balance sheets that have pledged, via contractual agreement and actually posted collateral, to take over liquidating positions programmatically and in real time; the BLPs collectively have billions of dollars of collateral sitting in FTX's clearinghouse at all times). If the BLP program is insufficient to take over the position, FTX's guaranty fund (which is funded fully by FTX in cash and has no assessment authority over any other trading participant, clearing member or otherwise) provides a backstop pool of capital to wind-up and close-out the position.

As noted above, many of the questions that FUSD has received in connection with its 24x7 risk model and its $250 million guaranty fund relate to perceived uncertainty about how it may work in times of stress and/or volatility. Fortunately,

through FTX's experience running the *FTX.com* trading platform over the last several years, we have objective and historical data based examples to demonstrate its performance.

*Mapping the **FTX.com** Risk and Clearing Model Experience to the FUSD Proposal*

The following core facts underscore our confidence in the implementation of the *FTX.com* risk and clearing model as it has been proposed by FUSD:

While average daily volume ranges from $10 billion to $20 billion notional, per day, *FTX.com* has traded up to $50 billion/day of notional volume and has held up to $11 billion in notional open interest at one point in time.

Over the last 3 years we have experienced single-day bitcoin price moves of up to 38%, and the insurance fund has paid out a net total of $9.5 million (across that entire time period). Generally, *FTX.com* operates on a 5% collateral threshold requirement. The single biggest daily drawdown from the *FTX.com* insurance fund was $4.7 million, on a week that the bitcoin price moved down 38%—notably, that drawdown was less than *FTX.com*'s revenue for that day.

Had *FTX.com* set margin requirements as high as we plan to for our U.S. platform, the insurance fund would not have had a drawdown at all and instead, over time, we would have actually added to the fund. Had *FTX.com* set margin requirements to the low end of the range we anticipate requiring in the U.S.—say, 15%—the single biggest daily drawdown would have been $1.7 million.

FTX's experience running the FTX risk and clearing model provides very strong support for concluding that "it works", particularly as it is proposed to be implemented at FUSD. The FUSD default fund is super sized ($250 million *versus* a historical draw of less than 1% of that on *FTX.com*). In the U.S., the initial margin collateral requirements are meaningfully higher than the initial collateral thresholds used on *FTX.com,* meaning that we anticipate draws to be even smaller.

Nonetheless, we have already committed to growing the guaranty fund's minimum size as activity on the platform grows: Instead of fixing the fund's size to sustain the failure of the largest clearing FCMs ("Cover-1" or "Cover-2"), we have instead voluntarily committed to cover 10% of total outstanding initial margin, up to a "Cover-3" standard if required. This is substantially more conservative than is required by regulation.

Regarding the risk engine's auto-liquidation feature, two questions often come up: (1) does the risk engine promote pro-cyclicality in the market; (2) what implications does the risk engine's behavior have for systemic risk and contagion; and (3) is there a way for an investor to opt out of the auto-liquidation feature of the risk engine. First, FTX has built in risk-mitigating protections to address pro-cyclicality, including price bands, position limits and concentration charges on platform users whose positions reach a certain threshold—all of these features together restrain the extent to which market prices will move in response to the risk engine liquidating a customer position.

The anti-pro-cyclical nature of the *FTX.com* margin model has been proven over time: Orderly liquidation of undercollateralized positions has been refined and tested through multiple high volatility days and periods over recent years. The risk engine is also built to wind down positions in an orderly manner, limiting its activity to a small fraction of overall market volume so as to avoid undue temporary impact.

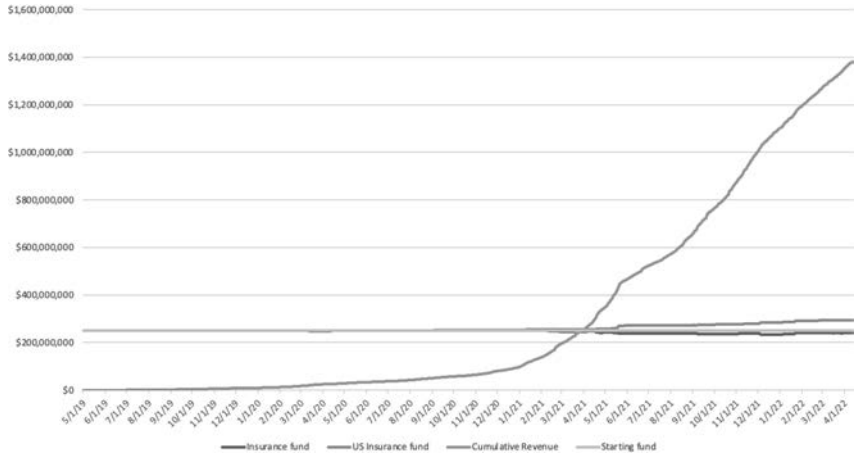
Second, by quickly unwinding the riskiest, most undercollateralized positions, the risk engine prevents build-up of credit risk that could otherwise cascade beyond the platform, resulting in contagion. Because the risk engine operates 24x7, moves in the underlying cash markets, which are also 24x7, do not result in excessive credit risk buildup in derivatives markets. This is especially true during overnight, weekend or holiday times, when traditional derivatives markets remain closed. Instead, the platform reduces systemic risk by closing down or otherwise re-collateralizing these positions in real-time (as described below).

Third, the FUSD platform offers multiple methods for connecting to the platform, including through an FCM—indeed, the *FTX.com* platform has brokers connected to the platform today. For users that connect through an FCM to FUSD, there are a variety of methods the FCM could deploy to "shield" an investor from auto-liquidation of her position, including the fee-service of re-collateralizing to the investor's account as necessary to prevent liquidation of the position.

No one is more interested in ensuring that the risk and clearing model holds up in even the most extreme of conditions than us, as we are backstopping it with the guaranty fund. *FTX.com*'s experiences have allowed the FUSD risk team to build a model that is time tested and exceptionally persistent (however measured, across any number of quantitative metrics). The chart below helps illustrate these points in a striking way: Based on historical data, the FUSD guaranty fund would have actually grown in size over time if the FTX margin model had been in operation

over the past 3 years, under our anticipated minimum U.S. initial margin requirements.

Insurance Fund *vs.* Revenue



*Above, a graph over the lifetime of **FTX.com** of the performance of its risk engine. The yellow line is a $250m initial guaranty fund size; the blue line is the empirical performance of the **FTX.com** insurance fund, and the orange line is the performance the insurance fund would have had if it had required 15% margin, which is on the lower end of FUSD's anticipated range. The fluctuations are small under both the **FTX.com** and FUSD risk models, and under the FUSD model the guaranty fund actually grows over time. For reference, the gray line is **FTX.com**'s cumulative historical revenue. Net movements in the guaranty fund are less than 1% of the initial size and less than 1% of the revenue **FTX.com** collected over the period.*

	Total	*Daily*	*Max*
Volume traded	*$6,288,391,118,700*	*$5,833,386,938*	*$53,068,090,693*
Revenue	*$1,382,091,723*	*$1,282,089*	*$12,800,764*
Open Interest (approx.)	*$7,000,000,000,000*	*$7,000,000,000*	*$11,000,000,000*
Abs BTC move	*2,989.1%*	*2.8%*	*38.9%*
Abs ETH move	*3,862.6%*	*3.6%*	*43.9%*
Insurance fund net usage	*−$9,468,974*	*−$8,784*	*−$4,686,029*
Insurance fund with U.S. margin	*$45,048,377*	*$41,789*	*−$1,628,656*

The CHAIRMAN. Thank you. And now Mr. Lukken, please begin when you are ready.

STATEMENT OF HON. WALTER L. LUKKEN, J.D., PRESIDENT AND CHIEF EXECUTIVE OFFICER, FUTURES INDUSTRY ASSOCIATION, WASHINGTON, D.C.

Mr. LUKKEN. Chairman Scott, Ranking Member Thompson, and Members of the Committee, thank you for the opportunity to testify. It is indeed great to be back in this Committee room. I am President and CEO of FIA, a leading global trade organization for the futures, options, and centrally cleared derivatives markets. And today indeed is a healthy dialogue for our industry. As someone who has served as CFTC acting Chair and Commissioner, I am proud of the CFTC's mission to not only uphold strong customer protections and police the integrity of the markets but also promote responsible innovation and fair competition among market participants. In crafting this balanced mission, Congress and this Com-

mittee were careful in making sure innovation and competition were advanced responsibly and fairly without jeopardizing the integrity or financial stability of our markets or the protections afforded to customers.

Today, we are at an inflection point that requires us to carefully consider the benefits of an alternative clearing structure and ensure it does not compromise the battle-tested protections and checks of the existing clearing model. The CFTC is now considering a proposal by FTX that would replace the traditional clearing model that distributes risk using futures commission merchants with a more automated and centralized one. Specifically, the FTX direct clearing proposal would for the first time combine margin futures with near real-time margining, 24/7 auto-liquidation to under-margin customers, and a self-funded CCP default fund without the benefits of FCMs managing, underwriting, and mutualizing customer risk.

It is important to point out that the FTX proposal would permit futures trading at any underlying asset class transacted by any type of customer, including commercial hedgers. This requires us to view this proposal with an eye beyond retail cryptocurrencies. We must also consider the core users of our markets, including farmers, refiners, pension funds, and other main street businesses that use futures to hedge price risk in the real economy.

When contemplating such transformative change, FIA encourages policymakers to consider the fundamental guiding framework articulated in President Biden's recent Executive Order on digital assets: same business, same risks, same rules. FIA believes the CFTC must analyze FTX's proposal against the important customer protections and risk management functions that registered FCMs currently provide the marketplace.

As agents for their customers, FCMs hold various regulatory responsibilities, including vetting customers on the appropriateness of these leveraged products, policing clients for money laundering, segregating customer funds, guaranteeing customer trades, holding significant regulatory capital against those trades, contributing to clearinghouse default funds, and agreeing to further assessments should the CCP default fund need replenishment. Today, U.S. registered FCMs contribute more than $15 billion to CCP default funds and hold an additional $175 billion of their own regulatory capital. This layer of financial resources backstops the potential default of customers and protects the markets and the wider financial system from a contagion event.

FIA believes there needs to be further analysis of the FTX risk model in extreme but plausible scenarios, especially for large commercial participants and other asset classes beyond retail cryptocurrencies. Given the model relies on continuous liquid markets that are open 24/7, questions remain around the market impact of auto-liquidation feature for close out of large positions in less-liquid markets. We must ensure that the model does not trigger a broader fire sale in the central price discovery market that harms hedgers and exacerbates further market disruption.

To conclude, FIA supports efforts to further advance real-time risk management in clearing and bring greater competition to the markets. The FTX proposal has advanced a healthy debate in our

industry. However, we believe that further analysis and information are needed on the FTX proposal, and we look forward to the deliberative process of the CFTC that will help bring additional clarity and information to this unique clearing model. Thank you, Mr. Chairman.

[The prepared statement of Mr. Lukken follows:]

PREPARED STATEMENT OF HON. WALTER L. LUKKEN, J.D., PRESIDENT AND CHIEF EXECUTIVE OFFICER, FUTURES INDUSTRY ASSOCIATION, WASHINGTON, D.C.

Chairman David Scott, Republican Leader G.T. Thompson, and Members of the Committee, thank you for the opportunity to testify about the U.S. derivatives market structure and the unique proposal set forth by FTX US.

I am President and CEO of the FIA, a leading global trade organization for the futures, options and centrally cleared derivatives markets. As someone who also served on the Commission for many years, I am proud of the CFTC's long history of supporting innovation and competition in the derivatives markets.

In fact, Congress wisely instructed the CFTC in its mission to, not only uphold strong protections for customers and police the integrity of the markets, but also "promote responsible innovation and fair competition" among market participants. In crafting this balanced mission, this Committee was careful in making sure innovation and competition were advanced *responsibly* and *fairly* without jeopardizing the integrity or financial stability of the markets or the protections afforded to customers.

Today, we are at an inflection point that requires us to carefully consider the benefits of an alternative clearing structure and ensure it does not compromise the battle-tested protections and checks of the existing structure afforded to customers and markets. The CFTC is now considering a proposal by FTX that would replace the traditional distributed risk clearing model that utilizes Futures Commission Merchants (FCMs) with a more automated and centralized one that does not utilize intermediation.

Specifically, the FTX direct clearing proposal would, for the first time, combine margined futures with near real-time margining, 24/7 auto liquidation of defaulting customers, and a self-funded CCP default fund without the benefit of FCMs underwriting customer risk.

It is important to point out that FTX's proposal would permit futures trading in any underlying asset class transacted by any type of customer, including commercial hedgers. This requires us to view this proposal with an eye beyond retail cryptocurrencies. We must also consider the core users of our markets, including farmers, refiners, pension funds, and other main street businesses that use futures to hedge price risk in the real economy.

When contemplating such transformative change, FIA encourages policymakers to consider the fundamental guiding framework articulated in President Biden's recent Executive Order on digital assets: Same Business, Same Risks, Same Rules. FIA believes the CFTC must analyze FTX's proposal against the many important customer protections and risk management functions that registered FCMs currently provide the marketplace.

As agents for their customers, FCMs hold various regulatory responsibilities including vetting customers on the appropriateness of these leveraged products, policing clients for money laundering, segregating customer funds, guaranteeing customer trades, holding significant regulatory capital against those trades, contributing their own "skin in the game" capital to the central counterparty ("CCP") default fund, and agreeing to further assessments should the CCP default fund need replenishment.

Today U.S. registered FCMs hold roughly $175 billion in regulatory capital that backstops their guaranty of customer trades and serves as a first line of defense against a more serious contagion event that could spread to a CCP and beyond. Additionally, these FCMs contribute another $15 billion to clearinghouse default funds that serves to incentivize careful risk management and distribute risk among highly capitalized institutions during a stressed market crisis.

FIA also believes there needs to be further analysis of the FTX risk model in extreme but plausible scenarios, especially for large commercial participants in other asset classes beyond retail digital currencies. Given the model relies on continuous liquid markets that are open 24/7, questions remain around the market impact of the auto-liquidation feature for the close-out of large positions in less liquid markets. We must ensure that the model does not trigger a broader fire sale in the cen-

tral price discovery market that harms hedgers and exacerbates further market disruption.

Conclusion

FIA supports the efforts of FTX to further advance real-time risk management in clearing and bring greater competition to our markets. Their proposal has advanced a healthy debate in our industry. However, we believe that further analysis and information are needed on the FTX proposal, and we look forward to the deliberative process of the CFTC that will help bring additional clarity and information to this unique clearing model.

The CHAIRMAN. Thank you, Mr. Lukken. And now Mr. Edmonds, please begin when you are ready.

STATEMENT OF CHRISTOPHER S. EDMONDS, CHIEF DEVELOPMENT OFFICER, INTERCONTINENTAL EXCHANGE, INC., ATLANTA, GA

Mr. EDMONDS. Thank you, sir. Chairman Scott, Ranking Member Thompson, Committee Members, I am Chris Edmonds, Chief Development Officer, Intercontinental Exchange, or ICE. I have responsibility for all of ICE's clearinghouses and risk teams. I appreciate the opportunity to appear before you today to discuss the important role of clearing and the pending FTX application at the Commodity Futures Trading Commission.

The U.S. is a global leader in capital and derivatives markets, enabling participants to hedge risk and manage their businesses. Throughout the market's history, there have been new and innovative technology-based ideas promising multiple efficiencies. ICE has a robust history of innovation. However, the adoption of new technology and processes comes with the potential risk for unintended consequences. Innovation cannot supersede the primary functions of futures markets for price discovery and hedging.

As articulated by the leadership at FTX, the company's technology risk management processes and proposed regulatory framework have been constructed to revolutionize clearing and address purported issues with the current offerings. ICE is fully supportive of using new technology to deliver more efficient markets. But as policymakers examine this application, they must remain mindful of the risk.

As this Committee is aware, years ago, executives from Enron stood in these halls before regulators offering new ideas as to how markets should operate. Under the current system codified by the Dodd-Frank Act, separately capitalized governed and regulated clearing organizations managed settlement of financial transactions executed by market participants typically via regulated clearing members. All of these participants serve important checks in the system against excessive leverage, new products that are not well-tested or appropriate for widespread use, and the introduction of unexpected counterparty risk.

ICE believes these independent stakeholders provide significant benefits to helping deliver market consensus. Regulated clearinghouses, working in conjunction with regulated exchanges and in most cases market intermediaries, increase stakeholder confidence in fair markets, transparent pricing, and fully understood settlement processes.

FTX plays a leading role in the markets for digital assets, and regulatory oversight will help lead to decision-making and risk

management practices that are balanced. However, we do have concerns with the approach FTX has proposed for this application. Rather than following global guidelines and existing regulations, FTX has requested a new set of rules not currently compliant with CFTC regulations and global standards and potentially sets dangerous precedents. FTX's application raises significant questions around risk management, financial resources, investors' protections, and the collection and safeguarding of margin on non-intermediate clearing model that today has significant participation.

ICE recommends the Committee explore the risks raised by us and others for the application and the potential market implications. Given my 25 years of experience in these markets, I am confident no Member of this Committee wants to learn of constituents losing their hedge protection because the market moved against them at 3:00 a.m. on a Saturday morning.

The current system is a pay-as-you-go system whereas the FTX application is a go-as-you-pay service, meaning participants automatically lose their position if the market moves against them without the ability to bolster their stake with additional margin. The upshot of these model differences has the potential to impact users of futures markets significantly and detrimentally.

This Committee should continue its globally recognized leadership in market structure when evaluating the proposal. Approval in its current form may lead other jurisdictions to challenge the pragmatic and principle-based approach the CFTC has championed.

ICE has embraced competition from our founding, and we do not believe there is a single model for clearing that is appropriate for all products and markets. ICE operates traditional intermediated clearing for futures exchanges and over-the-counter derivative markets, as well as non-intermediated clearing for certain energy products used by commercial and institutional market participants. In all cases ICE clearinghouses are compliant with global regulatory standards and CFTC rules as written today and did not require new CFTC rulebooks to be successful.

I appreciate this opportunity to appear before you today and look forward to answering any questions the Members of the Committee may have. Thank you.

[The prepared statement of Mr. Edmonds follows:]

PREPARED STATEMENT OF CHRISTOPHER S. EDMONDS, CHIEF DEVELOPMENT OFFICER, INTERCONTINENTAL EXCHANGE, INC., ATLANTA, GA

Introduction

Chairman Scott, Ranking Member Thompson, I am Chris Edmonds, Chief Development Officer for Intercontinental Exchange, or ICE. I appreciate the opportunity to appear before you today, as this Committee looks at the FTX US Derivatives ("FTX") request for an amended derivatives clearing organization ("DCO") registration order to permit clearing of margined products through a retail, non-intermediated clearing model.[1]

Clearing houses play a critical role in the financial markets that serve the needs of participants around the globe. Policy makers across the world, including this Committee, have an interest in safe and efficient markets. To further the common interest of well-functioning markets and well-regulated clearing houses, we appreciate the opportunity to participate in this hearing as it examines the FTX request

[1] Available at *https://www.cftc.gov/PressRoom/PressReleases/8499-22*.

to amend its DCO order to offer direct clearing to retail participants for margined derivative products.

Background

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

ICE has a successful and innovative history of clearing exchange traded and OTC derivatives across a spectrum of asset classes, including energy, agriculture and financial products. Today, ICE owns and operates six geographically diverse clearing houses that serve global markets and customers across North America, Europe and Asia. Each of these clearing houses is subject to direct oversight by local national regulators, often in close coordination and communication with other regulatory authorities with important interests, and subject to regulations reflective of the G20 reforms and IOSCO principles.

ICE acquired its first clearing house, ICE Clear U.S., as a part of the 2007 purchase of the New York Board of Trade. ICE Clear U.S. is primarily regulated by the CFTC and is recognized by ESMA and clears a variety of agricultural and financial derivatives. In 2008, ICE launched ICE Clear Europe, the first new clearing house in the UK in over a century. ICE Clear Europe clears derivatives in several asset classes, including energy, interest rates, equity and credit derivatives, and is primarily supervised by the Bank of England, in close cooperation with the CFTC, the SEC and ESMA. ICE Clear Credit was established as a trust company in 2009 under the supervision of the Federal Reserve Board and the New York State Banking Department and converted to a derivatives clearing organization (DCO) following implementation of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). ICE Clear Credit is primarily regulated by the CFTC and SEC and is also recognized by ESMA and clears a global set of credit default swaps on indices, single names and sovereigns. In 2017, ICE acquired ICE NGX as part of the sale of Trayport. ICE NGX operates a non-intermediated model for clearing of North American energy products and is regulated by the Alberta Securities Commission and the CFTC. ICE also operates ICE Clear Netherlands under the regulatory supervision of De Nederlandsche Bank, Autoriteit Financiële Markten and ESMA and ICE Clear Singapore which is overseen by the Monetary Authority of Singapore.

Clearing Houses Vital Role in the Derivatives Market

The risk-reducing benefits of central clearing have long been recognized by users of exchange-traded derivatives (futures) and the pre-existing regulatory framework and efficacy of the clearing model throughout even the most challenging financial situations made it the natural foundation of the financial reforms put forward over the past decade. Clearing has consistently proven to be a fundamentally safe and sound process for managing systemic risk. Observers frequently point to non-cleared derivative contracts as a significant factor in the broad reach and complexity of the 2008 financial crisis, while noting the relative stability of cleared markets.

As part of the increased use of clearing, clearing houses and market participants have worked to ensure that the clearing process is robust and resilient and supported by adequate financial, risk management, and operational resources. The Principles for Market Infrastructure (PFMI) represent the internationally agreed-to framework for achieving these goals and are intended to ensure that fundamental protections apply internationally and reduce the risk of regulatory arbitrage. National regulators in G20 jurisdictions have implemented the key aspects of the PFMIs into their regulatory frameworks. This process has set an appropriate standard across numerous jurisdictions for the regulation of a clearing house.

The FTX model raises significant questions around risk management, financial resources, investor protections and the collection of margin in a retail non-intermediated clearing model. Retail non-intermediated clearing substantially differs from both the traditional mutualized clearing model and a non-intermediated clearing model restricted solely to commercial and institutional participants. FTX's proposal eliminates sound risk management practices and many customer protections for retail participants, which are key features of the centrally cleared derivatives mar-

kets. FTX's proposed structure creates risk-taking incentives that may serve to increase, rather than reduce, the risk to market participants and the global financial system.

In addition, while FTX's current business focuses on digital assets, the proposed framework is not limited to digital assets. The proposed model significantly deviates from the current regulatory framework and the CFTC should evaluate the implications of these changes. If the FTX proposal is approved, clearing houses could apply this model to other markets such as traditional agriculture or energy commodities. The CFTC must consider the implications of the proposed model as a policy matter for all products and markets. Innovation cannot supersede the primary functions of futures markets for price discovery and hedging. The FTX proposal raises many questions and concerns. As such, the CFTC should use its rulemaking process to propose and fully vet any necessary modifications to the current rules to fit a retail non-intermediated market structure.

In addition, while FTX's current business focuses on digital assets, the proposed framework is not limited to digital assets. The proposed model significantly deviates from the current regulatory framework and the CFTC should evaluate the implications of these changes. If the FTX proposal is approved, clearing houses could apply this model to other markets such as traditional agriculture or energy commodities. The CFTC must consider the implications of the proposed model as a policy matter for all products and markets. Innovation cannot supersede the primary functions of futures markets for price discovery and hedging. The FTX proposal raises many questions and concerns. As such, the CFTC should use its rulemaking process to propose and fully vet any necessary modifications to the current rules to fit a retail non-intermediated market structure.

Cross-Border Regulation and Equivalence

Cross-border oversight and regulatory deference to home country regulators is essential to well-functioning markets. The CFTC and global regulators have worked together to implement relevant laws, standards, and policies that further the goal of financial stability and resilience, while minimizing supervisory duplication and conflict. Global regulators have recognized third-country clearing houses as equivalent allowing market participants to continue accessing global markets. ICE does not believe the FTX proposal fully satisfies the PFMIs and Commission regulations and as such, the CFTC should carefully consider the cross-border implications of approving a clearing model that fails to satisfy the PFMIs. Other jurisdictions including the European Union ("EU") and the United Kingdom ("UK") rely on compliance with the PFMIs to determine whether a jurisdiction has comparable or equivalent regulation. The current recognition of U.S. clearing houses in the EU and UK is based on this determination of equivalence. It is critical that any action by the CFTC not jeopardize the existing foreign equivalence determinations applicable to U.S. clearing houses.

Current Regulatory Framework

The FTX proposal raises significant questions regarding compliance with the PFMIs and CFTC regulations. Specifically, the FTX proposal does not fully meet PFMI standards and CFTC rules for credit risks, sufficient financial resources to cover participant exposure, liquidity risks, default management, governance, and customer protections. Under the FTX proposal, the clearing house does not evaluate and monitor the credit risk of its participants. FTX does not have credit standards for participants nor are participants required to meet any minimum capital or asset requirements. The clearing house does not conduct any due diligence on a participant's ability to perform its obligations and the FTX proposal does not indicate that FTX would review individual participants financial reports. The clearing house would solely rely on margin provided by the participant and the automated close-out methodology. This approach removes a fundamental protection existing in other clearing models where the clearing house can look to the financial strength of the participants in addition to the posted margin. Moreover, the proposed auto-liquidation process would manage capital-related risks other than through participant capital requirements, as required.

Moreover, there are fundamental differences between the traditional clearing house model and the FTX model related to the treatment of losses in a portfolio. Currently, clearing houses operate a "pay as you go" model, meaning losses are settled at least once a day. This model allows participants to maintain their positions notwithstanding negative market moves. Conversely, the FTX model is a "go as you pay" model. In this model, when a participant's collateral is eroded below a prescribed threshold, FTX liquidates the position and the participant's participation is stopped. The FTX participants lose their positions when the market moves against

them, and they are liquidated at adverse prices. ICE notes the risks to the market and other participants when a clearing house is forced to automatically liquidate and the potential for a cascading downward spiral, especially in relatively illiquid markets.

In addition, the financial resources supporting the clearing house are key to the management and mitigation of credit risk and to ensuring the safety, soundness and robustness of the clearing system. The cover-1/cover-2 standard is designed for clearing arrangements with institutional clearing members. This standard, in addition to the FTX proposed cover-3 alternative, is not suitable for a retail non-intermediated clearing model based on the large number of small retail market participants. Such an approach would include a small proportion of a DCO's exposure to a participant default against which to make a reasoned assessment of appropriate financial resource requirements. Nonetheless, it is essential that each clearing organization be subject to a robust financial resource standard—particularly when the participants at risk of a default by the clearing house are individual retail investors.

Moreover, FTX proposes to allow itself to use customer funds for FTX operations and replace the funds at some point in the future. The FTX proposal states that in some cases margin provided by users may be used for liquidity purposes or haircut due to losses caused by other users. This approach is inconsistent with the approach taken by other clearing houses in default management where margin of a non-defaulting member is not subject to use in the default by another member. It is also inconsistent with the general principles under Section 4d of the Commodity Exchange Act and CFTC regulations which prohibit funds of one customer to be used to cover obligations of another.

Comparison to Other Non-Intermediated Models

ICE has significant experience with non-intermediated clearing arrangements through its ICE NGX clearing house. ICE NGX operates a sophisticated commercial market, offering clearing services to producers, marketers and utilities in the physical energy markets of North America. Commercial and institutional participants utilize the ICE NGX markets to manage risk associated with a physical energy business. ICE NGX has been clearing physical energy products for over 20 years and has a history of managing volatility and participant defaults. ICE NGX has a risk profile that differs substantially from the FTX proposal and has numerous features and protections that are not present in the FTX proposal. ICE NGX participation is restricted to commercial market participants that meet minimum financial requirements. ICE NGX can also call for additional collateral and there is no auto-liquidation function. Participants in cleared physical markets are also required to have the capability to make and take delivery of underlying energy commodities, which discourages pure speculative trading firms from participating. The ICE NGX commercial non-intermediated model includes robust risk management and financial protections that comply with CFTC regulations and the internationally-agreed standards applicable to clearing houses. The FTX proposal does not share many of these features and raises issues that differ from those of existing institutional non-intermediated arrangements.

Conclusion

ICE has always been, and remains, a strong proponent of open and competitive markets with appropriate regulatory oversight. As an operator of global futures and derivatives markets, ICE understands the importance of ensuring the utmost confidence in financial markets. To that end, the FTX proposal raises significant policy issues as well as questions about compliance with the PFMIs and Commission regulations that warrant further analysis. The approval of the FTX proposal could undermine the internationally agreed to framework and Commission regulations intended to achieve the goal of a robust and resilient clearing process.

Mr. Chairman, thank you for the opportunity to share our views with you. I would be happy to answer any questions you and Members of the [Committee] may have.

The CHAIRMAN. Thank you. And now, Mr. Perkins, you are recognized for 5 minutes.

STATEMENT OF CAPT. CHRISTOPHER R. PERKINS, (RET.), U.S. MARINES; MANAGING PARTNER AND PRESIDENT, COINFUND MANAGEMENT LLC, NEW YORK, NY

Mr. PERKINS. Chairman Scott, Ranking Member Thompson, Members of the Committee, and distinguished guests, thank you for giving me the opportunity to testify before this Committee

today. It is an honor and a privilege to share my perspective on how America can embrace innovation and the promise of web3 to reinforce our leadership in the global financial system while doing so responsibly in a manner that protects investors and manages risk.

I serve as President of CoinFund Management LLC, a web3-focused registered investment advisor founded in 2015. Prior to this role, I served as a global co-head of the futures, clearing, and foreign exchange prime brokerage businesses at Citi and also served on the executive committee and board of directors of the FIA. My views on risk management were initially shaped on the battlefields in Ar-Ramādī, Iraq, where I had the honor of serving as a United States Marine. I subsequently transitioned to Lehman Brothers where I witnessed firsthand the perils of unregulated, highly speculative derivatives markets that brought the global financial system to its knees.

For over a decade that followed, I worked closely with global regulators and policymakers to implement reforms to the derivatives industry and in the process worked with my team to build one of the most prominent intermediary derivatives businesses in the world. I see the cultivation of deep, liquid, accessible and secure derivatives markets as an important cornerstone of our economy and an essential pillar of effective risk management.

The arrival of web3 could potentially transform the global economy into a more creator-led, open, inclusive, and democratic ecosystem, aligning perfectly with shared, bipartisan, American values. With principles-based, transparent, and predictable policy and regulation, the U.S. will empower entrepreneurs to build and innovate onshore, which will fuel the economy, catalyze job creation, and reinforce U.S. leadership across the global financial markets.

Like it or not, the risk-management realities and challenges of digital asset markets that function 24 hours a day, 7 days a week have arrived. According to a recent poll by *NBC News,* one in five Americans have invested in, traded, or used cryptocurrencies. The cryptocurrency market that is emerging is a more inclusive one with communities of color leading user adoption. Today, these communities can legally take risk via exposure to a vast array of spot digital assets, but their ability to hedge that risk through the derivatives market is extremely limited because the legacy intermediated derivatives market structure is unprepared to support the risk-management realities of the digital asset class.

However, the FTX proposal to allow direct access derivatives clearing powered by real-time risk and collateralization engines promises to bring much-needed innovation to U.S. digital asset derivative markets. From my perspective, the FTX proposal, if adopted, would reduce systemic risk through real-time collateralization and risk management, offer industry participants the ability to more dynamically hedge digital asset risk, introduce incremental competition and choice which will facilitate a more inclusive, cost-effective marketplace, and revitalize U.S. digital asset derivative markets at a time when leadership and innovation have migrated overseas.

Certainly, there are risks to deploy new technologies, and any proposed model must prove that it can meet and exceed the same

extreme but plausible stress scenarios applied to legacy clearinghouses via existing regulation. Moreover, appropriate disclosures must ensure that industry participants clearly and transparently understand the unique nuances and risks of participating in a direct clearing model, including the risk of liquidation.

Finally, guardrails to dissuade excessive speculation as they exist today in traditional futures markets should continue to be considered by regulators. Appropriately implemented, the direct model proposed by FTX could catalyze a new era of responsible innovation and unlock new capabilities to hedge risk at a time when, by unofficial estimates, more than 90 percent of crypto derivatives activity have migrated overseas.

In conclusion, I support FTX's application to offer a direct clearing model for digital asset derivatives. Direct access will foster a more inclusive and liquid derivatives market in the United States, finally giving investors the ability to access derivative markets to hedge their risk. With the appropriate regulatory guardrails in place, this model will result in a more resilient, efficient, and dynamic system. I look forward to your questions today, and thank you.

[The prepared statement of Capt. Perkins follows:]

PREPARED STATEMENT OF CAPT. CHRISTOPHER R. PERKINS, (RET.), U.S. MARINES; MANAGING PARTNER AND PRESIDENT, COINFUND MANAGEMENT LLC, NEW YORK, NY

Chairman Scott, Ranking Member Thompson, Members of the Committee, and distinguished guests, thank you for giving me the opportunity to testify before this Committee today. It is an honor and a privilege to share my perspective on how America can embrace innovation to reinforce our leadership in the global financial system while doing so responsibly, in a manner that protects investors and thoughtfully manages risk.

I serve as President of CoinFund Management LLC, a web3-focused registered investment adviser founded in 2015. Prior to this role, I served as Global Co-head of the Futures, Clearing and Foreign Exchange Prime Brokerage (FXPB) businesses at Citi and also served on the Executive Committee and Board of Directors of the FIA. I am the co-founder of Veterans on Wall Street (VOWS) and more recently, Veterans in Digital Assets (VIDA), an initiative designed to help transitioning military veterans and their spouses find fulfilling careers in the web3.

I began my professional career in the United States Marine Corps, where I had the honor of serving our country on the battlefield in Ar-Ramādī, Iraq. The violent urban warfare I experienced left me with a renewed perspective, deep sense of purpose and a thorough understanding of risk management. I subsequently transitioned to Lehman Brothers where I witnessed firsthand the perils of unregulated, highly speculative derivatives markets that brought the global financial system to its knees. For over a decade that followed, I worked closely with global regulators and policymakers to implement reforms to the derivatives industry, and in the process, worked with my team to build one of the most prominent intermediary clearing businesses in the world. My unique background blends deep experience in derivatives, market structure and risk management, coupled with "sell side" and "buy side" market perspectives across traditional finance and digital asset ecosystems. I see the cultivation of deep, liquid, accessible and secure derivatives markets as an important cornerstone of our economy and an essential pillar of effective risk management.

From my perspective, the United States needs to make a choice. We can embrace new technologies, like blockchain, to unlock responsible innovation and inclusion across finance and risk management, or we will risk being left behind by those that do. With principles-based, transparent and predictable policy and regulation, the U.S. will empower entrepreneurs to build and innovate onshore, which will fuel the economy, catalyze job creation, and reinforce U.S. leadership across the global financial markets.

Recently, President Biden's Executive Order (EO) on *Ensuring Responsible Development of Digital Assets* outlined a comprehensive policy approach to balance the risk and promise of digital asset technologies.

Bipartisan themes highlighted in the EO include:

- Protect U.S. and global financial stability and mitigate risk
- Promote leadership in technology and economic competitiveness to reinforce U.S. leadership in the global financial system
- Promote equitable access to safe and affordable financial services
- Support technological advances and ensure responsible development of use of digital assets

Applying these themes to digital asset derivative markets, it is clear that our legacy, intermediated derivatives market structure is unprepared to support the risk management realities of this new asset class, leaving market participants with few effective and efficient choices to hedge risk. However, the FTX proposal to allow direct access, margined derivatives clearing, powered by real time risk and collateralization engines, promises to bring much needed, responsible innovation to U.S. digital asset derivative markets, allowing it to compete globally by aligning with the shared, bipartisan ideals outlined above.

From my perspective as a former head of one of the largest derivatives intermediaries, or Futures Commission Merchants (FCMs), in the world, the FTX proposal, if adopted, would:

- Reduce systemic risk in a U.S. derivatives industry that has grown increasingly concentrated and chronically under-collateralized—largely due to operational shortfalls,
- Offer industry participants the ability to more dynamically hedge digital asset risk,
- Introduce incremental competition and choice which will facilitate a more inclusive, cost-effective marketplace, and
- Revitalize U.S. digital asset derivative markets at a time when leadership and innovation has migrated overseas.

Certainly, there are risks to deploying new technologies and any proposed model must prove that it can meet and exceed the same "extreme but plausible" stress scenarios applied to legacy clearing houses via existing regulation. Moreover, appropriate disclosures and customer protections must be implemented to ensure that industry participants clearly and transparently understand the unique nuances and risks of participating in a direct clearing model—including the risk of liquidation (which is a risk that all current futures participants face today). Finally, guardrails to dissuade excessive speculation—as they exist today in traditional future markets—should continue to be considered by regulators. However, I believe that the impact of not embracing innovation and technology is a far greater risk to our economic future.

Like it or not, the risk management realities and challenges of cryptocurrency markets—powered by blockchain technology—that function 24 hours a day, 7 days a week, have arrived. According to a recent poll by NBC News, one in five Americans have invested in, traded or used cryptocurrencies.[1] The cryptocurrency market that is emerging is a more inclusive one. A survey by Ariel Investment and Charles Schwab Corp revealed that 38% of Black investors under 40 years old own digital tokens, compared with 29% for their White counterparts.[2] Today, these communities can legally take risk via exposure to a vast array of spot digital assets, but their ability to hedge that risk through the derivatives market is extremely limited due to the unavailability of FCMs and lack of available products. Unfortunately, legacy "batch" margining technology and existing processes simply cannot keep pace, leaving intermediaries with risk and capital challenges that impede their ability to support this rapidly emerging asset class.

The FTX proposal will give industry participants new choices and new capabilities to properly manage risk through hedging by unlocking regulated derivatives across the digital asset ecosystem. Moreover, the FTX proposal will cultivate a true "de-

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[1] Thomas Franck, "One in five adults has invested in, traded or used cryptocurrency, NBC News poll shows," *CNBC,* March 31, 2022.

[2] Kelsey Butler, "Young Black Americans Wary of Stock Market Are Turning to Cryptocurrency," *Bloomberg,* April 5, 2022.

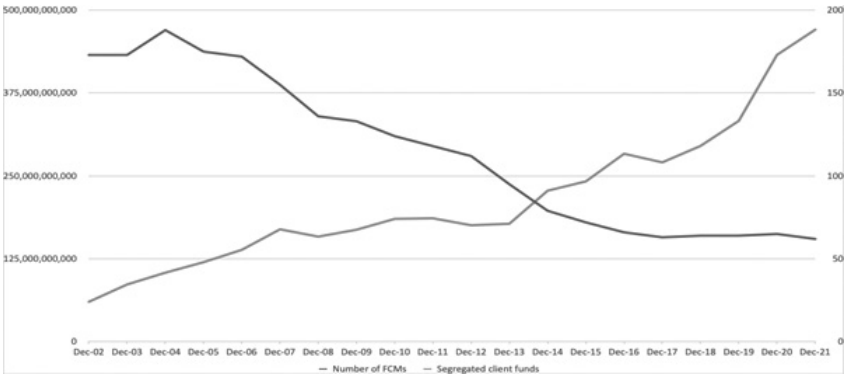
faulter pays"[3] clearing model, which secures the system through real time risk management, where risk is mitigated with the collateral of risk takers and the clearing house, itself. Appropriately implemented, the direct model proposed by FTX could catalyze a new era of responsible innovation across derivatives markets and unlock new capabilities to hedge risk at a time when, by unofficial estimates, more than 90% of crypto derivatives activity has migrated overseas.

In the aftermath of the Global Financial Crisis, the *G20*[1] doubled down on the central clearing model by committing to transition the ~$700 trillion OTC derivative markets into this legacy futures market structure framework. Without scalable technology that could be used to distribute and decentralize risk, policy makers had few alternatives—and instead chose a highly centralized and highly regulated, intermediated market structure where clearing members, known as FCMs, guaranteed the financial performance of their clients and the ecosystem itself.

Under this model, the clearing house is responsible for calibrating risk management standards of the system and must ensure that sufficient financial resources are collected under "extreme but plausible" scenarios to withstand market shocks. To meet collateralization shortfalls, clearing houses form a "waterfall" in their rulebooks and require their members to post capital to a "default" fund. To the extent a member fails to meet its obligations during an insolvency, the clearing house may use that member's default fund contribution to offset collateral shortfalls. However, if deficits remain after applying these funds, the CCP will utilize the other members' contributions (after exhausting limited proprietary capital known as "skin in the game") even when those members may have nothing to do with the default. Though market participants universally agree that initial margin levels should be sufficiently calibrated such that a "defaulter pays" model prevails, the mutualization and socialization of risk of the existing paradigm is real. As recently as 2018, clearing members were assessed millions in *losses*[2] after a power trader failed to meet his obligations on NASDAQ OMX.[4]

Though one would think that FCM businesses would thrive under a regulatory mandate, the number of FCMs has materially *decreased* over the last 2 decades from a high of 188 in 2004, to just 61 by 2022. Meanwhile, segregated client assets have skyrocketed, rising from about $60bn in 2002 to more than $470bn today.

Figure 1: Segregated Client Funds[5] *versus* FCM Count (2002–2021)



The obvious result of these two trends is concentration of risk, leaving market participants with fewer choices to access futures markets to hedge their risk. Today, the top five members control the preponderance of the segregated collateral pool.

This consolidation and subsequent risk concentration have been caused by a number of factors:

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[3] "Defaulter Pays" is when a defaulter's own contributed collateral is sufficient to cover losses during a liquidation scenario.

[1] *http://www.g20.utoronto.ca/2009/2009communique0925.html*.

[2] *https://www.reuters.com/article/us-nordic-power-nasdaq/nordic-power-traders-loss-costs-nasdaq-and-members-114-million-euros-idUSKCN1LT28G*.

[4] Lefteris Karagiannopoulos, "Nordic power trader's loss costs Nasdaq and members 114 million euros," *Reuters,* September 13, 2018.

[5] Segregated Funds include segregated futures, foreign futures and cleared swaps. Source: CFTC.

1. Regulations including those introduced by the *Dodd-Frank Wall Street Reform and Consumer Protection Act* resulted in material fixed costs that uniformly apply to all clearing members, regardless of size or activity level.
2. A loss of interest income due to macroeconomic and capital optimization factors related to **Basel**[3] capital rules, including the Supplemental Leverage Ratio (SLR), negatively impacted FCM economics.
3. Increased third party fees, including fees to maintain legacy technology infrastructure further suppressed FCM profitability.
4. With sizable fixed costs and low profit margin, the only solution was to drive scale by acquiring market share. Smaller FCMs, unable to achieve the scale needed to achieve profitability, simply could not compete with larger players and shuttered their businesses.

The FCM community has been left in a bind. Dependence on decades old, notoriously archaic technology that is only capable of delivering slow and lumbering batch cycles has resulted in a mismatch of collateral flows and an accumulation of risk. Coupled with initial margin models that often fail to sufficiently cover this concentrated risk, the legacy clearing model leaves FCMs facing the potential of material stress losses at a time when profitability is challenged at best. The legacy derivatives collateralization cycle functions as follows:

1. Client executes a derivative (and the FCM guaranties against the risk of default) on trade date "T"
2. Clearing house calls FCM for collateral (typically on T or early (~2 a.m.) on T+1)
3. FCM issues margin call (typically before 10am, T+1)
4. Clients pay margin obligation by the end of the day (T+1)

During periods of stress, it is common for clearing houses to justifiably call their members for incremental intraday collateral (which generally must be met in 1 hour according to clearing house rules), leaving unsecured FCMs scrambling to recoup collateral from their clients, often an impossible task. Unfortunately, this laborious process simply does not reconcile with the speed and volatility of crypto-derivative markets.

Against the backdrop of these operational shortfalls, acute under-collateralization continues to plague FCMs. Margin breaches are defined when intraday price movements cause the actual marked-to-market exposure in the account of a clearing member to exceed the initial margin held. Based on public *statistics,*[4] the derivatives markets have experienced thousands of margin breaches in recent years, including a $2.01bn margin breach in Q1 2021.[6] Volatile markets often cause these breaches, leaving FCMs unsecured and undercompensated for the risk they assume from their clients.

In an era where profitability requires scale and scale attracts meaningful risk, leading to questionable financial returns, FCMs are left in a predicament. Smaller clients, who do not offer scale and only transact to hedge a few times per year, are either left on the sidelines unable to find an intermediary or are subject to substantial minimum fees, effectively pricing them out of the market. For most FCMs, the scalable clearing of digital asset derivatives—even if clearing houses offered comprehensive product coverage—is out of the question because the accumulation of risk due to their batch processes cannot keep pace with 24 hour, volatile cryptocurrency markets. Moreover, Basel regulatory capital *proposals*[5] and internal risk limits leave bank FCMs simply unable to expand into this new asset class, leaving clearinghouses with little incentive to innovate. For this reason, it's no surprise that the vast preponderance of digital asset derivatives activity has largely migrated overseas in markets where there is no requirement for intermediaries.

While legacy FCMs continue to retrench, a new model is emerging that could revitalize the domestic derivatives industry, especially for digital asset derivatives, and give U.S. persons the risk management capabilities they deserve. New technologies now enable near real time risk management and collateralization capabilities—without the need for an intermediary. Calibrated correctly and fairly, a non-intermediated market structure can deliver a true "defaulter pays" model, by solely relying

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[3] *https://www.risk.net/regulation/5307456/repeal-cem-reform-sa-ccr.*

[4] *https://www.fia.org/margin-breaches#:~:text=This%20visualization%20shows%20data%20on,held%20against%20that%20member%20account.*

[6] Alessandro Aimone, "GameStop frenzy triggered $2billion margin breach at OCC," *Risk Magazine,* July 27, 2021.

[5] *https://www.bis.org/bcbs/publ/d519.pdf.*

on the assets of the risk takers and clearing house, itself, eliminating legacy conflicts of interest, socialized losses and ushering in a new era of responsible innovation.

End-users stand to benefit. Incremental competition will introduce new choices and capabilities to hedge risk, while lowering costs. The operational inefficiencies of the current model are costly (*e.g.,* contingent liquidity funding due to the collateral timing mismatch is expensive), and the direct model will eliminate intermediary fees altogether. In theory, real time risk management should also unlock capital efficiencies across the system, since more collateral is needed to secure and backstop a system that depends on a daily batch process to collateralize—especially for volatile markets. Finally, billions of dollars in member capital, which would need to sit idly in default funds socializing risk in the system, could be redeployed back into the economy because in the direct model, the responsibility for collateralization sits with the risk takers, and is supported by the resources of the clearing house, itself.

Competition is healthy for markets, and I believe that the direct model offered by FTX's proposal will actually benefit the legacy FCM community. In a world where direct and intermediated markets coexist, FCMs will be able to identify new opportunities to deliver operational and capital efficiencies for their clients, perhaps providing agency services to prevent liquidations, while continuing to offer high touch service to top institutional clients.

In conclusion, I fully support FTX's application to offer a direct clearing model for digital asset derivatives. It is time for the United States to revitalize its derivatives markets by embracing the promise of new technologies to reduce systemic risk through real time and surgically precise collateralization. Direct access will foster a more inclusive and liquid derivatives market in the United States finally giving investors the ability to access derivatives markets to hedge their risk. With the appropriate regulatory guardrails in place, this model will result in a more resilient, efficient and dynamic system.

CHRISTOPHER R. PERKINS,
President, CoinFund.

The CHAIRMAN. Thank you very much, and I want to thank all five of our very distinguished witnesses on the panel for your excellent testimonies.

At this time, Members will be recognized for questions in order of seniority, alternating between Majority and Minority Members. You will be recognized for 5 minutes each in order to allow us to get as many questions in as possible. And as I always say, please keep your microphones muted until you are ready to ask your question so that we can minimize background noise.

I now recognize myself for 5 minutes. We all know that cryptocurrency is a volatile market. We realize that. We witnessed what has been happening to them over the past few days on the markets. I want to ask Mr. Lukken, Mr. Duffy, and Mr. Bankman-Fried this question. And then, Mr. Edmonds, I have a question for you as well.

First, to the three of you, Mr. Lukken, Mr. Bankman-Fried, and Mr. Duffy, how in your own words is this proposal not making an already risky market much riskier for the customer, particularly in light of what we are seeing and, as several of you pointed out, the emergence of an eagerness to get into this market from the public? Mr. Duffy, would you start off?

Mr. DUFFY. Sure, I would be happy to start. How is this adding more risk to the system? Well, the gentleman at the end of the table said that 90 percent of the crypto market is going overseas. I would assure you that 90 percent of the losses are also going overseas with them and that is not a bad thing from our perspective of our participants being protected from this.

Listen, these asset classes are completely different, and I am not here to discuss the value of crypto one way or another. I think what is important is the structure that they operate under. The proposal as put forth is fraught with dangers. The traditional clearing model that we deploy at CME Group is something that we are passionate about. And the gentleman referred to the derivatives industry cratering in 2008 and what caused that. I assure you, it wasn't listed derivatives industry. It was levered bilateral derivatives that caused that collapse. So the risk associated with these products, if not properly regulated, could be catastrophic not only for the risk of their products but other products that this application could be applied to, especially every asset class that CME trades. So I have grave concerns.

I could talk for hours on this topic, Mr. Chairman. I will reserve my time.

The CHAIRMAN. Yes.

Mr. DUFFY. But I think as you deploy this against other asset classes, that is where the real risks come in.

The CHAIRMAN. Thank you. Mr. Lukken, please.

Mr. LUKKEN. Well, as far as customer protection, I mean, the FCM over the years has played a critical role in our ecosystem of making sure that customers are protected, their funds are segregated, that they are guaranteeing those funds, they are holding capital in case there is a default. So we have this layer of protection, as was noted, that helps protect customers that exist that is being taken out of the system.

So, yes, I think FTX is making the argument that they can replicate that in other ways through the DCO application, but we have strong views that there is a reason that FCMs help to compartmentalize risk away from the CCP. Oftentimes, they are holding the capital to try to—like a ship. They may be taking on water, you close the watertight hatch, right, to make sure the rest of the ship does not go down.

The CHAIRMAN. Right.

Mr. LUKKEN. We think that diversified risk that the FCM provides is a helpful component of preventing a systemic event and helping protect customers.

The CHAIRMAN. Okay. Thank you so much. And now, Mr. Bankman-Fried?

Mr. BANKMAN-FRIED. Thank you. I think that this would help make cryptocurrency markets less volatile and less risky for exactly the reasons that you guys have pointed out. The fact that there is no Federal oversight of them today is not good, and providing that Federal oversight with licensed cryptocurrency derivatives exchanges would help ensure that they do meet the standards and safety that we expect.

And I will also say that, as was referenced, financial crises can be caused by unlisted, untracked contracts done in a bespoke manner where there is no central clearing. That is another reason that we are excited to bring this under CFTC jurisdiction with CFTC oversight of the clearinghouse.

The CHAIRMAN. Well, thank you. I just have a question to Mr. Edmonds. Could you comment, Mr. Edmonds, on how the clearinghouse model proposed by FTX stands up to international regulatory

standards such as those required to maintain equivalency with the EU and the UK markets?

Mr. EDMONDS. Mr. Chairman, the EU and the UK both have made the statement if it is the same risk, it is the same rules. And so I believe what you are asking for is you are asking me to determine what happens if the application is approved under the current rules. We—and Mr. Duffy has said this in his testimony—don't believe it can be approved in its current form under the current rules, so we would get to a point where it is not the same rules for the same risk. And I think that is the concern of the international community.

The CHAIRMAN. Thank you very much. And now I recognize the Ranking Member, the gentleman from Pennsylvania, my friend, Mr. Thompson.

Mr. THOMPSON. Mr. Chairman, thank you. Thank you to all of our witnesses.

Mr. Bankman-Fried, thank you for speaking with us today regarding your proposal that is before the CFTC. And I know the CFTC's comment period closed yesterday and it is holding a roundtable in a couple weeks. And its experts will give careful consideration to all the information provided. I appreciate you taking the time to provide some additional color on your proposal and to address some of the concerns expressed by some market participants. Could you please tell us why the markets should deviate from the well-tested approach to clearing employed at CME or ICE, for this virtually unknown approach and why take the risk?

Mr. BANKMAN-FRIED. Thank you. So, first of all, I think that there should be diversity of risk models allowed so long as they are all deemed suitable and consistent with regulations by the CFTC. I personally believe that our application is consistent with the current rules and regulations of the CFTC, that there is no required rulemaking or changes for it, and that should the CFTC deem it to be appropriate and then it would not require any changes.

I would also like to say, in terms of why I think this is worth doing—and again, I don't think that we should be banning other risk models here. I don't think we should be stopping other exchanges from being able to operate. I think we should have healthy competition here. I think that it has numerous advantages. In our risk model the collateral is held directly at the clearinghouses, the collateral for all the positions. There is CFTC oversight of that collateral, and it is guaranteed to be there to not be used for anything else, to be segregated, and that is a difference with traditional models. It provides an extra layer of security and guarantee of the assets backing these positions.

I also think that having a faster risk model is appropriate for digital assets. This means that rather than having to choose between liquidating a position too early out of fear of what could happen over the next 2 days or exposing yourself to systemic risk like we saw with LME, that the risk model can make a real-time, more precise judgment about the health of the position. I think both of those are going to be healthy, and I think they particularly fit the digital asset ecosystem.

I will note that we do not have any plans to launch nondigital asset contracts anytime soon through this model. And I think those

are both advantages. I think the equitable access is an advantage. I think the open and transparent market is an advantage. I think that all of those have real advantages. And again, I don't believe that this is inconsistent or new from the perspective of the rules and regulations that it would require, and many of the people in the industry, including many of those on this panel today, are currently listing products with many of these properties.

Mr. THOMPSON. Okay. Thank you. Mr. Perkins, in your testimony you highlight some of what you perceive as inefficiencies in the existing intermediated clearing approach. Besides a wholesale adoption of the FTX approach to clearing, what aspects of their proposal do you think today's clearinghouses should consider adopting?

Mr. PERKINS. Thank you, sir, for the question. In today's model there is a mismatch between 24 hour/7 days markets of cryptocurrency with the way we collateralize today in the futures markets. So essentially clients put on risk, we meet those obligations to the clearinghouse immediately, and then we have to wait to the following day to receive that collateral back from our clients. That doesn't reconcile with a highly volatile market that is moving, and so therefore, we are much better positioned from a systemic risk perspective if we are able to meet that collateralization in real time.

And so the inefficiency that I am highlighting is the inefficiency of collateralization today that the FTX model addresses. And frankly, I don't see a way that the current intermediated model can deliver inclusion and provide services for crypto derivatives because of this collateral mismatch.

Mr. THOMPSON. Thank you. Mr. Edmonds, in your testimony you noted that innovation cannot supersede the primary functions of futures markets for price discovery and hedging, but even today some innovations, most take for granted like electronic order books, algorithmic trading. My question is what is the line between bad innovation and good innovation?

Mr. EDMONDS. Well, I think the bright line is where does it fit within the regulatory construct? And the markets look for certainty at the end of the day. Users of the markets look for certainty at the end of the day. And so having potentially two standards that may develop over time creates uncertainty in the market. And I think if you look to some of the volatility around the crypto world as it sits today, it is a lack of certainty of what happens in different jurisdictions and how folks review that. So for me it is about how do you divide the world of regulation to make sure that those who are going to be in the game understand the rules of the game at all times.

Mr. THOMPSON. Good. Thank you. Thank you to all the witnesses and thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Ranking Member.

And now the gentlewoman from North Carolina, Ms. Adams, who is also the Vice Chair of the Committee on Agriculture, is recognized for 5 minutes.

Ms. ADAMS. Thank you, Chairman Scott, Ranking Member Thompson, for hosting the hearing today. Thank you to the witnesses. I appreciate all of your diligence here. I want to thank the committee staff.

I have heard many interesting perspectives on cryptocurrency today. Some say it needs to be defined before it is regulated, crypto or security or derivatives. Crypto, they also say, does it need an independent financial regulator or is the existing Commission sufficient? So let me ask Mr. Lukken. Your organization, the Futures Industry Association, represents over 80 percent of futures commission merchants today. If accepted, FTX's application would alter the role of U.S. registered FCMs proposing leverage without intermediaries. Chair Behnam has opened the floor for discussions on crypto derivatives. So what will happen if the model is applied to other commodity markets, Mr. Lukken?

Mr. LUKKEN. Well, I have indicated that it needs further analysis because it is uncertain whether the customer protections that are afforded to commercial hedgers would be the same under this model. In addition, I think that the risk model, which is used to auto-liquidating small retail cryptocurrency products, once you get into large commercial hedgers that need to get into our markets and hold large positions to make sure that their agricultural products are hedged, that they are managing price risk, trying to auto-liquidate those types of positions potentially could have disruptive effects on the marketplace and not off market but those other positions will have it in the central marketplace. So again, we want to understand better how this might work for commercial hedgers. It is one thing for a snake to swallow a mouse and digest it. It is another thing for a snake to swallow a pig. It is going to have a different——

Ms. ADAMS. Okay. So let me move on. I have some more questions. But let me just ask you and follow up. Will FTX and similar players be expected to shoulder the systemic risk that clearinghouses were traditionally responsible for? Mr. Lukken?

Mr. LUKKEN. I am sorry, repeat the question.

Ms. ADAMS. Will FTX and similar players be expected to shoulder the risks that clearinghouses were traditionally responsible for?

Mr. LUKKEN. Yes, and that is one thing we like about the FTX proposal is they have put up their own skin in the game into their default fund and they are willing to take that on. In doing so, however, they have wiped out a significant portion of the FCM capital that is held against the positions as well.

Ms. ADAMS. Okay. So let me ask Mr. Bankman-Fried. If your company's proposal is accepted, can you tell us how you plan to protect consumers who use your platform?

Mr. BANKMAN-FRIED. Absolutely. Thank you, Congresswoman. We, to start off with, have all of the customer protections that are typically found in DCOs and DCMs in addition to all of the protections that are typically found in FCMs because we acknowledge that because there is a disintermediated option, we have a duty to provide all of those controls. And so we have done deep analyses both of the rules and regulations and of existing FCMs to ensure that we have similar sets of transparency, of suitability, of disclosures.

And, when you bring up the anti-financial crimes perspective, we are subject to Bank Secrecy Act level KYC on FTX U.S. derivatives as well and have a standard know-your-customer anti-money-laundering policy both for users and for all deposits and withdrawals

of both cryptocurrencies and fiat currencies that go through the platform.

Finally, we will be providing transparency around any assets, any digital assets that we do list on the platform in line with what we would expect would be helpful for consumers going far above what the current regulations require because we think that that is appropriate.

Ms. ADAMS. Okay. Thank you. Mr. Duffy, let me ask you. We cannot doubt that the skyrocketing growth seen in decentralized finance is linked to its accessibility. And so as an exchange, FTX offers equitable access and a current model that gives us data for free. What is your philosophy on that sort of user-friendliness, and how does your company prioritize financial inclusion?

Mr. DUFFY. Yes, it is an interesting question and Mr. Bankman-Fried is commenting on things that are outside of his application so I can only comment on his application. And when we talk about——

Ms. ADAMS. I have 3 seconds.

Mr. DUFFY. Well, then——

Ms. ADAMS. I am about out of time.

Mr. DUFFY. We have equitable access to everybody, ma'am. That is about what I can tell you. The model has worked for hundreds of years. We have amended it throughout time, and it continues to be a time-tested model.

Ms. ADAMS. Thank you so much. Mr. Chairman, I am out of time. I yield back. Thank you.

Mr. DUFFY. Yes, we don't accept credit cards, though, like they do.

The CHAIRMAN. Thank you very much. And now the gentleman from Georgia, Mr. Austin Scott, is recognized for 5 minutes.

Mr. AUSTIN SCOTT of Georgia. Thank you, Mr. Chairman. And at the outset I want to say a couple things. One is I am, and I believe the majority of my constituents are, more concerned about the price of food and energy than they are about the price of digital currencies. I don't mind telling you I don't understand the whole crypto thing. There is a tremendous amount of mining that goes on in the area that I represent. I do not understand why it consumes so much energy or what they are actually mining. But I do think the CFTC roundtable May 25th is going to provide a lot more information and a lot more understanding for all of us on the Committee, as well as those who will be directly impacted by this.

For me, the issue is—and I majored in risk management and insurance and actually had my Series 7 before being elected to Congress. It is: does the risk outweigh the return? And I look at CoinFund and I go to your webpage and it says disruptive technology requires disruptive investors. And my concern—and I can't see Mr. Bankman-Fried—is does this disrupt the markets as a whole? I honestly don't think it is necessarily bad if the majority of crypto is traded overseas. I just don't. Now, if coin markets and energy markets moved overseas, that would be a significant concern for me.

But my question for you, Mr. Bankman-Fried, is that, as I understand from your comments, *FTX.com* has been operating internationally and you allow this model overseas, is that correct?

Mr. BANKMAN-FRIED. Yes, that is correct.

Mr. AUSTIN SCOTT of Georgia. So can a U.S. investor not operate on your platform overseas?

Mr. BANKMAN-FRIED. That is correct. They cannot. We have a separate platform for U.S. investors that does not currently have a margin and futures product on the overseas application, which is licensed by a lot of the world today and overseen by many of the top financial regulators. We do offer a very similar product to what we are proposing here.

Mr. AUSTIN SCOTT of Georgia. But U.S.-based investors cannot transact through——

Mr. BANKMAN-FRIED. That is correct.

Mr. AUSTIN SCOTT of Georgia. Okay. That was one of the questions that I had. But, Mr. Edmonds, in your testimony you expressed concern that the proposal if approved could ultimately be applied to traditional agriculture and energy markets, and that is one of my primary concerns. You also stated innovation cannot supersede the primary function of futures markets for price discovery and hedging, and I agree with that statement. But can you elaborate on how you see this proposal potentially affecting markets and the farmers that I represent who use them. Especially in today's day and time with fertilizer and other input costs as high as they are, I am extremely concerned about this.

Mr. EDMONDS. Yes, I believe it raises the cost of their operation at the end of the day if you were to apply this model to those markets because you are going to pre-fund. And today when an FCM sits in the middle of the transaction and represents the end client to the exchange and clearinghouse, they have a very wide-ranging relationship with the end-user at the end of the day. They are looking at much more than just an individual transaction. In the FTX model, as it is proposed in the application, it is an individual transaction. And when you are under equity at that point you face the liquidation that Mr. Duffy and others have commented on here.

Mr. AUSTIN SCOTT of Georgia. Mr. Bankman-Fried, do you have anything to add to that? I mean, the energy and the commodity markets are my primary concern.

Mr. BANKMAN-FRIED. Yes. So, first of all, I completely acknowledge that this model would require further analysis for some asset classes before we would want to launch any products there. I believe the same would be true of what the CFTC would want. We are not planning to be launching energy products anytime soon with this model. We are going to be starting off with just digital assets because, as you say, when you look at assets that are not typically traded 24/7, assets that have physical settlement in physical warehouses, assets with different types of market participants, that does involve a further conversation.

Mr. AUSTIN SCOTT of Georgia. But your application is not limited to margin digital commodities is my understanding.

Mr. BANKMAN-FRIED. We are not intending to list them. I do not believe the CFTC would want us to list nondigital assets out of the gate and we——

Mr. AUSTIN SCOTT of Georgia. Then why does your application allow for it?

Mr. BANKMAN-FRIED. That is how standard applications are, but if this is something that you don't trust the CFTC to exercise their discretion on, we could look into writing some time period during which we could not do that in our application. Like that is the kind of thing we would be open to. Like I am not lying to you right now. I really do mean this. And I trust that the CFTC will enforce that as well. But you could look into other controls on this.

Mr. AUSTIN SCOTT of Georgia. You said time period. What about a permanent restriction?

Mr. BANKMAN-FRIED. Why would you think that there should be a permanent restriction? As I understand it, you are asking questions about the suitability, which I think are appropriate and would require further discussion. You can imagine something where it would require a further review by DCR in order to list them, which I think would be potentially appropriate.

Mr. AUSTIN SCOTT of Georgia. My time has expired. I look forward to the roundtable, Mr. Chairman.

The CHAIRMAN. Thank you very much, Mr. Scott. And now the gentlewoman from Connecticut, Mrs. Hayes, who is also the Chairwoman of the Subcommittee on Nutrition, Oversight, and Department Operations, is now recognized for 5 minutes.

Mrs. HAYES. Thank you, Mr. Chairman. And thank you to our witnesses for being here today. This is a very interesting topic for me as an educator. I am always interested to learn new things. And as a legislator, I realize that we cannot put our head in the sand and not evolve as markets are evolving and our economies are changing. So this is something that we really need to have these thoughtful conversations about, and we need to be doing that right now, not after it is too late.

The digital asset market is expanding. In fact, in my state last year a firm was opened in Connecticut. So the cryptocurrency sector is emerging. Mr. Bankman-Fried, your proposal supports the idea of removing intermediaries as a means of democratizing the digital currency market. I am concerned that removing intermediaries from the equation could create an opening for fraud and abuse, particularly towards new customers that are entering the digital asset market for the first time. While these assets could present a path towards building wealth for some, I am concerned that the volatility of the market could lead to average customers losing even more, especially without proper oversight.

So my question is how do you respond to the assertion that the elimination of capital investment, combined with your proposal to self-fund your guarantee fund will result in a lack of incentive for participants to mitigate their own risk?

Mr. BANKMAN-FRIED. Thank you for the question. There are a few different answers. To one of those it is absolutely important that we still have protections against fraud, against scams, and some of those protections are often provided by intermediaries like FCMs. To the extent that they are, it is absolutely incumbent upon our platform to have the same protections. We do have those. That is a piece of our proposal. And the entire platform is under CFTC oversight, and they would be enforcing that that would be true as well, that all of the necessary customer protections that typically exist were in there.

Talking about the point you have raised about the capital, in addition to the first line of defense being our own skin in the game rather than our customers' or intermediaries' skins in the game, in our model the initial margin for the positions is posted directly to the clearinghouse. And so in addition to that guarantee fund, there is a lot of capital which is held directly with CFTC oversight, segregated accounts for margin for the customers' positions, which also provides a capital backstop for them and does not require trust on that side.

I will just say that for institutions that do want to access it through intermediaries, as I imagine a number of them would, we are absolutely open and excited to work with FCMs on that front for them to fill a role as intermediary, especially, for their existing clients and other clients who want their services, as many do, and that when you talk about extending credit, that is something that an FCM could come to an agreement with, with their clients.

Mrs. HAYES. Thank you. That is quite an optimistic viewpoint.

Mr. Duffy, do you believe that this model would be secure enough for retail investors to build wealth, or do you believe conversely that the increased market volatility caused by lack of backstops will endanger their investments?

Mr. DUFFY. It is really difficult for me to predict what the retail investor will profit or not profit because you have seen a lot of them make a lot of money. And I like to remind people that I have seen a lot of people make a lot of money being wrong to market, and I have seen a lot of people lose a lot of money being right to market. So it is all a question of timing, so it is really difficult to make that assertion.

I am concerned about the overall proposal. Now, Mr. Bankman-Fried continuously says that he will not apply this to other products. That is absolutely irrational for him to have the ability to apply to a single asset class while the rest of us sit on the goal line while he is at the 50 yard line and he decides to deploy it in other asset classes and we don't get the ability to do it.

There are a lot of problems with this, but the educational knowledge that needs to go to the retail investor I think has been completely underserved. CME Group has been an institutional participant for many, many decades now, and we continue to do it. But we do a lot of education with the retail investor. We don't believe in the app model with a credit card, sign up, and good luck to you. We don't think that is a process that makes a lot of sense for retail investors.

I made reference earlier, there is a publicly traded entity called Coinbase that you all may have noticed, these people are down 90 percent in value in 6 months, so they are all based off cryptocurrencies. So those participants are retail owners of that firm, not institutional.

Mrs. HAYES. Thank you. My time has expired, but I will be submitting an additional question for the record because we heard from Chairman Rostin Behnam that they would need to expand their budget and their capacity to oversee cryptocurrency. I have some serious concerns about what that looks like, but I will submit that question for the record. Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. The gentleman from Arkansas, Mr. Crawford, is recognized for 5 minutes.

Mr. CRAWFORD. Thank you, Mr. Chairman. Thank you all for being here today.

Kind of following on with what my colleague, Mr. Austin Scott, was discussing with regard to agriculture producers, I mean, this is the Agriculture Committee, so if we are not concerned about ag producers, we are on the wrong committee. So I want to put it in the context of how this might potentially impact the ag markets. For example, I mean, the thing that—I talk to farmers all the time. You plant wheat, you are long wheat. You got a position in the market. You are long wheat. There is an underlying fundamental to that. You plant cotton, you are long cotton. It is just how it is.

I am really struggling to understand—and in all earnestness, what is the underlying security of Bitcoin or any other cryptocurrency in the context of other commodities that make this—just as an example, one cryptocurrency in 24 hours—I think it was yesterday—lost 97 percent of their value in 24 hours. So I want to be forward-thinking. I want to be a modern guy and try to understand crypto, but I am really struggling with it. I am really struggling with it.

And my concern is that farmers are looking at this and go, oh, heck, if we were ever going to try to incentivize farmers to get in the market and avail themselves of this fundamental risk management tool that we call the commodities futures market, I don't see this as an incentive. That is my concern. Am I missing something here?

Mr. Bankman-Fried, I know that the proposal is only limited to Bitcoin and Ethereum futures and I get that, but I am concerned about the precedent that we are setting here. And so I guess my question is would approval of the proposal open the door for other exchanges to use this model for traditional futures contract like I mentioned, cotton, corn, wheat, other ag commodities? And what would prevent broader application of this sort of proposal beyond the current intent?

Mr. BANKMAN-FRIED. The CFTC has oversight of all of the clearinghouses and exchanges and would have oversight of any new risk model submissions and could deem those inappropriate if it believed that they were so. I think that if you have feedback to give to the CFTC that you think is important to give to them on what they should and should not deem appropriate, I suspect that they would probably welcome that. I don't see how that is relevant to our application. That is not what we are doing. But, I do think that would be appropriate to have a longer period of discussion on agricultural commodities and risk models prior to implementing any new models for them.

Mr. CRAWFORD. I got you, Mr. Duffy. I just indicated Terra as one example, a 97 percent loss in 24 hours, Bitcoin down 25 percent in the last 30 days. Do these crypto market trends concern you with what we are discussing today specifically as it pertains to market risk and asset volatility?

Mr. DUFFY. So let me make a couple comments. First of all, Mr. Bankman-Fried has continually said that it would be up to the Commission to do this, but at the same time he has said to this

body over and over again he has not eliminated, when Mr. Scott pressed him, would he not deploy this model into other asset classes, which he would. And if he doesn't, others would because it is a cheap model to do because the oversight goes down.

Second, on your first question about what is a cryptocurrency worth if it goes down? It is worth zero. If corn goes to a certain price, you have an ear of corn. That is as simple as it comes. You have nothing when you have cryptocurrency that goes to zero.

The risk of this going into other markets is extremely detrimental. We have two countries fighting each other right now—and I thank the gentleman for his service at the end of the table. We have two countries fighting that have ⅓ of the wheat production that is going to be off the market. Don't worry about other products. You better worry about—the questions that need to be worried about, are we all going to be able to eat? And we need to have sound, prudent risk management. And I cannot be forced into a model that I will have no choice to deploy if in fact the CFTC goes down this path because I will deploy it because somebody else will. I have a fiduciary obligation to my shareholders and my clients to do certain things, and I will have no choice. Otherwise, I will be out of business. This is a proposal that is fraught with danger, and I have outlined that in my testimony. The application that has been put forth to the CFTC is completely different than some of the comments that are being said at this panel today. So I can only comment on what is out there. He has not eliminated other asset classes from his application to be clear.

Mr. CRAWFORD. Thank you. The volatility seems to be a recurring theme, and my concern is that this volatility is exacerbated by inflation, and inflation is exacerbated by this market volatility. Is that a fair statement?

Mr. DUFFY. It is a fair statement to some, and others would disagree with you, but I happen to agree with you.

Mr. CRAWFORD. All right. Thank you. I yield back.

The CHAIRMAN. Thank you, Mr. Crawford.

And now the gentlewoman from Ohio, Ms. Brown, is recognized for 5 minutes.

Ms. BROWN. Thank you, Chairman Scott and Ranking Member Thompson, for holding this hearing today. And thank you to our panel today. We appreciate hearing from all of you.

I believe that, as our country modernizes and evolves, our financial institutions should also. In addition, ingenuity when it comes to market access and clearinghouse models is something that I have been pleased to see CFTC prioritized. However, this cannot be done at the expense of consumer protection.

Mr. Bankman-Fried, how does FTX plan to strike the right balance between offering innovative financial products that may expand economic opportunities and eliminate barriers to entry for investors while still ensuring consumer protections are maintained?

Mr. BANKMAN-FRIED. Thank you for the question. We will have in addition to all of the customer protections that exist on traditional models, on traditional futures exchanges and intermediaries, additional suitability tests, transparency about the products to ensure that customers are fully informed, fully aware of what they are doing, that they have an understanding of these assets and

these products. We are going to be going through voluntary disclosures and analyses that will be made public of any assets that are listed on the platform and make sure that those are obvious to users of the platform in addition to the mechanics of the platform on it.

I think that it is important to be able to offer equitable access to investors, as you said, that affords equitable opportunities to accrue wealth, but I also think that it is important that people are extremely aware of what they are trading, of how it works, of its mechanics, that they are not accessing things that they do not at all understand and that they are accessing products that have liquidity support, the demands on it. So I think it is extremely important. We spent a lot of time on it, and if it is helpful, we are happy to follow up with you as well and send over what some of those materials that we have are on the transparency and disclosure and suitability.

Ms. BROWN. Thank you. Because I consider consumer education to be a critical segment of consumer protection, investors should have access to the necessary tools to make informed decisions about their financial wallet.

Just to kind of expand on that point, Mr. Bankman-Fried, how does FTX ensure that customers have an appropriate understanding of derivatives trading before engaging in trades on the FTX platform?

Mr. BANKMAN-FRIED. Yes, absolutely. So in addition to having our entire rulebook, all of the market data, and everything made publicly available, before you can access any trading on the platform, you have to go through a walk-through of the FTX US Derivatives platform that explains how every piece of it works, that explains the products you would be trading, and for smaller users a test that tests your knowledge of how those products work to ensure that there is basically forced disclosure, transparency, and checks that people understand the mechanics of the products and of the platform. Again, super, super happy to follow up, happy to have a further discussion about this and show you the materials that we have on that.

Ms. BROWN. Thank you. Same question to you, Mr. Perkins. How does Coinbase ensure that customers have an appropriate understanding of derivatives trading before engaging in trades on your platform?

Mr. PERKINS. Thank you, Congresswoman. I am with CoinFund, and we do not provide access for customers. We are not an exchange. We are an investment management firm, so maybe I can follow up with you offline on that.

Ms. BROWN. All right. Well, thank you, Mr. Chairman. And with that, I yield back.

The CHAIRMAN. Thank you. And now the gentleman from North Carolina, Mr. Rouzer, is recognized for 5 minutes.

Mr. ROUZER. Thank you, Mr. Chairman. This is a very interesting subject. I am pleased to have everybody here.

Walt, great to see you again. Walt and I fought battles in a previous life as Senate staffers years ago, and really great to see you.

Mr. Duffy—and I don't have any pre-bias with any of the questions that I have. I am just trying to understand the situation a

little better. But my understanding is the CME Group proposed its own direct clearing model in 2016. What problems were you hoping to address in the futures market at that time, and do those problems still exist today?

Mr. DUFFY. It is interesting because I think people believe that I am opposed to the direct clearing model. I have never said I was opposed to a direct clearing model. I said I oppose the FTX's direct clearing model. So I want to make sure that we are crystal clear on that. The model that you are referring to in 2016, as you are I am sure aware, the illustrious Federal Government's and Federal Reserve's central banks around the world decided to come up with what is called the leverage ratio that made it extremely punitive for banks to participate, and their capital balance sheets were being consumed by the leverage ratio under Basel III. So what we were trying to help accomplish was to get clients to be on CME's books directly but still have to adhere to all the rules and procedures and protocols of the futures commission merchants at the same time.

We eliminated that program for a couple reasons. One, the CFTC asked me to for starters. That is who told me to get rid of the program. Second, we got rid of it because they changed the leverage ratio on Basel III, which made some of the banks a little bit more compelling to do customer business. But it was a very punitive time in the leverage ratio if you recall back in that time period of 2016. That is the reason why we abandoned the direct participant model.

I am not opposed to it, sir. I am opposed to this application for a lot of reasons, because it does not conform to the existing Commodity Exchange Act of 2000.

Mr. ROUZER. I understand. Thank you. Mr. Bankman-Fried—and you may have testified on this earlier and I just missed it—but what has been the experience in other countries? How many other countries have authorized——

Mr. BANKMAN-FRIED. Yes, we are working with regulators in a large number of countries across the globe. On our platform we are licensed and regulated in a number of them, including Japan, Switzerland, European Union, Australia, and others. We have had productive conversations with a number of them. And, I think that they have, obviously, I will let them speak for themselves; but, they have become comfortable with the model as it operates.

The model that we would be proposing for FTX US Derivatives is a more conservative model than what we operate overseas. I think that it has provided a large number of helpful risk features and safeguards on the product. We comply with anti-money laundering, know-your-customer standards globally, and are helpful wherever we can with regulation law enforcement. So, I look forward to working with the CFTC to continue to dive into our application and ultimately come to the judgment that they think is appropriate.

Mr. ROUZER. Mr. Lukken, do you believe that your members might find it attractive to participate in an exchange that does not charge for data, connectivity, or to require contributions to the clearinghouse guarantee fund?

Mr. LUKKEN. Yes. I think FCMs over the years have indicated that a certain amount of regulatory data is necessary for the risk management functions that they provide. So getting access to that data in cost-effective ways is very important for the downstream market users of that data. So that is certainly an innovative thing that FTX is doing, as well as an appropriate amount of skin in the game in the capital fund, the default fund.

Mr. ROUZER. Do you think two exchanges controlling 97 percent of U.S. futures trading volumes is a competitive market?

Mr. LUKKEN. Is that to me? We would love to see more competition. I mean, that is really—but this is a scaled business. We understand that. It is a volume business, and so the DNA of our industry is that liquidity comes to a few exchanges. But we are always looking for new exchanges to complete globally and make sure that everybody is checked in the system and make sure that prices are fair and products are offered.

Mr. ROUZER. Yes, I guess my only final comment in the last 15 seconds is I think crypto is here to stay. I think America needs to be on the forefront of it. A number of us are quite concerned about our debt as it relates to—or at least I am very concerned about the debt as it relates to our ability to keep the dollar as the reserve currency of the world. So I do think that moving forward we have to be very thoughtful about this subject area because I think it has real long-term implications. Mr. Chairman, I yield back.

The CHAIRMAN. Thank you. Now the gentlewoman from New Hampshire, Ms. Kuster, is recognized for 5 minutes.

Ms. KUSTER. Thank you, Mr. Chairman. I appreciate the opportunity to have this conversation, and I agree with my colleague that crypto is likely here to stay, but it is very complex and we all need to have a good understanding of it.

The Commodity Futures Trading Commission is weighing this FTX application, and I think it is important for Congress and the public to understand the context here as fully as possible. And, Mr. Chairman, I would like to enter for the record an article in today's FORBES and in many, many media organizations. The title is, *$1 Trillion Crypto Meltdown-Huge Crash Wipes Out The Price Of Bitcoin, Ethereum, BNB, XRP, Cardano, Solana, Terra's Luna And Avalanche.* And it goes through all the rest. So obviously there is some volatility here that we need to understand. I appreciate the witnesses being here to walk us through it.

The CHAIRMAN. Yes, so ordered.

[The article referred to is located on p. 199.]

Ms. KUSTER. Thank you. It is clearly a growing financial field and important for American consumers to have access and to understand the crypto marketplace but also the level of risk that they can expect when trading. In my lifetime I have never read of a $1 trillion meltdown. So FTX's application has obviously generated a lot of discussion, as evidenced not only the views we have heard by our witnesses today but the extraordinary number of public comments that CFTC received about it.

The factor of the application that I want to focus on first and foremost for my constituents involves taking intermediaries out of this clearinghouse model. I know there are certainly some exceptions, but historically, intermediary stakeholders have played roles

in derivative markets by vetting traders, assuming some risk, and shoring up the clearinghouse itself in an event where the clearinghouse's long-term viability is in jeopardy.

Mr. Duffy, from CME's perspective do you believe that all moves toward disintermediation in derivatives organizations create risks similar to those you noted in your testimony regarding FTX proposal?

Mr. DUFFY. I think I understood your question, ma'am, but I think you—I didn't hear it completely. So why do I believe what? I am sorry.

Ms. KUSTER. That all moves toward disintermediation in derivatives create risks similar to those you noted in your testimony regarding the FTX proposal?

Mr. DUFFY. No, I mean, here, I think when you look at the FTX proposal base as what we deploy today, the disintermediation model that you referred to is a concern. I said I was not opposed to the direct model, but at the same time I am not running the lead to charge on disintermediation. I do believe when you look at margin today, CME has a certain margin that we charge, but what is really important is the firms that Mr. Lukken represents also puts a surcharge on top of that which you would not have in the disintermediated model, so meaning if I charge $1 for margin, that clearing firm might charge an extra $2 or $3 to its client, which gives them the ability to manage their risk. So that is one of the huge benefits of having the model that we have, so I am not leading the charge against disintermediation. I don't think it is appropriate. But at the same time, I have to be prepared to move our firm forward. So we are looking at innovative ways no different than Mr. Bankman-Fried and the rest of the industry is. I do not want to lead the charge toward disintermediation though.

Ms. KUSTER. Okay. Thank you. So, turning to Mr. Bankman-Fried, could you elaborate on what considerations were front of mind as FTX was developing this non-intermediated model and if any alternative structures were considered specifically to protect consumers from the risk of a $1 trillion crash?

Mr. BANKMAN-FRIED. Thank you for the question. I will note that stock markets have probably lost more than $1 trillion over the last few days as well. It has been a brutal month for markets.

A few notes on this, we did consider a number of different models. This has a lot of similarity to the models that are used in every other country today. For cryptocurrency futures exchanges this is how hundreds of billions of dollars of volume are processed on a daily basis, and it has withstood large market moves, including over the last few days.

That being said, there are advantages to an intermediated model. There absolutely are. To give one clear example of this, if you have a trading firm that is using a prime brokerage service through which much of their flow goes and their assets are held and they very well might want to send their FTX orders through that as well, we absolutely welcome that. We welcome them going through that FCM. And more generally when people talk about, well, you could have FCMs requiring additional margin, there is the credit relationship with their customers, they can absolutely do that in our model as well. We require that the clearinghouse has capital

posted to it, but the intermediaries and FCMs are absolutely welcome to have bespoke arrangements with their clients where they request additional margin in order to buffer positions, where they can give credit to customers if they trust those customers and that collateral is deposited, whichever system works best for them and for their clients.

Ms. KUSTER. Thank you, and my time is up. I yield back.

The CHAIRMAN. The gentleman from Illinois, Mr. Davis, is now recognized for 5 minutes.

Mr. DAVIS. Thank you, Chairman Scott and Ranking Member Thompson, for holding this hearing. While this Committee I believe is still not addressing the impact that 40 year high inflation rates are having on ag inputs, gas prices, and grocery bills may be because inflation rates are down a whopping 2/10 of a percent this month, but I am glad we are having this discussion, really given the impact that this issue is going to have on ag commodities.

There is a lot of attention and engagement in the cryptocurrency market. It is not the role of Congress to pick winners and losers, tell people what they should or shouldn't invest in, what platform investors should use, or the tools and technologies companies should seek to adopt. Right now, we are talking about clearing cryptocurrency derivatives, but in my opinion there is no real distinction between the clearing of ag commodities and cryptocurrency in terms of the risk management standards that we currently have on the books.

My concern here is with the impact on futures markets' stability and the risk management of volatility in ag commodity prices for everything from corn to soy to energy and natural gas. The farmers in my district, they are not mining Bitcoin in their spare time, and it is not because they are worried about climate change. And yet this issue before the CFTC could potentially affect them in the same way, the same as crypto traders. The major concern I have is that the CFTC, they have the ability to create a *de facto* regulatory structure via piecemeal applications that do not lend to clear guidelines or a level playing field for all market participants and stakeholders.

Financial services regulations in this country overall are extremely complex. And as a Republican, I actually find many of them to be overreaching and unnecessary. But the fact that a politically appointed Commission or even its staff can set singular market standards for one company that impact an entire market is somewhat astonishing. This is not how far-reaching market structure changes should be made in this or frankly any other financial market.

If you look at crypto prices right now, the last thing our farmers can afford to see today is a new layer of volatility that stems from one-off CFTC decisions. And I agree market volatility has been across the board. These potential changes in risk management practices and therefore their impact on volatility I fear could become a reflection of a piecemeal regulatory framework and not a thoughtful, consensus-driven approach.

I am really not here to bash a company or an idea. But I do think that the Commission needs to act with caution and go

through a proper rulemaking process to ensure fairness and clear rules for all market participants and those potentially impacted.

So my question is this, and I will start with Terry. Would you like to respond to that?

Mr. DUFFY. To your statement, sir?

Mr. DAVIS. To the statement.

Mr. DUFFY. I agree with your statement wholeheartedly. I am very concerned that the Commission is unilaterally looking to make a proposal for a single asset class. And if in fact they do that, they would have to amend the application that is put forth already today by every legal mind in the world. Now, once that application is amended, it is open to all asset classes, so otherwise it is deemed arbitrary. And the Commission cannot be arbitrary. And Mr. Lukken knows this as well as anybody.

So we would have no other choice because this model, as I said earlier, is a cheap way around jurisdiction, and we would have to compete. Otherwise, I am going to have either FTX or somebody else competing in the asset classes that I am trying to provide liquidity and risk management for across the board. And that includes every single commodity known to man, wheat, corn, soybeans right across the board, energy, natural gas, mortgages, foreign exchange, equity futures, everything.

Mr. DAVIS. Which affects my farmers in my district.

Mr. DUFFY. It will affect every farmer because they will have to be up, as Mr. Edmonds said earlier in his testimony, at 1 o'clock in the morning on a Saturday finding out that they just lost their hedge on their crop that they already have in the ground. Why? Because they got auto-liquidated.

Mr. DAVIS. Well, Sam, it was great meeting with you yesterday. Obviously, as we mentioned, I have some concerns about the issue that we are discussing today. Can you tell me, based upon your testimony earlier, what kind of impact do you think the proposal that you have put forth and your team has put forth could have on my farmers? Can you help me understand my concerns about the impact to the ag commodity industry?

Mr. BANKMAN-FRIED. Yes, thank you for the question. Unlike Mr. Duffy, I would consider whether it was an appropriate risk model before deploying it and would only do that if I thought it was healthy for markets. I do think that this is healthy for markets at least in digital assets. That is why we have put it forward. I think it is a more conservative risk model that is nonrecourse with respect to the participants that requires that the collateral is submitted to the clearinghouse and is definitely there beforehand with clear and transparent guidelines and rules around the risk engine. And I think that all of those could help decrease volatility and increase liquidity in markets. All of that being said, I will reiterate that I am not planning to launch this in agriculture markets anytime soon. Doing so would require further DCR review of any risk——

The CHAIRMAN. The gentleman's time has expired.

Mr. DAVIS. Thank you.

The CHAIRMAN. Thank you very much.

Mr. DAVIS. Thanks, Mr. Chairman.

The CHAIRMAN. And now I recognize the gentleman from New York, Mr. Maloney, you are recognized for 5 minutes.

Mr. MALONEY. Well, thank you, Mr. Chairman. What a fantastic hearing. I really commend you for holding it, for the Ranking Member, and for the diverse views represented here.

Well, first, I feel like I should have made better career choices. But second, I have to tell you, Mr. Bankman-Fried, I am fascinated by this, and I think this is a really interesting idea. You sure got everybody stirred up, and they hate it. They hate this idea. I mean, understandably because of what it might do to their businesses, but they are also concerned about whether it blows up their business model or just the world economy, and that is where we come in, I think.

So, clearing disintermediated margin derivative trades directly to retail customers, that is the subject comes up a lot at my townhall meetings. And dynamically setting margin levels and auto-liquidation and transparent models, I mean, it is actually a really cool idea, so I really commend you on it. I really want to understand it more. And I am completely agnostic about it. Help me understand the auto-liquidation point that Mr. Duffy is making.

Mr. BANKMAN-FRIED. Yes. So I can tell you how I see it. Obviously, different people have different viewpoints on it. But the way I see it, you have some user that has put on a position. There is some collateral for that position. In our case it is held transparently with the clearinghouse. And, at some point if markets moved far enough against that position, they would be out of collateral. And at that point, the position in our model has to be closed down because otherwise they would be more than out of collateral. Their account would be net negative.

There are a few options for what you could do there with different risk models. One thing that you could do is have a recourse-based risk model where you let them keep the position open and then go after their house if it gets negative enough. That is not what we intend to do. We intend to instead deleverage the positions if they are out of collateral.

But on the point of the speed of the risk engine, right, of whether you are liquidating quickly or whether you are waiting a few days, if you wait a few days to do it, you have a choice between either beginning a margin call and liquidation way earlier than may be necessary in case markets move against that position over the next few days or waiting until a position is almost underwater and might be way beyond bankrupt by the time you could finish that liquidation leading to scenarios like what we saw with LME.

Mr. MALONEY. Yes.

Mr. BANKMAN-FRIED. The advantage of the real-time one is that you can actually precisely measure where a position is, wait to liquidate until the last moments that you preserved the positions if at all possible, while still protecting the systemic risk.

Mr. MALONEY. Well, I will let Mr. Duffy get in here, but I also want to talk about your models. How do we know you have the right models? How do we know you have the right risk models? What if you get your models wrong?

If you get your models wrong, it is all wrong, right?

Mr. BANKMAN-FRIED. Yes, absolutely. So there are a number of things. We have gone through an extensive process with the CFTC on this, on the details of the model, on the back-testing of it, both the historical data, with simulated data under all of the necessary standards. In addition to that, we have been running a model that this be more conservative than internationally for the last 3 years has gone through days with 40 percent moves in markets in a single day. We just went through a 40 percent move over a few days. It has been functioning well in that environment, handling tens of billions of dollars of daily volume. We have never had to mutualize losses. We have never gotten close to that point. The entire insurance fund draw over the history is a tiny fraction of what we are proposing for our own skin in the game for the initial guarantee fund, and so that is sort of an empirical test on it as well.

Mr. MALONEY. All right. Fifty seconds left, Mr. Duffy, I know you hate it. And I know you said you are not against it, you just don't want to lead the charge. It is a hell of a disruption, let's face it, and it doesn't mean you are wrong. Help me understand. I mean, so are you saying no or are you saying not now?

Mr. DUFFY. I am saying an industry——

Mr. MALONEY. Mr. Lukken's statement was exquisitely worded. He just doesn't want to do anything right now, he wants to look at it more, very thoughtful, tough debate. What do you think?

Mr. DUFFY. I believe that there should be a formal rulemaking process at the Commodity Futures Trading Commission where everybody gets to participate in that process and do not, do not make this just about crypto. Make it about market structure. That is what I am here to discuss. And on that proposal about a liquidation, sir, one of the things that FTX does not tell you or this Committee is what they do for collateral. When I take on collateral, whatever form it may be, cash, treasuries, gold, whatever I have a mix of, we have to haircut that at a certain value. Their haircut on their collateral for Bitcoin is five percent. Their margin to trade Bitcoin is 15 percent of margin. This auto-liquidator will be going with smoke coming out of it at those price levels. That is the problem with this application. And you need to hear the whole truth about this.

Mr. MALONEY. Thank you.

The CHAIRMAN. The gentleman's time has expired. Thank you.

And now the gentleman from Kansas, Mr. Mann, is now recognized for 5 minutes.

Mr. MANN. Thank you, Mr. Chairman. I appreciate Mr. Maloney's comments and questions. I also would like to associate myself with Congressman Davis's comments and questions and really getting at the heart of what will the impact of this, if it goes through, be on production agriculture, on the agriculture markets as we know them and obviously a whole host of other issues?

First question would be for you, Mr. Bankman-Fried. When we talk about market structure, what is the difference between the FTX proposal and the ICE NGX model that currently exists?

Mr. BANKMAN-FRIED. Thank you for the question. And as you were pointing out, there exist a number of licensed futures exchanges with the CFTC that have various properties of our proposal already, ICE NGX being one of these. The difference we have

is we are combining together a few different things, each of which is found in other exchanges but not always together, one of which is collateral help with the clearinghouse, the real-time margining system, and the option for disintermediated direct access to the platform for all participants put together is to the extent there is something novel, I guess that is what it is.

Mr. MANN. Okay. And the second question will be for you as well. There has been a lot of discussion of course. Can we just elaborate a little bit on whether or not your $250 million guarantee fund is sufficient relative to the billions of dollars maintained by CME and ICE in their guarantee funds? Could you please elaborate on what you believe that your holdings would be sufficient relative to the risk in the market?

Mr. BANKMAN-FRIED. Yes, thank you for the question. First of all, and there are different terms used by the different models for similar things, which makes it a little bit confusing. I probably haven't done a perfect job of describing all this. In addition to the $250 million that we have put in the guaranteed fund, that is our own skin in the game. None of that is mutualized. We also require margin held with the clearinghouse from all open positions. And so internationally we have tens of billions of dollars of collateral in the equivalent of the clearinghouse today collateralizing customer positions on the venue. And so that is a very significant piece of it that plays the role of collateral held at various intermediaries to some extent in other models and is backstopping customer positions.

I will also say that we have done an extensive analysis historically of this model internationally. Total historical insurance fund draw was only a few percent of the guarantee fund that we are proposing, and that is over the last 3 years combined, and that is with a less conservative model than what we would be proposing, so it has functioned successfully.

I would also just tack on one thing. The numbers that Mr. Duffy quoted are not necessarily numbers for the U.S. platform. That was for the international platform, although I will also note that empirically it seems to have worked. So I don't know where that smoke is ending up; but, apparently it has been successfully managed, as I would predict it would be given the premise in the risk model.

Mr. MANN. Okay. Thank you. A question for you, Mr. Duffy. You have raised concerns about the volatility and market disruptions spilling over from a direct access market into the traditional market.

Mr. DUFFY. Yes.

Mr. MANN. Can you elaborate on how you see that risk transferring?

Mr. DUFFY. Well, and I have said several times in my testimony in the hearing. Here is the way it is going to play out. Again, it is a market structure change when you go to a direct model that FTX's proposal is asking for. When that is deployed against other asset classes, the participants are not crypto participants. They are farmers, ranchers, they are producing oil, they are writing mortgages, all the products that I trade. So I have been through that. They are not prepared in my opinion for this type of model today

because the auto-liquidator that is being proposed is something that will be unsuspecting to the client.

Now, he can talk about the margin that he has and the collateral that he has, but the bottom line is people at my institution, as I have said, have margin from CME, then have additional margin from their clearing firms. So those clearing firms are in touch with their clients. And if in fact they touch certain levels, they get calls and they determine either put up more money or we are going to take you out of the market. So an auto-liquidator is not revolutionary new technology by any stretch of the imagination. But the way they do it is different. But when you deploy that and you have to keep these markets open 24 hours a day, 7 days a week against agribusinesses and others, I think it could be extremely detrimental not only at a time that we are living in now but going forward for the food industry. They need risk management tools. They don't need casinos to do risk management.

Mr. MANN. Great. And thank you. With that, my time is expiring. I yield back.

The CHAIRMAN. The gentleman from Arizona, Mr. O'Halleran, is now recognized for 5 minutes.

Mr. O'HALLERAN. Thank you, Mr. Chairman and Ranking Member, for organizing this important hearing. Thank you to the panel.

To be open, I am a former member of the Chicago Board of Trade and their board of directors, so I have a little bit of background on this subject. I understand the importance of innovating and updating our marketplaces. It is extremely important, and it has happened over time. I also understand that what I have heard here today are issues that impact consumers. It impacts the marketplace in general the ability to hedge risk, the taxpayer, and the economy in general. And this type of a change is important to look into in a way that includes everybody that should be at the table.

I am awful upset with the idea that we are even referring to the words *skin in the game.* This is no game. This is about the economy of America, and we have seen too many issues over time.

I also have a message for the CFTC. They need to work on this with us on an ongoing basis, not a little bit of the time, not a surprise. Don't even come to us, I don't think, before you talk to the community in general that is involved in this on an ongoing basis.

So, however, I am also aware of the risks that can appear if we approach these changes thoughtlessly. And so that is my opening statement.

And while on the board I saw markets crash. I watched firsthand as the clearinghouses provided stopgaps to protect consumers. It is a model that has worked over time and kept losses to a minimum. And there is no way in this marketplace that we are going to see a new model come forward and if it is going to work in the process and people are going to start to push for that model, it will expand. That is all there is to it. There is no ifs, ands, or buts. After looking at the FTX proposal, I wonder if a shift towards an all-in-one approach can offer these same protections.

I appreciative the CFTC's deliberate and public approach to answering this question as this decision will likely set precedent for future regulation. But we have to be very thoughtful going into

this, and I think this is a process that has begun way too late and has not spent enough time at the process.

Mr. Lukken, in your testimony you note that the FTX proposal would replace the traditional distributed risk clearing model with a more automated and centralized model, absence of intermediation. Will collapsing the functions of various market participants into a centralized entity create potential conflicts of interest that may impact key risk management functions?

Mr. LUKKEN. That is our concern. I think, traditionally we have put certain responsibilities in different entities. The FCM has overseen the client, the clearinghouse is overseeing the FCM and the clients' money there, and the regulator is overseeing everything. And when you start to integrate that, there are conflicts of interest that arise. Making sure that customers when they are liquidated, you are trying to hold them whole as best you can when doing so and not making impacts on markets. So when you start to combine things, I think we have to be very thoughtful about conflicts of interest and how that is managed.

Mr. O'HALLERAN. Thank you. Mr. Duffy, one way the FTX plan accounts for risk management is through auto-liquidation. I have heard a little bit of discussion about that today. Can you please explain how you see this process functioning from your perspective? And the digital assets are known for being volatile, highly volatile. Do you fear this new structure may lead to a greater number of liquidations?

Mr. DUFFY. Again, I am always cautious about trying to predict the direction of a market. I think that is really difficult to do, and my job is to manage risk of market participants and make sure both sides, the pays and collects are done properly, and that is exactly what we do at our clearinghouse, as you know, sir.

I have been in this business for 42 years, and I have seen a lot of things. And when we look at risk management, I think what is really important is that CME is never in the history of its company ever had to draw on its guarantee fund to cover losses. So I am referring to the 1987 crash. I am referring to the meltdown of 2000, things that we have all seen. I am not referring to the last 36 months where the market went straight up in crypto and hasn't had a loss. So I think there is a bit of a difference here.

I am very concerned that when you put new proposals forward, they are interesting, but they need to have the input of all participants and not just one particular segment.

Mr. O'HALLERAN. Thank you, Mr. Chairman, and thank you, Mr. Duffy, and I yield back.

The CHAIRMAN. Thank you. And now the gentlelady from Minnesota, Mrs. Fischbach, is now recognized for 5 minutes.

Mrs. FISCHBACH. Thank you, Mr. Chairman. And thank you all for being here. I appreciate the opportunity to ask a couple of questions.

But I do want to—I know that Mr. Davis had started a little bit talking about ag and ag-related markets, and so I did want to ask, obviously the ag market is facing incredibly difficult times right now. Inflation is hitting them, and risk management tools are even more important than ever. But, Mr. Lukken, you know that farmers in the agriculture community are core users of the derivatives

market. Why are these markets so important to that community, and what tools in the existing market help this community manage the risk?

Mr. LUKKEN. Well, farmers deal with incredibly thin margins, as you know, so our markets are ways that they can manage risk. They are planting in this spring and harvesting in the fall. In that time period you don't know what the price of corn may be when you harvest. So our markets are there for your constituents to make sure they can manage that risk appropriately.

And, they have lots of other things they must worry about. They don't want have to worry about the price of corn or wheat up in Minnesota. So, these markets are incredibly important, and that is why I think today's discussion is important because this is a precedent-setting event.

Mrs. FISCHBACH. And do you have anything else that you could add about maybe how the proposal—I know that Mr. Bankman-Fried said that it doesn't deal with the ag markets right now, but do you have anything to add about potential issues with the ag market?

Mr. LUKKEN. Well, I mean, the proposal before the CFTC is open to any asset class. This is really not about cryptocurrencies. This is, as Mr. Duffy was saying, about market structure. Futures markets are well-regulated, best-in-class regulatory system that this Committee helped to construct. And so if we are pivoting from that, that is going to have impacts beyond simply cryptocurrencies. So we want to be thoughtful about this. We want to be deliberative about this and make sure the rules of the road are the same and at the highest levels of risk management. So it does have the potential to impact ag markets. Again, they need access to risk markets, and we want to make sure it is fair and safe for them.

Mrs. FISCHBACH. Thank you very much. And, Mr. Bankman-Fried, do you have any response to the issues with the ag market? And, like I said, I know earlier you mentioned that it didn't involve that, but I am curious as to your reaction.

Mr. BANKMAN-FRIED. Yes, and I can just reiterate again like we are not planning to get into ag anytime soon, and we are open to making that legally binding in some ways, to making that formula.

I think that I would be really interested in doing a deeper dive with the Committee, with the constituents on risk models in the ag markets. I think there are parts of this risk model that I think could be helpful and appropriate. There are also things that we need some deeper thought around weekends, around physical delivery and how that would interplay with the risk engine. I basically still think that some processes may end up being very helpful and attractive for those markets when you look at the easy, equitable access, when you look at the clear, transparent margining, and when you look at not making our farmers pay for market data that is supposed to be providing public price discovery. But I would also welcome a longer process around ag products.

Mrs. FISCHBACH. Thank you. And, Mr. Duffy, I have to call on you because you are making faces, so did you have a response? You looked like you were ready to say something, like I say, making faces.

Mr. DUFFY. Well, I am always ready to say something. It is in my nature. I can't help myself.

Mrs. FISCHBACH. Okay.

Mr. DUFFY. First of all, on the market data question that Mr. Bankman-Fried continually says how it is free, we never charge for market data historically at CME Group. We never did until just a few years back. The reason why we charge for market data, it is just not your data you are paying for. You are paying for a constructed amount of data that has a tremendous amount of value that I have to put a lot of effort in and cost into accumulating that data for people to do their risk management, whether it is historical data, whether it is derived data, or other data. It is not just market data on pricing. So it is really important to make that distinction about this free data that he keeps referring to. We sell quality data that brings benefits to the participants. But it would cost us a lot of money to do it.

The model that is going to potentially be deployed, Mr. Bankman-Fried keeps reminding everybody that he does not have any intention right now to go into other products. He has the ability to do so. His application says he can do it. So I am supposed to sit on the sideline while they decide if they are going to do it or not, and they will be way ahead of me because they are doing it in a crypto asset class. So what will happen is they will do it—the ag community will go with him when times are stable. When they hit the fan, they are going to want to come with me. I am not going to be there because I will be deploying the same model. This is a nightmare for the agricultural community.

Mrs. FISCHBACH. Thank you, Mr. Duffy. And I have 6 seconds, and I will yield all of those 6 seconds back. Thank you.

The CHAIRMAN. Thank you very much. And now the gentleman from California, Mr. Khanna, is recognized for 5 minutes.

Mr. KHANNA. Thank you, Mr. Chairman. Thank you for your leadership. Thank you to Ranking Member Thompson for his leadership.

Mr. Duffy, you obviously have very strong opinions about cryptocurrency, so let's start with the basics. Could you tell the Committee what you understand and how you define *blockchain,* and can you tell us some of the use cases of cryptocurrency for the American public?

Mr. DUFFY. Yes, I had a conversation with somebody in the industry, and I believe that the use case of cryptocurrency——

Mr. KHANNA. If you could start with the definition of *blockchain.* How do you understand blockchain?

Mr. DUFFY. The blockchain is a node either centralized or decentralized run by different platforms with parts of information that only certain people that have access to it can change that information. And once it is in the blockchain, it stays there. And in order to amend the information, there are a lot of procedures and protocols to go through the blockchain. It is a very complicated procedure. I think it is an excellent form of commerce for medical records, things of that nature, so I do think that——

Mr. KHANNA. And what do you see as some of the use cases?

Mr. DUFFY. Use cases of blockchain?

Mr. KHANNA. Yes, and cryptocurrencies and some of the——

Mr. DUFFY. Well, I don't know if there is a use case of—here, the one blockchain that has been talked about today is Ethereum——

Mr. KHANNA. Do you see a use case for stablecoins?

Mr. DUFFY. Do I think there is a use case—I am happy to answer your question, but which one do you want me to answer?

Mr. KHANNA. Stablecoins, yes or no, do you think there is a use case?

Mr. DUFFY. Do I think there is a use case for stablecoins? I think there was until the other day. That didn't go so well for stablecoins, so I am not so sure if there is a use case for them. I do believe central governments——

Mr. KHANNA. You don't think there is a use case for stablecoins? Okay. Do you think there is a use case for——

Mr. DUFFY. I think the United States Government, sir, needs to be involved and central banks——

Mr. KHANNA. I am just asking you do you think there is a use case for Solana or some of the other—of the top-ten cryptocurrencies——

Mr. DUFFY. I am not a crypto expert, sir. I list Bitcoin and——

Mr. KHANNA. Well, you certainly have opinions about cryptocurrencies.

Mr. DUFFY. I do. I have opinions on——

Mr. KHANNA. You are testifying——

Mr. DUFFY.—an application, sir, not about cryptocurrency.

Mr. KHANNA. Now, you talk about under oath, you say, if I could just quote you because you may want to take this back, I don't know——

Mr. DUFFY. I don't take anything back.

Mr. KHANNA. You say the FTX—well, you are under oath, sir.

Mr. DUFFY. I am not under oath.

Mr. KHANNA. FTX has no capital requirements for participants. Are you going to stick to that under oath? Because the CFTC's part 39 regulation requires capital requirements for FTX or for any of these exchanges. Are you really saying they have zero capital requirements, or do you want to amend that statement, given you are under oath?

Mr. DUFFY. No. Sir, you are moving away from your microphone. Can you read the statement that you would like me to——

Mr. KHANNA. Yes, I am asking you, sir, you have a saying that FTX has, quote, "no capital requirements for participants." I think that is on its face a false statement given that the CFTC part 39 regulation requires capital requirements, and FTX does have a capital requirement for margins.

Mr. DUFFY. I said the capital requirements are not the same as they are for other institutions.

Mr. KHANNA. Well, that is not what you said, sir. Under oath you have submitted to this Committee a statement that is false. You have said the regime has no capital requirements for participants. I would strongly recommend that you have someone on your team amend that statement——

Mr. DUFFY. Well, I would like to read that statement because I happen to disagree with you, sir.

Mr. KHANNA. Well, it is your testimony. It is your testimony.

Mr. DUFFY. I get it. I would like to see the statement that you are referring to.

Mr. KHANNA. I am reading from own testimony.

Mr. DUFFY. I can't just go off of what you are reading.

Mr. KHANNA. You are here to——

Mr. DUFFY. Capital is not the same as margin, Congressman.

Mr. KHANNA. Well, sir, I want you to, after this, submit something that is accurate, recognizing you are giving testimony to the United States Congress. You don't know much about cryptocurrencies, you are opining on cryptocurrencies, and then you are giving false statements to the Congress that you aren't even knowing that you are submitting. You write FTX, quote, "has no capital requirements for participants." That is just false.

Mr. DUFFY. Sir, I will be happy to read my testimony back to you if you would like, but if you want to make this into a court of law, I am happy to participate in that as well.

Mr. KHANNA. Well, it is not a court of law. It is that you can't give false statements to the United States Congress. You can't come in and say——

Mr. DUFFY. I am well aware, sir. I have testified in front of this Committee over 50 times. I am well aware of the procedures of this Committee.

Mr. KHANNA. Well, then can you—I would submit that you need to correct the record because you have, quote, your testimony, "no capital requirements for participants." Anyone who has basic understanding of the CFTC knows that part 39 would make that a completely wrong statement. Of course there are capital requirements, and I suggest in the future that you do some homework on what cryptocurrencies are——

Mr. DUFFY. Well, I appreciate you telling me to do my homework. I assure you, sir, in the amount of years I have been in this business I forgot more than most people ever know.

Mr. KHANNA. Well, I appreciate it. I hope you will correct the record so you are accurate and not giving false testimony——

Mr. DUFFY. I don't give false testimony, sir. It is not what I do.

Mr. KHANNA. I yield back my time.

The CHAIRMAN. The gentleman from Indiana, Mr. Baird, is recognized for 5 minutes.

Mr. BAIRD. Thank you, Mr. Chairman and Ranking Member, for holding this hearing. I always appreciate the effort that the witnesses make and the testimony that you give. To have such expertise before this Committee is extremely valuable to us, and I think it is valuable to whatever issue we are discussing.

But I am going to change just a little bit and ask this question. And I hope I can get each one of your response. So to do that, I better quit talking and start asking I guess.

The U.S. lags behind other countries in the adoption of digital assets with over 95 percent of the trading volumes occurring overseas, and I know you know that. So my question is, like some of my predecessors, how would this benefit Americans, including farmers and ranchers, if more of this trading activity were to be on-shored and take place in the United States? I think that is kind of the core of what we are trying to do here. So I guess I want to

do this in a specific order. Mr. Lukken, would you mind starting this discussion?

Mr. LUKKEN. No, I do think there has been an identified gap of regulation by many that cryptocurrencies need—we need to develop a framework in the United States to do that. I think it is a reality that they are here to say. I think it would be in our interest as a nation to try to develop a strong regulatory system for cryptocurrencies to attract that to the United States.

Mr. BAIRD. Great. So then I want to go to Mr. Edmonds. Since you are involved internationally, I would like to know your opinion of how that affects that market.

Mr. EDMONDS. Well, right now, I believe the delta that exists in the world is we don't know what regulator is responsible for what version of a *crypto asset* for the lack of a better term. You have the SEC expressing a desire to regulate parts of it. They will call those *securities.* You have the CFTC that will regulate part of it based on their charter. You have the United States Treasury who have made comments about that about the oversight they need to have. You have the Federal Reserve system exercising comments or providing comments around what they should do when it comes to stablecoin. So right now there is not a clear known path that we can all sit back and make rational commercial decisions at that moment in time to say these are how we are going to offer services if we so choose to do so. And so until that is settled, it seems very difficult of how you are going to regulate a market. And I think what FTX and others may be doing at the time is finding the closest thing they can get because they there still lacks a very consistent national message.

Mr. BAIRD. Thank you. And, the next one goes to Mr. Perkins. And as a Vietnam veteran, I will always let the Marines go in first.

Mr. PERKINS. *Semper fi,* sir.

Mr. BAIRD. But I would appreciate your opinion about bringing it onshore.

Mr. PERKINS. Absolutely. Web3 is here, and we can't put the genie back in the bottle. And what we do—we owe it to U.S. persons to have a very robust, regulated, thoughtful derivatives regime that allows them to hedge their risk. My belief is that what FTX has proposed is viable and needs to be considered because it addresses a few things. It addresses thoughtful risk management and what we call defaulter pays. The people that are putting risk into the system are paying for that risk via collateral.

It is more inclusionary. I ran an FCM, and it was very difficult for us to give capacity to anyone other than our top clients. And so what I would like to see here is to give the ability for market participants to hedge their risk. We talk about volatile markets. Right now, we haven't given these market participants the ability to hedge because the activity is offshore, and that is how I would answer it, sir.

Mr. BAIRD. Thank you very much. And so then, Mr. Bankman-Fried, would you care to comment about that same issue?

Mr. BANKMAN-FRIED. Yes, thank you. I completely agree, almost all of the activity is offshore. I think that does not do a service to our country. I think that means that the traders in our country do not have Federal oversight of cryptocurrency markets. It means

they don't have access to the same level of liquidity, depth of order book, or hedging that users in the European Union, in Japan, in Australia, and a number of other jurisdictions do today. It means that we don't have that economic impact here. We don't have those jobs here. And I think that it would serve a lot of interests at once to regulate these in the United States. And that is what we would love to be a part of doing.

Mr. BAIRD. Thank you. And, Mr. Duffy, we have about 25 seconds, so you got keywords.

Mr. DUFFY. On the business being overseas *versus* the U.S.?

Mr. BAIRD. Yes.

Mr. DUFFY. Listen, I think markets are global in nature. They have a tendency to go to certain jurisdictions, certain products do. Certain products are very domestic to the United States. Other products are domestic to the European Union, and others are to the Asian communities. So if cryptocurrency needs to be a global product, I am not so sure that is the case. I think when you look at who is participating in the crypto business today, someone made reference that one in five people have traded crypto. I truly believe that is mostly retail participants that have been in this market, not institutional participants managing risk.

Mr. BAIRD. Thank you. I yield back.

The CHAIRMAN. The gentleman's time has expired.

The gentlewoman from Washington, Ms. Schrier, is now recognized for 5 minutes.

Ms. SCHRIER. Thank you, Mr. Chairman. And welcome to our witnesses.

Look, my biggest priority here is making sure that consumers and my constituents have options for investing safely. Even the most discerning consumers can face challenges navigating potential tricks and pitfalls when making a financial trade. I think it needs to be really clear that all derivatives clearing organizations are abiding by the Commodity Exchange Act, which regulates commodity markets. I am really grateful that the CFTC is taking such a thoughtful and diligent approach to considering all the different facets of this new proposal to keep our markets fair and safe. I want to make sure we are doing the same thing here on the Agriculture Committee.

And so, Mr. Bankman-Fried, it is good to see you again. Can you tell me, how does FTX plan to strike that right balance between offering new financial products that may expand economic opportunities for investors while still ensuring consumer protections are maintained?

Mr. BANKMAN-FRIED. Thank you for the question, and great to see you as well. I think the central balance to strike here is extremely important. On the one hand we want to be able to offer equitable access to the platform, to the data so that the consumers have that same fair, level playing field as the largest trading firms do. On the other hand, we have to have all of the customer protections that we are used to in financial markets here. So, every piece of this is overseen directly by the CFTC in our proposal, and they would have oversight over it. We would be giving full transparency and disclosures about the products that we are listing, about the mechanics of the exchange of the venue, about how it works, edu-

cational material about it, tutorials that you have to go through before using it, quizzes about how the product works, along with full explanatory material on it, and we are also looking to create sort of template registration type statements for the assets that we are thinking of listing so that there is a lot of transparency data around the products that people would be trading and that we should only be listing things that are suitable for access here, and so that means working with the CFTC on that topic as well. These are just really, really important topics.

Ms. SCHRIER. I want to thank you for listing off all of those elements because when I hear the words—just as a consumer, myself, when I hear the words *transparency* and a list of all the risks, when I think of it, it is a lot of really small print that is really hard to understand, to read through, and to really grasp the concepts. I appreciate your talking about things like big print, common language, information sheets, and even quizzes to make sure people really understand what their risks are. Do you have any information about those quizzes or whether they paint—I mean, even pictures of things gone sideways so people really understand risk in terms of a story. We find stories work well.

Mr. BANKMAN-FRIED. Yes, and I completely agree that it is one thing to literally have text somewhere on a website, and it is another thing to have a clear, transparent, and comprehensible and intuitive explanation of what is going on. We can follow up with you and send you materials that we have put together on this that show graphically what many parts of this look like and would love to do that.

But, yes, I mean, this should be something that is intuitive when it is displayed and that you can't avoid looking at before you start using the platform because everyone knows that clicking *confirm* once for a giant scrolling box of text is something that people have gotten very good at doing.

Ms. SCHRIER. That is right, myself included. I want to thank you very much. I look forward to getting that information, learning more, and I appreciate your attention to protecting consumers. Thanks very much, and I yield back.

The CHAIRMAN. The gentleman from South Dakota, Mr. Johnson, is recognized for 5 minutes.

Mr. JOHNSON. Thank you, Mr. Chairman. I appreciate it. My question will be for Mr. Lukken, and then Mr. Bankman-Fried can offer any contrary thoughts he might have. But, sir, I listened with interest the exchange you and Ms. Adams had where you noted this auto-liquidate model mechanism particularly with regard to hedgers could impose, I think you said, "disruptive effects on the broader market." Educate me. Help me explain what those disruptive effects could be, and, again, maybe to people who are a few levels away from the transactions that are being reviewed?

Mr. LUKKEN. Well, typically when there is a default in the marketplace, the FCM will take those positions and try to manage that default and making sure that either hedging those positions or making sure that it is not being dumped necessarily into the marketplace because the last thing they want to do is either disadvantage their customer or—and FCMs are required by CFTC regulation not to have an impact on the market. That is a rule. And so

when you get into auto-liquidation, there is not a lot of discretion or judgment there, right? You are having to dump into the marketplace according to the algorithm.

So I think one of the things we are trying to explore with this new model, as the positions get bigger—and often times, hedgers have very large positions—as you start to put things into that auto-liquidation feature, is that going to have not only for the hedger but for other people that may be hedged in that price of that product, it may have an impact. And so that is something I think we are considering. Again, for small positions, auto-liquidation may not have a market impact, but as they get bigger, that is where we have some concerns.

Mr. JOHNSON. There has been some insinuation and probably even somebody said it explicitly that this particular mechanism could create more cascading waterfall-type impacts and a contagion-type environment. That may be. I just don't know that I understand that that is the case. Why do you think it would have more risk for the system?

Mr. LUKKEN. Well, it is like a typical financial run on a bank. As prices start to decline, defaults start to happen. When you start to cover those defaults, more auto-liquidation happens, and it starts to cascade. And, typically what CCPs like to do—and I worked at the CFTC as acting Chairman during the Lehman crisis. The futures business, by the way, was left whole. It was not the problem. But we were able to work slowly to move those positions to FCMs that could take on those positions. I know Chris was there in the trenches as well. But that is a way that we prevented a liquidation into the market so that the price and other futures hedgers weren't impacted.

Mr. JOHNSON. The FTX proposal, though, has some of their capital in a reserve, I think to be able to respond to some of these situations you are talking about. Is this suggestion then that that is an insufficient degree of capital?

Mr. LUKKEN. It is hard for us to know. I think they have scaled that, and it is a significant amount of money. However, for us, you are really trying to measure extreme but plausible situations. And whether three of their largest clients is extreme but plausible is a little different than the FCM model where they are extremely large. If you take two of the largest FCMs, that is ⅓ of the volume on an exchange. I don't think the FTX model necessarily to Cover-3 is extreme but plausible. I think that is worth exploring and understanding better.

Mr. JOHNSON. So, Mr. Bankman-Fried, the allegation has been that that is not a sufficient capital to cushion systemic risk and impacts. Your thoughts?

Mr. BANKMAN-FRIED. First of all, I agree with a lot of what Mr. Lukken said, and I think these questions are in good faith because they are important. Here is sort of my sense of them. First of all, I will note that our liquidations are partial. We go piece by piece. This doesn't solve all problems. At the end of the day, if a position needs to be closed, it needs to be closed, but we do take measures to attempt to do less if possible.

I will note, Mr. Lukken pointed out correctly that there are a lot of cases where it can be helpful to have an institutional party

which manages a position rather than liquidating it. We do have two systems in place for that. The first is the backstop liquidating provider system where there are institutional trading firms that are passed off positions in extreme market conditions if the order book can't handle them. But the second is that we do have optional intermediation where FCMs are welcome to play that same role with their clients where they can post the margin for the position and then work with their client or themselves or however they want on managing that, so we do have that as an option.

I will say on the amount of collateral here, I do actually think that the top three users on the exchange are going to be quite large. That is true if you look internationally right now that the top two users are a significant fraction of volume on the exchanges. These are generally either large intermediaries or large global multi-asset-class trading firms. But I will also say that the amount that we will put in the guarantee fund is way above what the standard would have required by a pretty substantial factor.

The CHAIRMAN. The gentleman's time has expired. And now the gentleman from California, Mr. Carbajal, is now recognized for 5 minutes.

Mr. CARBAJAL. Thank you, Mr. Chairman. And thank you to all the witnesses testifying before our Committee today.

It is extremely important that the U.S. is a place that innovation and digital assets can flourish and that U.S. consumers can enjoy the financial benefits associated with cryptocurrency. It is also, however, absolutely critical that innovations do not come at the expense of consumers. There must be protections in place to safeguard consumers so that they do not face financial ruin while some companies profit off that loss.

I think digital assets entice a lot of people because they offer an opportunity to quickly make a lot of money. But as is the case with any investment, not everyone will see the level of success they hope for. I know that whether you invest in traditional stocks, trade, derivatives through a traditional clearinghouse or purchase digital assets, there is always a risk.

Mr. Bankman-Fried, I think I am on the same page as you that increasing equitable access to markets is a good thing. You noted in your testimony that all users should have equitable access, quote, "so long as they are sufficiently informed and can demonstrate that they understand what they are trading," end quote. To that end, what steps is FTX taking to ensure new users, specifically retail users who may not be as experienced as traditional client base, are informed and able to demonstrate they understand what they are trading? How will you ensure individuals fully understand the risks they are taking should they choose to trade cryptocurrency on margin?

Mr. BANKMAN-FRIED. Thank you for the question. And I completely agree that that is incredibly important. The first thing that I will note is that the majority of the low engagement retail users who are not sophisticated traders do not access leveraged futures on the platform. They don't do that internationally today. The majority of them are accessing the spot markets, and we anticipate the same thing in the United States.

It is worth noting that today on the futures markets in particular over 90 percent of the volume is coming from users trading at least $100,000 per day. And so the bulk of the users here are larger users.

All that being said, in addition to having a large amount of transparency, disclosures, and material, there is a mandatory walk-through before you can trade on the platform, which explains how it works, how the products work and, for smaller users, a quiz that you have to take to demonstrate that you understand how this product works. And, we think the demonstrating understanding of the product and the exchange is an appropriate and extremely valuable test for who should be accessing this product while still allowing equitable access to the disadvantaged.

Mr. CARBAJAL. Thank you. That is very encouraging. Mr. Duffy, I agree that innovation must not fail to protect the consumer. As the digital asset market continues to grow, do you see potential ways for the clearinghouse model to evolve to better accommodate cryptocurrencies?

Mr. DUFFY. I would absolutely say yes to that, sir. I think that there is always ways to evolve the clearinghouses to manage risk. And again, I am not opposed to innovation at all. I am not opposed to the direct clearing model, as I have said. I am opposed to an application that does not allow all of us to participate and everybody to come together to see what this market structure is about.

I am here to discuss market structure. I am not here to discuss the value of cryptocurrencies or blockchains or anything else. I am here to talk about market structure.

And if I may, can I please for the record, sir, Mr. Chairman, if I may make the following statement. When I was getting badgered by your former colleague asking me a bunch of different questions, he was cherry-picking my testimony. What he failed to say that when I said there is no capital, there is no capital being held at the FCM. Today, there is capital of $170 billion you heard from Mr. Lukken and others. So the gentleman was completely wrong when he said that I gave false testimony. I gave absolutely correct testimony. There is no capital being held at the FCM under this proposal. So I just want to make sure I cleared the record. I apologize for not answering——

Mr. CARBAJAL. Thank you. You did take up my time——

Mr. DUFFY. No, I apologize.

Mr. CARBAJAL.—but I will accept your apology.

Mr. DUFFY. I hope the Chairman will give it back to you.

Mr. CARBAJAL. With that, Mr. Chairman, I yield back.

The CHAIRMAN. All right. That is fine. Thank you. And thank you, Mr. Duffy, for clearing your record. Thank you.

Now the gentlelady from Florida, Mrs. Cammack, is now recognized for 5 minutes.

Mrs. CAMMACK. Well, thank you, Mr. Chairman. And as the millennial in the room—well, I guess now there are two of us in the room—I want to open up with saying, as a disrupter, I like disrupters. And I think it is very clear, given the amount of comments and feedback that we have received and the CFTC has received on this very rulemaking process, that there is a lot of interest and a lot of concern and vested interest in this process.

So looking at how 95 percent of crypto derivatives and the trading volume occurs outside the United States, I would say that this is an opportunity. And I like opportunities. I believe America is based on equal opportunity, not equal outcome. So there are some issues that we need to overcome, and I think we can. And I believe that innovation is going to be absolutely critical as we move forward.

So I am going to dive right into it. We don't need to separate you all, do we? All right. Well, it has been a very colorful hearing thus far, so we are looking forward to all of the feedback from you all.

Mr. Bankman-Fried, how are investors impacted by the current system in which derivative marketplaces demand users to pay for market data, order books, and market access?

Mr. BANKMAN-FRIED. Yes, I think that makes it very hard to have the same level of access as a smaller user as the largest trading firms have. It means that you don't get to see what is happening in the markets you are sending orders to. It means you don't have the same transparency about what orders are in the book about depth. And that is all relevant trading information, which is gated on the amount that you are willing to pay for it. It also means that price discovery is not made fully public, and that is one of the core goals of marketplaces, in addition to hedging.

And so I think that those are all reasons I—and I will add one more as well, which is I think frankly it increases operational costs to have gated market data. It is not always well-defined exactly what it means to use market data, exactly what it means to consume it. I know firms that spend large fractions of their time arguing with other platforms over exactly what market data is required exactly where and licenses required for that, and I think it is also just cleaner and lets people innovate on our data if they want to, to make it open.

Mrs. CAMMACK. Well, you answered two of my follow-ups, so thanks for that. Would the FTX—or I guess how would the FTX real-time risk management of margin products affect market risk and asset volatility, especially during times of market uncertainty like we have seen with the war in Ukraine, for example?

Mr. BANKMAN-FRIED. Yes.

Mrs. CAMMACK. And I will throw another one at you. So would it have prevented—your system, would it have prevented like what we saw with the nickel futures and that market meltdown with the London Metal Exchange?

Mr. BANKMAN-FRIED. Yes, thank you. I do think it would have helped prevent that. And, the way I see it is that if you have a real-time precise risk engine that knows the exact amount of collateral that a user has and can act promptly, I think it is often viewed as being punitive to the user. I don't think that is how it is. I think what it means is that you don't have to preemptively liquidate them out of fear of where our markets will move, and it means that you don't have to ask for as much collateral at the beginning or if you do ask for the same amount of collateral that they have a much bigger buffer before their position would be in danger of liquidation, given the promptness with which it can act. And it means that you can operate a model without recourse so that people know that they can't lose more than they deposited to the platform, that

they are not worried you are going after their bank account or their house. You can accomplish all of those things more cleanly with a real-time risk model that can wait until a position is nearing being out of margin before closing it down while still preventing systemic risk and being on recourse.

I think those sort of things would have helped substantially prevent what we saw with the LME nickel futures where, first of all, it was unclear where the collateral was if it was even there, and then it took days for the exchange to figure out what had even happened, by which time nickel had kept moving. The position was billions of dollars underwater before there was any transparency to the system on what happened. And so I think all of these would likely have helped mitigate that.

Mrs. CAMMACK. Well, thank you. I have only got about 30 seconds left and, Mr. Edmonds, I have a very lengthy question for you, so I am going to have to submit it for the record. There just simply isn't enough time to really cover what we need to cover here in talking about market structure and this proposal. So with 13 seconds left, Sam, you mentioned that you are not getting interested, in your words, into getting into the ag markets anytime soon. Can you explain that just a little bit?

Mr. BANKMAN-FRIED. Yes, I mean, I think I am interested in the markets, but I think they need more analysis. I think, as other people have been pointing out, different market structure, different settlement, different timing, it just needs more thought.

Mrs. CAMMACK. Thank you.

The CHAIRMAN. Thank you very much. And the gentlewoman from Virginia, Ms. Spanberger, who is also the Chair of the Subcommittee on Conservation and Forestry, is now recognized for 5 minutes.

Ms. SPANBERGER. Thank you very much, Mr. Chairman. I have appreciated this conversation. It has been incredibly interesting, so thank you to our witnesses for participating.

Mrs. Cammack, I should have additional time if you would like for me to yield to your to continue your question. I am happy to do it because I have so many questions I actually want to just diverge completely and speak from the perspective of someone who is the Chair of Conservation and Forestry. I really just want to have a general conversation, though quick because I have already offered Mrs. Cammack my time, about the impacts of digital assets, particularly cryptocurrencies have on the environment and really what these investments mean potentially for sustainability. We know according to the University of Cambridge Bitcoin mining alone requires 132.48 terawatt hours of energy annually. And for context, this energy use easily surpassed the annual energy use by the nation of Norway in 2020. So roughly 35 percent of all Bitcoin mining takes place in the United States. And according to the Energy Information Agency, this is translated into roughly 40 billion tons of carbon dioxide produced by U.S. Bitcoin mining in 2021 alone.

Certainly, Mr. Bankman-Fried, I know that you speak to the commitment of carbon neutrality in your testimony, but I would like for you just to expand on that a little bit. Like how can we make sure that as we are looking at a forward-looking technology,

et cetera, et cetera, that we are also finding opportunities to really reduce emissions? I think people don't think about the environmental impact of Bitcoin, but I do think it is a serious issue to consider.

Mr. BANKMAN-FRIED. Yes, thank you for the question. I completely agree. And, there is one practice where we do buy carbon offsets and on top that we invest in R&D. Let's put that aside for a second though because I can only scale so much. In the end, my real answer is that if you would see the crypto industry scale 10, 100 times as big as it is today, it would be insane for the energy usage to be scaling as much as well for the reasons you are point out.

I also don't think it would, and the reason is that while Bitcoin is a proof-of-work blockchain that is energy intensive, most other blockchains are proof-of-stake blockchains that have effectively no energy cost to them. The bulk of transactions already are happening on low-cost proof-of-stake blockchains. And for economic reasons as well as environmental reasons those have to be the ones that scale. You can't be paying $10 for every transaction in a scalable system. And so while Bitcoin may or may not end up being a large storer of value—don't want to give investment advice or anything—that doesn't mean that it has to be the blockchain on which millions of transfers are happening per second. And to the extent that blockchains do grow in size, I think it has to be and will be the low-cost proof-of-stake networks that will not be expanding the climate impact of the ecosystem.

Ms. SPANBERGER. Thank you. I might follow up with additional questions for the record, but as I have offered my time, and I am curious to hear the question, Mrs. Cammack, in the interest of bipartisanship, over to you.

Mrs. CAMMACK. Well, thank you, Representative Spanberger. I appreciate you yielding your time.

This is a little bit in the weeds so bear with me here, all right? Mr. Edmonds, you noted that, quote, "FTX participants lose their positions when markets move against them, and they are liquidated at adverse prices," end quote. But some market participants in volatile markets, especially agriculture markets, have noted a similar effect occurs with exchange circuit breakers when trading is halted for the day if prices move too much. In traditional markets, significant volatility plus a halt in trading can result in large unaffordable margin calls at the end of the day. If a participant cannot make their margin call, their position is liquidated and their initial margin is taken up to make up the difference, both closing out a potential hedge and costing the participant their initial margin. But the real kicker comes when the market reopens and the volatile price swings back the other way, returning the now liquidated position to profitability. How different is that scenario under traditional markets from the scenario that you laid out in your testimony? In both cases, the hedger is out of a hedge and collateral.

Mr. EDMONDS. Right, but in the——

Mrs. CAMMACK. Sorry, I know that was a mouthful.

Mr. EDMONDS. I will try to be as brief as possible. In the traditional marketplace, you have the FCM in most cases intermedi-

ating that relationship. They may be in certain circumstances extending you credit based on their knowledge of your known physical position. And they see that and that is a relationship you have and that is a credit relationship you have with that intermediary. There is no chance for that in the case here.

I would also say as to the point of volatility, the price in the morning can be very against your position and a few hours later that position before the market session closes can come back into your position. In this case without a liquidation you have already lost that. In the other case you are going to have that position on an overnight when the market closes and the price is set and you are going to determine whether you pay for that or not, and that is going to be between you and the relationship you have with your FCM.

Mrs. CAMMACK. Well, and I know I just ran out of time. I would love to get your rebut to that as well just so that all of us can really understand all sides of this.

[The information referred to is located on p. 217.]

Mrs. CAMMACK. But with that, I yield back unless any other Members want to yield their time.

The CHAIRMAN. The gentleman from Georgia, Mr. Allen, is recognized for 5 minutes.

Mr. ALLEN. Thank you, Mr. Chairman.

And, the market is very volatile, as we know. In fact, Mr. Bankman-Fried, you have had a tough couple of days here. In fact, it reminds me of the story in 1987 I think Sam Walton, which we all know was the first investor to lose $1 billion in a day. And he was asked the question, my goodness, what are you going to do? And he says, well, it is only paper, and we are still in business.

So with that, Mr. Duffy, obviously, we are seeing tremendous fluctuations in obviously the market, crypto, otherwise. Your protections, how much are they fluctuating?

Mr. DUFFY. Which protection are you referring to?

Mr. ALLEN. Your collateral.

Mr. DUFFY. Sorry?

Mr. ALLEN. Your collateral——

Mr. DUFFY. My collateral at the clearinghouse fluctuates—it is probably sitting out about $225–$240 billion right now sitting in my clearinghouse protecting positions on the exchange.

Mr. ALLEN. Okay. As I understand the purpose that we got into this business is to get rid of volatility for our farmers. In other words, they produce a crop, and they make a substantial investment to produce that crop, and so they need to know about what that crop was going to be worth when they harvest it. And of course we had what happened in 1982 that we lost a lot of our agriculture industry in that one sweep. And of course we started coming up with other ways to stabilize the markets.

And of course your system, I think there are two companies that largely have been in this business to stabilize. A farmer comes to you, he says I will sell my corn at this, you place it, and then the risk is appropriately shared. So how much fluctuation—like we are talking like, Mr. Bankman-Fried, I understand it was half of his value was lost. What would it represent as far as your market and

your collateral? Like would it be ten percent down or 20 percent down or based on these fluctuating markets right now?

Mr. DUFFY. The fluctuating markets in the agricultural markets?

Mr. ALLEN. Yes, sir.

Mr. DUFFY. Very *de minimis,* sir.

Mr. ALLEN. Okay. That is——

Mr. DUFFY. Very *de minimis.*

Mr. ALLEN. Which is what we are trying to accomplish with this whole business anyway.

Mr. DUFFY. Yes, sir, and it would be very, very small.

Mr. ALLEN. Yes. And the other question, Mr. Bankman-Fried, for you, is you have submitted an application to the Commission for approval. Why is that application incomplete?

Mr. BANKMAN-FRIED. Sorry, can you—why is it incomplete?

Mr. ALLEN. Okay. Well, you are saying that there are other measures that need to be implemented to sustain your collateral. And you are looking for guidance from the Commission on that? In other words, let me understand what you are up to here. You are the one that is coming to ask for approval, yet you are basing your approval on whatever the Commission says you have to do. I would think you would have all of your ducks in a row before you submitted the application.

Mr. BANKMAN-FRIED. We do think we have all of our ducks in a row.

Mr. ALLEN. Okay. So then why do you think the Commission is going to require you to do other things?

Mr. BANKMAN-FRIED. What are you referring to?

Mr. ALLEN. Well, I don't know. What I gathered from comments my colleague from Georgia, Mr. Scott, said from your collateral standpoint and the fluctuations this commission—because again, we are talking about agriculture here, the farmer, and stability. How are you going to provide that when you are seeing these fluctuations in the market?

Mr. BANKMAN-FRIED. Are you asking how we would provide to agricultural parts in particular or are you asking about the collateral volatility? I am sorry, I think I don't understand what you are referring to.

Mr. ALLEN. Okay. Well, we will try to educate Mr. Bankman-Fried on how agriculture works. Thank you, and I yield back.

The CHAIRMAN. Thank you, Mr. Allen.

And now the gentlewoman from the U.S. Virgin Islands, Ms. Plaskett, who is also the Chair of the Subcommittee on Biotechnology, Horticulture, and Research, is recognized for 5 minutes.

Ms. PLASKETT. Thank you so much, Mr. Chairman, and thank you for you and your staff's leadership in assembling this really great panel of witnesses for us to try to understand and to get into what is happening at the CFTC, what is happening with regard to the commodities exchange, and what is actually going on within crypto.

A little earlier in the discussion I was right there in the hearing room, and one of my colleagues said that he had decided that he had made maybe the wrong decision in terms of his career choice, and everybody laughed. But we recognize that those of you who are witnesses are there because you have obtained a level of intellect

and a level of understanding of these that doesn't come very quickly. And to make such a statement to me really reveals a kind of sense of failing forward. There are those of us in our society who are allowed to fail forward and those of us who are not, who do not have that luxury.

And I feel it is part of my responsibility to be concerned with, one, the consumers who may fail forward and fail because of the activities of all of the witnesses that are here today, whether it is a commodities exchange that has kept certain classes of farmers out of the benefits over 100 years of the use of the commodities practice and commodity farming, or whether it is the young individuals who are underbanked who see crypto as a way to gain wealth, which is very tenuous at best for them. And so I believe that we as Members of Congress have a responsibility to safeguard all of those areas.

Some of the questions and the testimony I thought was very instructive to me, Mr. Perkins, one of the things that you discussed in your testimony was that you did not believe that there was a negative impact of embracing the innovation. However, some guardrails needed to be put in place. What guardrails? Have you thought about that, what the guardrails might be that would be best to put in place to ensure safeguarding and allowing the innovation and allowing this growth in technology while preserving the American farmers, as well as those individuals who even engage in cryptocurrency?

Mr. PERKINS. Thank you, Congresswoman, for your question. Related to the issue at hand with central clearing, it would be my belief that the same principles should be applied to FTX as applied to the CME and everyone else. And so when you look at ways to collateralize the system, it should be extreme but plausible. We need to make sure that there are sufficient disclosures for people who understand the risks of participating as well.

But if you step back, I think it is imperative for all of us to make sure that people are educated not only on the opportunities but also the risks of entering into these asset classes. And I look forward to working closely with the regulators on ensuring that the approach is always principles-based, right. And, listen, the CFTC today, they have full authority to police issues of fraud, manipulation, and abuse. We should have very little tolerance for those types of things in this environment, along with the other regulators.

Ms. PLASKETT. Thank you for that. I agree with you, and I think the education portion is very important. I am always very, very skeptical of a new product or a new scheme that is actually even attempting to go after minority communities, individuals who have been kept out. Why are they all of a sudden being allowed in? It could be altruism but it could also be to their detriment.

One of the things that I think has not been asked to Mr. Bankman-Fried is, sir, one of the discussions is that we should have followed a longer process, the regular process that CFTC does, which is to have public comment, regular rulemaking. Would you be averse to a discussion of regular rulemaking?

Mr. BANKMAN-FRIED. So I think we have followed along with the standard CFTC process. It is not standard to——

Ms. PLASKETT. I think that they created a process that is a little *ad hoc* for you, but it does not follow the regular public comment period.

Mr. BANKMAN-FRIED. I don't think that it is normal to have rulemaking as part of a margin order amendment. I think that is actually quite unusual. I think it is unusual to have a House hearing as part of a margin amendment. I think it is unusual to have a public roundtable. I think it is unusual to have a public 60 day comment period. To the extent that it is unusual, it is in the increased transparency and thoroughness of it rather than the opposite. But I would be happy to follow up with you after and go through cases and see what the standards and precedents are here.

Ms. PLASKETT. Thank you. And I have quite a number of other questions, Mr. Chairman, but I will save those for in writing. And I want to thank you again for allowing us this opportunity.

The CHAIRMAN. Yes. Thank you, Ms. Plaskett.

And now the gentleman from Texas, Mr. Cloud, is recognized for 5 minutes.

Mr. CLOUD. Thank you, Mr. Chairman, for this very informative Committee hearing, and thank you all for participating in it and sticking through it for this long. It has been a lot of fun for me, maybe not so much as much for you all, but it has been very enlightening, nonetheless. And whoever's idea was to sit you two gentleman next to each other, genius. No.

But it is very helpful to have the back-and-forth. So many committee hearings it is kind of the debate is decided before we actually get to the committee hearing, and this is one I think where your expertise and your wisdom weighing into this is extremely helpful to us who are trying to grasp this new developing technology and how it would be.

Speaking of first principles right off, I am concerned anytime about the government stepping in and picking winners and losers. I think it is important that we don't stop what would be disruptive technologies just because it protects the *status quo,* especially when the *status quo* is a middleman. And I am just speaking broadly here. But I also am very concerned about the government stepping in and endorsing one business model as well and what that would mean. And especially just in the context of where we are at right now, you mentioned the food shortages, which I wish this Committee would focus more on. And right now we have White House more concerned about disinformation than we do baby formula and those kind of things. So I am very concerned about that. We need to spend more time on that. And to have a disruptive technology in this window is a concern to make sure that that doesn't go wrong.

If you all could help me with this, kind of entertain me, Mr. Bankman-Fried, if I can see that correctly, and Mr. Duffy. If you all could each kind of do this for a second. If we were to assume that his model was going to be accepted, what would you say, okay, let's do that but these are the provisions that we have to consider, and likewise? If it was to not be, like, okay, what are the considerations here about going—the future that we are not creating, the things that we are not protecting going forward? If you all could——

Mr. DUFFY. I would be happy to start if you would like.

Mr. CLOUD. Okay.

Mr. DUFFY. If Mr. Bankman-Fried's model was to be accepted, I would say a couple things. One, it needs to go through a regular rulemaking process to answer the gentlelady's question earlier because it is not just a margin model. This is a market structure issue that affects the entire industry, not just margin. So that is for starters. That is the reason why it needs to go through a full review. So the gentlelady was correct.

So what would happen, what I would do if in fact it got passed, I would implement the model myself. And I do not think it is appropriate to do at this given time. I would want to implement the model if it was approved with the communities that is affected throughout the globe that trade these global markets in nature. That is critically important to make sure that people are brought into the process and not surprised by the process. So I am not opposing it. I am saying let's do it in a way that makes sense for everybody.

Mr. CLOUD. Yes, one of the things you mentioned, too, was weekends seemed to be a concern that kind of came up, I mean, one of the little pragmatic things. I know that is not a systemic thing, but how much of that is part of——

Mr. DUFFY. Systemic risk in the——

Mr. CLOUD. In weekend trading.

Mr. DUFFY. Oh, I am sorry, I didn't hear the weekend trading. You know what, I guess for some people there is no systemic risk. I know Sam likes to kind of go 7 days a week hard. There are other people that are in our farm community and others that need a day off and they really don't want to be interrupted with their hedges being auto-liquidated in a time when they are trying to at least take an hour off in their day of providing food for the country.

Mr. CLOUD. Yes, thank you.

Mr. BANKMAN-FRIED. Thank you. So, in terms of what would happen—and I think I want to talk less about our application in particular. I am taking this is a policy question rather than a competitive or anticompetitive question around like our company in particular. I think if in general there were not to be licensure of digital asset platforms in the United States, we would continue to see a regime where the United States is the only developed country that cannot access deep liquidity in crypto markets that cannot access hedging for them. It is the only developed world in which there is very little Federal oversight of the digital marketplace, very little anti-fraud, anti-market manipulation oversight, no clear Federal regulator for the majority of the platforms, and it would mean that this industry would continue to grow offshore rather than here with oversight from offshore regulators, not from our regulator. It would grow in other currencies as the base currency for the cryptocurrency system rather than the U.S. dollar. And I think that all of those would harm American consumers and the American economy.

Mr. CLOUD. Thank you. Mr. Lukken, I wanted to get to you but I only have 5 seconds. I am really curious to hear your thoughts because I have seen you nodding on all sides of this argument, and you were the only one that I heard use ag and livestock metaphors,

and so I know this Committee really appreciated that. So do you have a quick—okay. Thank you.

The CHAIRMAN. The gentleman from Florida, Mr. Lawson, is now recognized for 5 minutes.

Mr. LAWSON. Thank you, Mr. Chairman and Ranking Member. This is quite interesting. Mr. Bankman-Fried, you mentioned in your testimony that FTX would utilize real-time liquidation features to prevent the buildup of risk in the customer portfolio. How would this risk management and liquidation affect market risk and asset volatility, especially during the times of market uncertainty, as we are seeing of course recently with what is going on in Ukraine?

Mr. BANKMAN-FRIED. Yes, thank you for the question. Derivatives markets can help to buffer volatility, to reduce it, and to add liquidity. They can also help exacerbate volatility, in some circumstances or if poorly defined. I think that our model would help reduce volatility and increase liquidity. And the reason for that is that by having precise knowledge of the collateral in the system and having a fast margin engine that can act swiftly if needed, it allows the risk engine to avoid having to liquidate positions that might not need to be liquidated until it becomes clear that they are in fact nearly out of collateral while also still successfully closing them down before an account would go bankrupt. And so I think it does a good job of balancing against the market risk and the systemic risk there, which is massively harder to do if you have less transparency, less clarity, and a less fast-acting risk system.

Mr. LAWSON. Okay. Thank you very much. Mr. Perkins, I think it was stated earlier that U.S. lagged behind other countries in the adoption of digital assets with over 95 percent of the trading volume currently overseas. The question is for you and maybe some of the other panelists can speak on it. What facts do you believe are preventing the growth of cryptocurrency trading in the U.S., and how would Americans, particularly farmers, benefit from these type of trading platforms?

Mr. PERKINS. Thank you for the question. I think one of the reasons why we haven't seen derivatives migrate into the U.S., regulated derivatives for purposes of risk management, is because the current structure as it exists today is inadequate to handle the volatility of the products. The risk builds up with the FCMs, the intermediaries, and they simply don't have the capacity to offer this hedging mechanism to clients. And to the extent they do, they can only give it to their tippity-top clients, which isn't very good from an inclusive perspective.

And so I welcome innovation that we are seeing like with this direct model which does look at things such as thoughtful risk management, inclusion, and competition, and how will this benefit community members. I think competition will lead to better pricing. And in fact, you are eliminating the pricing of the intermediary, so I think it would be very beneficial to endorse a model such as this to allow our communities to hedge their risk.

Mr. LAWSON. Anyone else on the panel who would like to make a statement on this?

Mr. LUKKEN. Well, I would take a little issue with the idea that the demise of the FCM, that they are not able to handle access. I

mean, there are plenty of firms under the current clearing system that handle retail clients, that handle retail crypto clients, that we have exchanges that are offering products for crypto. So certainly this is another method for access, but we have lots of great firms that are willing to take on these clients in our industry.

Mr. LAWSON. Okay, thank you. One other question, and this is for Mr. Bankman-Fried, if the Commodity Futures Trading Commission approved your proposal, do you have mechanisms and programs in place to address the barriers small and socially disadvantaged farmers may have to utilize this platform as an exchange?

Mr. BANKMAN-FRIED. Sorry, could you repeat the last bit?

Mr. LAWSON. Do you have the mechanisms and programs in place to address the barriers small and socially disadvantaged farmers may have to utilize the platform in this exchange?

Mr. BANKMAN-FRIED. Oh, thank you, a really important question. I will say it is really important that we have transparency, disclosure, education, suitability, and testing on the platform to ensure that the users do understand it. But at the same time it is really important that disadvantaged communities are able to get real financial access in a way they have not historically had an easy time doing. We offer the full product suite. We offer it online. We offer it on a phone. We offer it via API. We offer all the tools that you need to do it. The compliance is built into it, but you can fund it directly. And, we are actually overrepresented in minority communities on our platform.

Mr. LAWSON. I yield back, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Lawson.

And so, gentlemen, we come to the end of this extraordinary and very beneficial and informative hearing. And I want to thank each of you. We are going to do two things. I want to see if our Ranking Member would like to make a closing statement, and then I will make my closing statement on what we have experienced today. And, first of all, before—oh, here is our Ranking Member, and I was just letting them know the order.

But before that, I want to thank each of you. I want to thank you, Mr. Terry Duffy, Chairman and Chief Executive Officer of the CME Group. Your testimony was very, very helpful.

I also want to thank you, Mr. Sam Bankman-Fried, who is Chief Executive Officer and Founder of FTX US Derivatives. Thank you for your informative and helpful presentation.

Our other witness, my friend Mr. Walt Lukken, we have worked together over a number of years as you were Chairman of the CFTC when I was Chairman of our Commodity Exchanges, Energy, and Credit Subcommittee. Thank you.

And our fourth witness was Mr. Christopher Edmonds, Chief Development Officer of the Intercontinental Exchange, which we all affectionately call ICE.

And our fifth and final witness today, Mr. Christopher Perkins, the President of CoinFund Management LLC, thank you for your very helpful and beneficial presentation and testimony.

And before I give my closing remarks, I am going to turn it over. He is writing feverishly getting all of it down, our distinguished Ranking Member, Mr. Thompson of Pennsylvania, and then I will end it with my closing remarks. Ranking Member?

Mr. THOMPSON. Mr. Chairman, thank you so much. And to each of the witnesses, thank you for being here. I appreciate we were able to do a balanced hearing on an important issue.

The CHAIRMAN. Please mute your phones, please, Members. Thank you.

Mr. THOMPSON. All right, thanks, Mr. Chairman.

The Commodity Futures Trading Commission is empowered to use a transparent, principle-driven-based process to consider any proposals, including the ones submitted that was the point of discussion today, although we did talk a little more broadly on, quite frankly, that process. And I think the process is the important part of the discussion today.

I am hopeful that this transparent, principle-driven process, the CFTC, that the discussions today may be informative. We heard a diversity of views, and so that is my hope, that what we heard today will help to be informative of the process that they are engaged with this specific proposal.

CFTC must ensure that stakeholders and the public have a seat at the table. The Agriculture Committee's role is not that decision making. It is oversight of the CFTC, to include where the CFTC fails to follow the appropriate process, where we have a role. That is part of our oversight role. Where the CFTC would deviate from the law, we have a role to play. Where the CFTC unnecessarily limits debate, we have a role. The Agriculture Committee has a role to play. And let's be clear, none of this has happened. None of this has happened so far.

At the CFTC, my understanding is we have had right around 1,000 comments have been received, and when they publish for public comments, I am assuming that some of those, a number of those, hopefully a lot of them will be instructive and informative in this process. The stakeholder roundtable is scheduled for later this month, the 25th of May, so that is much appreciated. They are going to bring experts to the table to really kind of do an analysis of those public comments.

And, as the House Agriculture Committee, the trading of traditional agriculture commodities obviously is critical, and that is why CFTC was born within the U.S. Department of Agriculture. But as we saw how effective that was, other commodities were added under the CFTC's jurisdiction. So our jurisdiction over the CFTC provides a responsibility for other critical commodities, energy, gold, digital commodities. And I have confidence in CFTC that the Commission will continue their informed, transparent review of this proposal and all other proposals. This is not the only proposal obviously they received and will receive in the future. That is why making sure the process is the way it should be, that is why it is so important.

I would be remiss if I didn't encourage every Member of this Committee—and this is outside of this issue—but to join Mr. Khanna and myself as a cosponsor of H.R. 7614, the Digital Commodity Exchange Act of 2022, that would establish effective oversight of digital commodities, define oversight of digital commodity markets without diminishing the innovation and the creativity that has established, quite frankly, the United States as a global leader in this field.

And so to the witnesses once again for your testimony and, Mr. Chairman, thank you so much.

The CHAIRMAN. And thank you, Ranking Member, for your excellent closing remarks.

Ladies and gentlemen, again, thank you, all five of you. You have been extraordinarily helpful. First, I also want to thank my committee staff, who has worked hard to pull this together. They have done an excellent job, and I am most grateful for their hard work on this.

What today's hearing showed us is that we have a serious, serious issue here. What concerns me is we have to make sure that we have the protections there for our clearinghouses because they are the anchors for dealing with this growing derivatives market.

The other point is that this is international. And, ladies and gentlemen, we have enemies out here. You have Russia, you have Iran. I guarantee you they are watching this hearing. They are all looking for—not just them, the Revolutionary Guard of Iran. They are looking for ways in which to weaken our financial system. This is what makes us the greatest, most powerful nation on this Earth. And the good Lord has blessed us with bountiful agriculture, which is the major piece of derivatives and swaps. They deal in commodities, and that is why this Agriculture Committee is determined to make sure that this is protected.

Now, this new cryptocurrency, you have heard from the witnesses here. Everybody knows it is new, it is vulnerable, it is going through its growing processes. Nobody is against it. What we are for is to make sure we deal with this new cryptocurrency with its vulnerability, with its volatility, we have to solve that. It cannot be handled and entered into our financial system until and unless we eliminate this vulnerability, this uncertainty.

And so this is why I mentioned to the Chairman of the CFTC when he was here and let us know he was dealing with this to hold up until we could get this hearing going on. I appreciate that. We are all in this together.

But I want you to know that we have enemies around this world who want to destroy this nation. And the one most vulnerable way, history is cluttered with the wreckage of great nations because they did not protect their financial systems. And so with that I wanted you to know the importance of this hearing, and you all have delivered to us valuable information. And this Committee, as you heard from the questions and the differentiation, are very much concerned that, as we go down this road, we go down it with the understanding that the future of our nation's security is in our hands.

Thank you all very much, and I look forward to working with each and every one of you as we move forward. Thank you. Oh, now, thank you for that. I must take care of this business before we go.

Under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witnesses to any question posed by a Member.

Therefore, this hearing of the Committee on Agriculture is adjourned. Thank you all very much.

[Whereupon, at 1:00 p.m., the Committee was adjourned.]
[Material submitted for inclusion in the record follows:]

SUBMITTED MATERIAL BY HON. DAVID SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

THE FTX PROPOSAL—LEDGERX LLC D/B/A FTX US DERIVATIVES

Item 01—CFTC Press Release

[*https://www.cftc.gov/PressRoom/PressReleases/8499-22*]

Release Number 8499–22

CFTC Seeks Public Comment on FTX Request for Amended DCO Registration Order

March 10, 2022

Washington, D.C.—The Commodity Futures Trading Commission (CFTC) has received inquiries from derivatives clearing organizations (DCO) or potential DCO applicants seeking to offer clearing of margined products directly to participants, such that participants would not clear through a futures commission merchant intermediary (non-intermediated model). Currently before the CFTC is a formal request from LedgerX, LLC d.b.a. FTX US Derivatives (FTX) to amend its order of registration as a DCO to allow it to modify its existing non-intermediated model. FTX currently operates a non-intermediated model and clears futures and options on futures contracts on a fully collateralized basis. In its request for an amended order of registration, FTX proposes to clear margined products for retail participants while continuing with a non-intermediated model.

The CFTC is seeking public comment on FTX's request, including both on specific questions and policy issues raised by use of a non-intermediated model in this manner. The questions are available *here*.[1] CFTC recommends potential commenters to review FTX documents at this *link*[2] as you are considering your comments. Comments may be submitted electronically through the CFTC's *Comments Online*[3] process. All comments received will be posted on the CFTC website. Comments should be submitted on or before April 11, 2022.

Item 02—CFTC Press Release

[*https://www.cftc.gov/PressRoom/PressReleases/8505-22*]

Release Number 8505–22

CFTC Extends Public Comment Period on FTX Request for Amended DCO Registration Order

March 24, 2022

Washington, D.C.—The Commodity Futures Trading Commission is extending the deadline for the public comment period on a request from LedgerX, LLC d.b.a. FTX US Derivatives (FTX) to amend its order of registration as a derivatives clearing organization (DCO).

FTX currently offers clearing of futures and options on futures contracts on a fully collateralized basis directly to retail participants (non-intermediated model). In its request for an amended order of registration, FTX proposes to clear margined products for retail participants while continuing with a non-intermediated model.

On March 10, 2022, the CFTC announced that it is seeking public comment on FTX's request, on both specific questions as well as policy issues raised by use of a non-intermediated model in this manner. The CFTC is extending the deadline by which comments must be received by 30 days, such that comments should now be submitted on or before May 11, 2022.

The CFTC is seeking public comment on FTX's request, including both on specific questions and policy issues raised by use of a non-intermediated model in this manner. The questions are available *here*.[1] CFTC recommends potential commenters to

[1] *https://www.cftc.gov/media/7031/CommentFTXAmendedOrder/download.*
[2] *https://sirt.cftc.gov/sirt/sirt.aspx?Topic=CommissionOrdersandOtherActionsAD&Key=47841.*
[3] *https://comments.cftc.gov/PublicComments/CommentList.aspx?id=7254.*
[1] *https://www.cftc.gov/media/7031/CommentFTXAmendedOrder/download.*

review FTX documents at this *link*[2] as you are considering your comments. Comments may be submitted electronically through the CFTC's *Comments Online*[3] process. All comments received will be posted on the CFTC website. Comments should be submitted on or before April 11, 2022.

Item 03—February 8, 2022 Letter from Julie L. Schoening, Ph.D., Chief Risk Officer, FTX US Derivatives to CFTC

February 8, 2022

Via Email

Mr. CLARK HUTCHISON,
Director, Division of Clearing & Risk,
Commodity Futures Trading Commission,
Three Lafayette Centre,
1155 21st Street, N.W.,
Washington, D.C. 20581

Re: Financial Resource Requirements under Core Principle B and CFTC Regulation 39.11(a)(1) in the Absence of Clearing Futures Commission Merchants ("FCMs")

Dear Mr. Hutchison:

FTX US Derivatives ("FTX") seeks to clear derivatives products that are not fully collateralized through a direct access market for both retail and institutional participants. In doing so, FTX plans to leverage its experience offering exchange and clearing services directly to market participants. Instead of weighing the credit worthiness of chains of intermediaries, FTX will margin all products directly against each market participant, which enables FTX to know and manage the precise amount of risk held by each portfolio, as well as by all portfolios in aggregate, at any given moment. FTX deploys a sophisticated real-time risk management system to support derivatives on cash markets that are always open, and commits to $250 million in dedicated, unencumbered cash to cover any remaining risk to the clearing house or its customers.[1]

Historically, clearinghouses have sought to manage their counterparty credit risk, in part, by mutualizing that risk among a relatively small number of clearing futures commission merchants ("FCMs"), who in turn managed the direct relationships with their much more numerous clients. Naturally, this created a relationship of reliance on those clearing FCMs to support the resilience of the clearinghouse. As a result, clearinghouses have been required to hold reserves against the possibility that such clearing FCMs themselves may default on their obligations, thereby requiring the clearinghouse to intercede.

Section 5b of the Commodity Exchange Act ("CEA") sets forth various core principles in the regulation of derivatives clearing organizations ("DCOs"), which have been implemented by the Commodity Futures Trading Commission ("CFTC") in Part 39 of the CFTC regulations. One of those core principles, namely Core Principle B, describes the minimum financial resources required of a DCO to ensure its financial resilience. Those requirements, however, likely presuppose a relatively small number of large FCM clearing members. The following analysis, therefore, describes the standard in existing law for calculating minimum financial resources a DCO is required to maintain, and explores how those standards might be viewed with respect to a clearinghouse that utilizes a direct-access model without clearing FCMs, but that is nonetheless likely to have large direct-access clearing members.

A. Legal Standard

The Commodity Exchange Act ("CEA") establishes both general and specific financial resources requirements for CFTC regulated clearinghouses in DCO Core Principle B. Generally, each DCO is required to have "adequate financial, operational, and managerial resources, as determined by the Commission, to discharge each responsibility of the derivatives clearing organization." *See* CEA § 5b(c)(2)(B)(i). Additionally, a DCO is required to possess financial resources that, "at a minimum, exceed the total amount that would—(I) enable the organization meet its financial obligations to its members and participants notwithstanding a default by the member or participant creating the largest financial exposure for that organization in extreme but plausible market conditions . . . ." *See* CEA § 5b(c)(2)(B)(ii). This specific

[2] *https://sirt.cftc.gov/sirt/sirt.aspx?Topic=CommissionOrdersandOtherActionsAD&Key=47841.*
[3] *https://comments.cftc.gov/PublicComments/CommentList.aspx?id=7254.*
[1] As set forth in Exhibit G to the FTX application for an amendment to its Amended Clearing Order, FTX also relies on other default resources.

requirement is generally referred to as "Cover-1," and is memorialized in CFTC Regulation 39.11(a)(1). Additionally, CFTC Regulation 39.11(c)(1) grants DCOs "reasonable discretion in determining the methodology used to compute such requirements . . . ." By contrast, a systemically important DCO is required to cover the default of "the two clearing members creating the largest combined loss to the derivatives clearing organization in extreme but plausible market conditions", otherwise known as the "Cover-2" standard. *See* CFTC Reg. 39.33(a)(1).

B. Proposed Methodology for Computing FTX Guaranty Fund Requirements

Although FTX does not have clearing FCMs, it does nonetheless have large, institutional direct-access members. In an abundance of caution, FTX proposes to account for the possibility that FTX's largest direct-access clearing member could be smaller than the largest clearing FCM at a comparable clearinghouse. FTX proposes to calculate its minimum financial obligations under CFTC Regulation 39.11(a)(1) using the following methodology: FTX will calculate the amount needed to meet its financial obligations to members and participants notwithstanding the default of: (a) the single largest clearing member (*i.e.,* the Cover-1 amount); or (b) if Cover-1 is less than 10% of total initial margin ("IM") at the clearinghouse, then the two largest clearing members (*i.e.,* the Cover-2 amount); or (c) if Cover-2 is less than 10% of IM, then the three largest clearing members (*i.e.,* the Cover-3 amount).

FTX's Guaranty Fund (GF) minimum sizing methodology explicitly meets or exceeds the regulations in 39.11 and conforms with the CFTC's principles based regulatory framework. The method starts by calculating the regulatory standard Cover-1 requirement. The Cover-1 standard sizes the GF to allow the DCO to continue operations even if the largest single participant defaults in an extreme but plausible scenario. FTX's largest exposure may be smaller than what is envisioned by the regulations due to the absence of clearing FCMs; however, FTX's largest clearing members are still highly likely to be institutional, rather than retail participants. Nonetheless, to allow for the possibility that such institutional clearing members could possibly be smaller than the largest clearing FCMs, we compare the percent of Initial Margin (IM) the Cover-1 entity is required to post relative to the total IM required from all participants. If the largest FTX clearing member holds less than 10% of the total IM at the DCO, FTX moves to a Cover-2 standard. The Cover-2 standard is outlined in Subpart C of CFTC Regulations, specifically CFTC Regulation 39.33, and requires that certain important or complex DCOs can absorb the joint default by the two clearing members creating the largest combined financial exposure, again in an extreme but plausible scenario. As yet another layer of protection for the clearinghouse, if the Cover-2 entities combined hold less than 10% of the total IM at the DCO, FTX will then move to a Cover-3 standard, which is more conservative than current CFTC regulations.

C. Appropriateness of FTX's Cover-1 Proxies

FTX is taking an innovative approach to determine the minimum size of the GF to meet the letter and the spirit of CFTC regulations. The regulations balance the severity *versus* the likelihood of default scenarios on DCO operations. Regulation 39.11 specifies Cover-1 as the standard requirement for a DCO's GF sizing. Cover-1, which assumes the largest exposure defaults in an extreme but plausible scenario, is a reasonable and conservative benchmark; if the DCO can cover the largest single default in an extreme event, any lesser default will not threaten the DCO's ability to operate.

Increasing the number of the largest participants that are assumed to default at the same time makes a scenario more extreme but naturally decreases the plausibility of such a scenario. If a DCO is large and/or complex as specified in Sub Part C, a Cover-2 standard may apply which further increases the conservativeness of the GF size. Here the CFTC has determined that, while the likelihood of the largest two entities defaulting at the same time in the worst case scenario is even less than Cover-1, this exceptional coverage is warranted if the DCO is important enough.

FTX's GF methodology considers not only Cover-1 and Cover-2 but also allows for a highly conservative Cover-3 sizing. The regulations do not explicitly consider Cover-3, likely because of the low probability of such a default event in a traditional, intermediated-clearing model. FTX's adoption of a Cover-3 standard for sizing the GF is conservative and exceeds the regulations, given the low probability of such a scenario. Note that the largest participants on FTX are highly unlikely to be retail participants, but instead large institutional participants.

To determine whether FTX should consider additional participants in the GF sizing calculation (*e.g.,* moving from Cover-1 to Cover-2 to Cover-3), we consider how much IM the participants are required to post relative to the total IM at the DCO.

This metric proxies what a Cover-1 might look like at a more traditional DCO operating with an intermediated-clearing model.

The following analysis shows that 10% of IM is a conservative estimate of the percent of IM that a Cover-1 participant might post at a traditional DCO. The analysis uses information from the CPMI–IOSCO Quantitative Disclosures for major Central Counterparties (CCPs), which is a more generic term that includes DCOs, in Q3 of 2021.

Field	*IM ACCOUNTS*	*CME* [2]	*ICUS* [3]	*ICEU* [4]	*OCC* [5]
6.1.1	*House Account IM (mm USD)*	*$32,027*	*$8,129*	*$11,978*	*$24,451*
6.1.1	*Client Gross IM (mm USD)*	*$132,135*	*$15,445*	*$61,348*	*$2,518*
6.1.1	*Client Net IM (mm USD)*	*$0*	*$0*	*$17,114*	*$88,078*
6.1.1	*Total IM (mm USD)*	*$164,162*	*$23,574*	*$90,440*	*$115,047*
18.1.1.1	*Clearing Members*	*40*	*30*	*65*	*107*
Clearing Member Margin %		*20%*	*34%*	*13%*	*21%*

For each clearinghouse shown above, all the clearing members' house positions combined represent between 13% and 34% of the total margin posted. This is determined by taking the House Account IM and dividing it by the Total IM at the relevant CCP. What might reasonably be considered the largest 40 accounts combined at CME only hold 20% of the total IM at that clearinghouse. Similar ratios are seen at the other relevant clearinghouses presented. Thus, it is not likely that the largest single participant at any of these clearinghouses holds 10% of total IM. This analysis suggests that the 10% threshold selected by FTX is an appropriate and conservative measure to determine if additional coverage participants are warranted.

FTX's proposed approach to calculate the minimum GF size will meet the Cover-1 requirement at a minimum and likely exceed it. The above analysis shows that covering 10% of IM is a conservative proxy for what could be considered a large clearing member at a traditional DCO and may represent a larger percentage than any current clearing member at the DCOs discussed above. Further, sizing the GF to cover up to the three largest simultaneous exposures is more conservative than current regulations require. FTX believes, therefore, that its GF methodology is appropriate and innovative and in the spirit of the CFTC's history of principles based and prudent risk management.

Thank you for considering our proposed methodology, and we would welcome any questions or comments the CFTC may have in that regard.

Sincerely,

JLSchoening
JLSchoening (Feb 9, 2022 11:15 EST)

JULIE L. SCHOENING, Ph.D.,
Chief Risk Officer, FTX US Derivatives.

FTX Letter re Financial Resource Requirements 2022–02–08

Final Audit Report 2022–02–09

Created: 2022–02–09

By: Brian Mulherin (gc@ledgerx.com)
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[2] *See https://www.cmegroup.com/clearing/cpmi-iosco-reporting.html.*
[3] *See https://www.theice.com/clearing/quarterly-clearing-disclosures.*
[4] *See id.*
[5] *See https://www.theocc.com/Risk-Management/PFMI-Disclosures.*

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Adobe Sign

Item 04—February 8, 2022 Letter from Brian G. Mulherin, General Counsel, FTX US Derivatives to CFTC

February 8, 2022

Via Email

Mr. CLARK HUTCHISON,
Director, Division of Clearing & Risk
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, N.W.
Washington, D.C. 20581

Re: Permissibility and Benefits of Direct Clearing Model under the Commodity Exchange Act and CFTC Regulations

Dear Mr. Hutchison:

LedgerX LLC, d/b/a FTX US Derivatives ("FTX"), recently submitted an application requesting that the Commodity Futures Trading Commission ("CFTC") amend its Amended Order of Registration as a derivatives clearing organization ("DCO"), thereby allowing FTX to offer margin directly to customers. In support of that application, FTX offers the following explanation of how this approach, which would not rely on intermediation, is permitted by the Commodity Exchange Act (the "CEA") and CFTC Regulations. FTX will also demonstrate how its proposed risk management framework is comparable to the clearing-related requirements imposed on clearing futures commission merchants ("FCMs").

As set forth below, FTX plans to lead futures markets in the United States into the 21st century, without compromising traditional risk management, customer protection, or systemic risk mitigation expectations. With dramatic improvements in technological infrastructure over the past twenty years, companies such as FTX are now able to provide their customers with direct access to exchange and clearing services, as FTX has now done for several years. FTX aims to build on these technological advancements by offering margin directly to its customers.

FTX fully appreciates the risks that arise from offering margin and plans to implement the following risk management standards that will exceed historical expectations. First, instead of relying on traditional weekly margin calculations, FTX will assess its customers' abilities to meet their margin requirements approximately once per second. Second, by operating 24 hours a day, 7 days a week, 365 days a year, FTX can implement real-time market monitoring tools to immediately react to market changes and avoid major risks to clearinghouse stability. Third, FTX will remove friction, delay, and reduce operational risk in the assessment and timely derisking of accounts, as appropriate, through direct interactions with customers. Finally, to support the resilience of our clearinghouse, FTX will rely on backstop liquidity providers and the $250 million in unencumbered cash it has contributed to its Guaranty Fund—one of the largest self-funded cash contributions for a derivatives clearinghouse in the United States.

While FTX understands that historical market practices envisioned an intermediated marketplace where brokers interfaced directly with customers, the CEA does not mandate a one-size fits all approach. As we look to the future of regulated derivatives markets, crypto-asset platforms and other nascent exchanges have pursued a direct-membership model where investors onboard directly to the trading and clearing platforms, and not through an intermediary or broker.[2]* The traditionally manual modes of interacting with markets, intermediated or not, have largely been replaced with technology that provides immediate, direct access. These technological developments have enabled the use of automated or programmed strategies for faster and more efficient trading decisions. By utilizing this technology, FTX and others already directly provide services to customers who do not have the infrastructure

[2] *See FTX's Key Principles for Market Regulation of Crypto-Trading Platforms,* available at *https://blog.ftx.com/policy/ftx_key_principles/*.

* **Editor's note:** there is no footnote 1 in this submission. It has been reproduced herein as submitted.

or relationships to support the involved clearing mechanisms other firms require.[3] In other words, the direct-access model democratizes futures trading access.

Having operated a direct-access exchange and clearinghouse without intermediaries for several years now, FTX has already developed DCO operations that often exceed or are comparable to key FCM duties prescribed by CFTC Regulations, including: (a) maintenance of adequate financial resources; (b) safeguarding customer money, securities, and other property; and (c) implementing appropriate eligibility access criteria.[5] * Additionally, other clearing-related functions traditionally performed by FCMs, including know your customer ("KYC") and anti-money laundering ("AML") functions,[6] are currently performed by FTX.[7] For other clearing-related requirements, the FTX clearinghouse is also already subject to an enhanced set of regulations relative to an FCM, such as the CFTC's rigorous systems safeguards regime related to cybersecurity and other operational risks[8] and recordkeeping requirements.[9]

With this application to amend its DCO registration, FTX seeks to build on its years of experience of offering direct access by offering margin directly to its customers, without clearing FCMs. For the benefit of the CFTC and the public, FTX provides the following summary of: (I) the risk management process for FTX's non-intermediated model; (II) how FTX intends to perform relevant clearing functions that an FCM traditionally undertakes; and (III) trading-related functions that an FCM may perform that FTX believes to be outside the scope of this request to amend its clearing order.

I. DCO Risk Management With A Direct-Access Business Model

Building on years of experience offering exchange and clearing services directly to customers, FTX now also seeks to extend margin directly to its customers. Although the traditional clearinghouse model has resulted in the risk of margin mutualized among DCO clearing members, the CEA does not require this historical business practice. Rather, the CEA merely requires that DCOs manage their risks appropriately. FTX aims to manage such risks by monitoring its customers' positions in real-time and taking appropriate and timely action to de-risk accounts in default in the following manner. First, FTX will seek to liquidate a position on FTX's central limit order book ("CLOB"), which remains open at all times.[10] If that is not practicable, FTX will attempt to lay off positions with backstop liquidity providers. Finally, FTX will use its reserve of $250 million in unencumbered cash to cover any remaining residual risk to the clearinghouse or its customers. At the end of the waterfall, in the unlikely event the Guaranty Fund is exhausted, traditional DCO default management tools will be available.

A. DCOs are not required to mutualize risk among intermediaries

While many DCOs mutualize losses among clearing members (typically FCMs), this practice is not required by the CEA. Under Section 1a(15) of the CEA, "derivatives clearing organization" is defined as "a clearinghouse, clearing association,

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[3] *See* Eris Exchange, LLC, KalshiEx LLC, and Nadex.

[5] While FTX is currently seeking an amendment only to its DCO order of registration, and the focus of this analysis is on clearing-related duties, a comprehensive list of both clearing and exchange-related FCM duties and requirements prescribed by both CFTC regulations and NFA rules may be found here: *NFA Regulatory Requirements for FCMs, IBs, CPOs, and CTAs* (August 2021), *https://www.nfa.futures.org/members/member-resources/files/regulatory-requirements-guide.pdf*.

* **Editor's note:** there is no footnote 4 in this submission. It has been reproduced herein as submitted.

[6] *See* CFTC Regulation 42.2 and NFA Interpretive Notice 9045—NFA Compliance Rule 2–9: FCM and IB Anti-Money Laundering Program; NFA Interpretive Notice 9070—NFA Compliance Rules 2–9, 2–36, and 2–49: Information Systems Security Programs.

[7] For example, both Eris Clearing LLC and FTX are required to comply with the Bank Secrecy Act, the International Emergency Powers Act, the Trading with the Enemy Act, and any Executive Orders and regulations issued thereto, as a condition of their DCO Orders of Registration. See Eris Clearing, LLC DCO Registration Order (Nov. 2, 2020) and LedgerX, LLC Amended Order of DCO Registration (September 2, 2020).

[8] CFTC Regulation 39.18.

[9] DCO Core Principle K and CFTC Regulation 39.20 set forth clearing-related recordkeeping requirements comparable to those imposed on FCMs through CFTC Regulation 1.36.

[10] An FCM's or broker-dealer's authority to liquidate a customer's account that is in default is well-established under Federal securities and commodities laws. *See, e.g., In re MF Global Inc.,* 531 B.R. 424, 435–36 (Bankr. S.D.N.Y 2015); *Moss* v. *J.C. Bradford and Co.,* 337 N.C. 315, 326–27 (1994) ("In light of the fact that rules governing margin calls and account liquidation are for the protection of the merchant and commodities exchange itself, we interpret the Federal regulatory scheme in the area of futures trading, including CME Rule 827, to permit the liquidation of a customer's account without prior demand or notice.").

clearing corporation, or similar entity, facility, system, or organization that, with respect to an agreement, contract, or transaction" that satisfies one of the following three disjunctive prongs:

> (i) enables each party to the agreement, contract, or transaction to substitute, through novation or otherwise, the credit of the derivatives clearing organization for the credit of the parties;
>
> (ii) arranges or provides, on a multilateral basis, for the settlement or netting of obligations resulting from such agreements, contracts, or transactions executed by participants in the derivatives clearing organization; ***or***
>
> (iii) otherwise provides clearing services or arrangements that mutualize or transfer among participants in the derivatives clearing organization the credit risk arising from such agreements, contracts, or transactions executed by the participants.[11]

Significantly, only the third prong refers to the mutualization of credit risk among clearing members. Because a clearinghouse only needs to satisfy one of the above three disjunctive prongs of the DCO definition, a DCO is not required to adopt a business model that mutualizes default risks among clearing members. This is supported by the CFTC's own statements: "The Commission is of the view that each DCO should be afforded an appropriate level of discretion in determining how to operate its business within the legal framework established by the CEA, as amended by the Dodd-Frank Act." [12]

B. The FTX direct-access model offers an innovative means to monitor and manage risks more effectively

Section 5b(c)(2)(D) of the CEA, implemented through CFTC Regulation 39.13, requires each DCO to ensure that it possesses the ability to manage the risks associated with discharging the responsibilities of the DCO through the use of appropriate tools and procedures, including written policies, procedures, and controls that establish an appropriate risk management framework, and is approved by the DCO's board of directors. At a minimum, the framework must clearly identify and document the range of risks to which the DCO is exposed, address the monitoring and management of the entirety of those risks, and provide a mechanism for internal audits.

CFTC Regulation 39.13 gives DCOs discretion, within specified limits, in setting, modeling, validating, reviewing and back-testing margin requirements.[13] In implementing the risk management framework, a DCO must appoint a chief risk officer to make appropriate recommendations to the DCO's risk management committee or board of directors regarding the DCO's risk management functions. Accordingly, "a DCO should adopt a comprehensive and documented risk management framework that addresses all of the various types of risks to which it is exposed and the manner in which they may relate to each other." [14] A sufficient risk management framework should include a daily assessment of the DCO's adequacy of its initial margin requirements, valuation of the initial margin assets, back-testing of products that are experiencing significant market volatility, and conducting of stress tests with respect to each large trader who poses significant risk.

Additionally, FCM risk management requirements are very similar to those imposed on DCOs. CFTC Regulation 1.11 requires each FCM to establish, maintain, and enforce a system of risk management policies and procedures designed to monitor and manage the risks associated with the activities of the FCM. The FCM's risk management unit must give quarterly risk exposure reports to senior management and the CFTC. For FCMs that act as clearing members of a DCO, the CFTC adopted Regulation 1.73. Under CFTC Regulation 1.73, a clearing FCM is required to: (i) evaluate its ability to meet initial and variation margin requirements at least once per week; (ii) evaluate its ability to liquidate positions in an orderly manner at least once per quarter; and (iii) test lines of credit once per year.

When comparing the risk management standards imposed on DCOs and FCMs, FTX believes that a direct clearing participant of a DCO will receive comparable protections to an FCM's customers. Notwithstanding the comparability of DCO and clearing FCM risk management requirements, in practice, FTX proposes to monitor and manage customer risk in a more stringent fashion than is required by either regime, as described in the proposed default rules and *Exhibit G.*

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[11] CEA § 1a(15)(A) (emphasis added).

[12] *Derivatives Clearing Organization General Provisions and Core Principles ("DCO Final Rule"),* 76 FED. REG. 69334, 69,335 (Nov. 8, 2011).

[13] *Id.* at 69365–76.

[14] *DCO Final Rule,* 76 FED. REG. at 69363.

In addition to the traditional risk management functions that FTX will be performing, the following are some noteworthy examples of improvements on traditional risk management practices that FTX will implement:

- FTX will rely only on collateral deposited with FTX when evaluating its risk exposure, as opposed to holistic credit checks that rely on information, such as a person's worth, occupation, credit score, and other information that may be stale at any particular point in time.
- FTX will measure all participant account values in real-time, as opposed to periodic snapshots.
- Settlement variation margin will be exchanged on a near real-time basis to avoid the accumulation of large losses over time.
- FTX will factor concentration and liquidity risks into initial margin requirements.
- FTX will stress test liquidity needs daily to ensure adequacy of resources.
- When participant positions fall below the maintenance margin threshold, FTX will liquidate positions rapidly, intra-day on the CLOB.
- If FTX is unable to liquidate a position on the CLOB, FTX will resort immediately to agreements with backstop liquidity providers who agree to accept a pre-negotiated volume of liquidation orders over a specified timeframe.
- If the backstop liquidity providers cannot cure a participant's shortfall, FTX will draw from its $250 million reserve fund capitalized by unencumbered cash to cover any remaining risk to the clearinghouse or its customers.

C. To reserve against defaults by participants, FTX will utilize backstop liquidity providers and $250 million of its own capital

As FTX intends not to rely on clearing FCMs or otherwise require that its participants mutualize the risk to the clearinghouse, FTX does have resources beyond liquidating positions on its CLOB to manage margin risk.

Following reasonable efforts to liquidate positions on the CLOB, FTX proposes a "backstop liquidity provider program," which will effectively mutualize a portion of the clearing risk among a select group of professional traders who can absorb and lay-off risk that may be temporarily difficult to resolve in the open market. To serve as a backstop liquidity provider, a trader will need to meet certain criteria. For example, the trader must agree to provide a certain minimum amount of backstop liquidity to be available on a 24/7 basis, and to provide initial and variation margin payments within a short period of time. In addition to these providers, other holders of large positions will be able to serve as secondary backstop liquidity providers. In the event clearing member defaults result in account deficits, however, FTX will then rely primarily on $250 million of its own unencumbered capital to manage margin risks.

II. Having Successfully Operated A Direct-Access Exchange and DCO for Several Years, FTX Has Already Proven Its Ability To Perform Many Functions Traditionally Undertaken by FCMs

A. FTX maintains considerable financial resources and reports to the CFTC routinely

The financial stability of a DCO, or an FCM, is based upon the premise that the entity has and maintains adequate financial resources to remain operational, and to meet its obligations to customers, clearing members, and operational costs. Pursuant to Section 4f(b) of the CEA, an FCM must meet certain minimum financial requirements prescribed by the CFTC. Furthermore, CFTC Regulation 1.17 sets forth adjusted net capital requirements for FCMs. For an FCM that is not a broker-dealer, a security-based swap dealer, or a security-based major swap participant, the FCM must maintain adjusted net capital equal to, or exceeding the greater of: (i) $1 million or (ii) the FCM's risk-based capital requirement (*i.e.,* 8% of the total risk margin requirement for positions carried by the FCM in customer accounts and non-customer accounts).

Similarly, for a DCO to meet Section 5b(c)(2)(B) of the CEA and CFTC Regulation 39.11, the DCO must have adequate financial, operational, and managerial resources "as determined by the Commission" to discharge each responsibility of the DCO. A more quantitative metric of this requirement is that the DCO must possess financial resources that exceed the total amount that would enable the DCO to meet its financial obligations to its clearing members notwithstanding a default by its largest member, based on the value of the DCO's own capital, guaranty fund deposits, default insurance, and certain assessments of additional guaranty fund contributions. The DCO must also possess financial resources, limited to its own capital, that exceed the total amount that would enable the DCO to cover operating costs

for one year. Notably, the Commission declined to adopt a minimum capital requirement for DCOs. Instead, the Commission emphasized that it is appropriate "to provide flexibility to DCOs in designing their financial resources structure so long as the aggregate amount is sufficient." [16] *

To this point, as described above, FTX has committed $250 million of its own unencumbered capital to meet its obligations as a DCO in the event of a participant's default. Although some clearinghouses rely upon guaranty fund deposits and assessments from clearing members to meet their financial resources obligations, the Commission has provided DCOs flexibility with meeting the financial resources requirement, so long as the resources are permissible. For example, ICE NGX, which operates a direct clearing model, relies upon participant collateral, a guarantee fund in the form of a letter of credit, cash, and default insurance to meet its financial obligations under DCO Core Principle B.[17]

Furthermore, as a registered Designated Contract Market ("DCM") and DCO, FTX is also subject to robust systems safeguard requirements.[18] To satisfy these requirements, FTX has adopted a comprehensive system safeguard program designed to identify and minimize operationalize risk. FTX has also implemented controls relating to information security, including controls related to: access to systems and data; user and device identification and authentication; vulnerability management; penetration testing; business continuity and disaster recovery processes; and security incident response and management, among others.

B. FTX has a track record demonstrating protection of customer money,securities, and property

One of the CEA's fundamental components is the protection of customers, and the safeguarding of customer money, securities or other property pledged to margin, guarantee, or secure trades or contracts. Section 4d of the CEA directs FCMs to segregate customer money, securities, and other property from its own assets. Section 4d(a)(2) of the CEA requires an FCM to treat and deal with futures customer funds as belonging to the futures customer, and prohibits an FCM from using customer funds to margin or extend credit to any other person. Further, CFTC Regulation 1.20 requires that an FCM must separately account for all futures customer funds and segregate such funds as belonging to its futures customers. Account names must clearly identify customer funds as the futures customer funds and show that such funds are segregated as required by sections 4d(a) and 4d(b) of the CEA and by CFTC regulations. An FCM may deposit futures customer funds, subject to the risk management policies and procedures of the futures commission merchant required by CFTC Regulation 1.11 with: (1) a bank or trust company; (2) a DCO; or (3) another FCM.

DCOs are subject to other comparable obligations to those set forth in Section 4d of the CEA; namely, CFTC Regulation 39.15 requires the DCO file rules for CFTC approval related to the commingling of DCO and clearing member customer positions, as well as rules on money, securities, or property received by the DCO to margin, guarantee, or secure such positions. The DCO's rules must, for example, identify the products that would be commingled, analyze the risk characteristics of the eligible products, and analyze the liquidity of the respective markets for eligible products.

Under FTX Rule 7.3, FTX separately accounts for and segregates all participant funds used to purchase, margin, guarantee, secure, or settle Company Contracts from FTX's proprietary funds. In doing so, FTX maintains a proprietary account that will be credited with fees or other payments owed to a participant that are debited as a result of trades and settlements of Company Contracts. FTX maintains a record of each participant's account balances and Company Contracts, and is prohibited from holding, using, or disposing of except as belonging to participants.

C. FTX has implemented eligibility criteria that promote free and open access and protect against undue risk

Section 5b(c)(2)(C) of the CEA requires a DCO to have appropriate admission and continuing eligibility standards (including sufficient financial resources and operational capacity) for members of, and participants in, the DCO. CFTC Regulation 1.3 defines "clearing member" as "any person that has clearing privileges such that it can process, clear and settle trades through a derivatives clearing organization

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[16] *Id.* at 69347.

* **Editor's note:** there is no footnote 15 in this submission. It has been reproduced herein as submitted.

[17] *See https://www.theice.com/ngx/clearing-settlement.*

[18] CFTC Regulations 38.1050–51; Regulation 39.18.

on behalf of itself or others. The derivatives clearing organization need not be organized as a membership organization."[19] Under this definition, all of FTX's participants will qualify as "clearing members."

CFTC Regulation 39.12 requires these participant eligibility criteria to be objective, publicly disclosed, and risk-based. Specifically, CFTC Regulation 39.12(a)(2) requires that clearing members have access to sufficient financial resources to meet obligations arising from participation in the DCO in extreme but plausible market conditions. The DCO must also maintain appropriate standards for determining the eligibility of agreements, contracts, or transactions submitted to the DCO for clearing. Furthermore, the DCO must have procedures to verify, on an ongoing basis, the compliance of each participation and membership requirement of the DCO.

The CFTC explained that the participant eligibility requirements in CFTC Regulation 39.12(a)(1) satisfy "the dual Congressional mandate to provide for fair and open access while ensuring that such increased access does not materially increase risk."[20] The CFTC emphasized that the rule provides a DCO with discretion to balance restrictions on participation with legitimate risk management concerns.[21] In this regard, the CFTC found that the DCOs are "in the best position in the first instance to determine the optimal balance."[22]

FTX's membership criteria for participants are fully aligned with the Congressional mandate to provide for fair and open access to clearing services in a manner that is consistent with prudent risk management. FTX's real-time monitoring of participant positions enables it to determine, at all times, whether a participant's account has sufficient cash and collateral to meet its margin obligations to the DCO. In the event an account does not have sufficient financial resources, FTX will immediately begin to liquidate the participant's position until the amount of funds in the participant account is equal to its margin obligations to the DCO. Because FTX monitors participant accounts 24/7 and liquidates underfunded positions in realtime, there is no need to establish minimum capital requirements for each participant. Instead, FTX's risk management framework enables it to ensure at all times that each participant has sufficient financial resources to meet its current obligations arising from participation in the DCO.

In addition, FTX's membership requirements will advance many of the policy considerations underlying CFTC Regulation 39.12, including promoting competition and liquidity. FTX anticipates that its participants will be diverse, encompassing traders and investors with varying investment objectives, risk tolerances, and portfolio sizes. Diffusing the risk of defaults across numerous participants also greatly reduces the likelihood that the default of any one or two large members will seriously jeopardize the clearinghouse, thereby strengthening the DCO's financial stability.

III. FCMs Also Perform Certain Trading-Related Functions That Are Independent of Clearing Functions

FCMs are subject to certain obligations related to trading on an exchange that are unrelated to clearing positions, such as: (i) providing disclosures to customers regarding, *inter alia,* the risks of trading;[23] (ii) order and transaction recordkeeping obligations;[24] (iii) minimum trading standards;[25] (iv) trading authorization requirements;[26] (v) requirements to produce monthly statements and confirmations;[27] and (vi) conflict of interest and trading standards.[28] These FCM requirements primarily focus on the FCM customer's execution of transactions on the exchange. As these functions are trading-related, rather than clearing-related, FTX believes they are outside the scope of FTX's request to amend its clearing order. It should be noted,

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[19] 17 CFR § 1.3.

[20] *DCO Final Rule,* 76 FED. REG. at 69353.

[21] *Id.*

[22] *Id.*

[23] CFTC Regulations 33.7 and 1.55; NFA Interpretive Notice 9073—Disclosure Requirements for NFA Members Engaging in Virtual Currency Activities. FTX is also subject to exchange trading related public disclosure requirements as set forth in DCM Core Principle 7, and CFTC regulations 38.1400 and 38.1401.

[24] CFTC Regulation 1.35. FTX is also subject to exchange trading related recordkeeping requirements as set forth in DCM Core Principle 18, and CFTC regulations 38.950 and 38.951.

[25] CFTC Regulation 155.3. FTX is also subject to exchange trading related requirements to protect its markets and market participants as set forth in DCM Core Principle 12, and CFTC regulations 38.650 and38.651.

[26] CFTC Regulation 166.2.

[27] CFTC Regulation 1.33. FTX provides IRS Form 1099s to customers, trade history is available to each customer.

[28] *S*ee CFTC Regulations 1.56, 1.71, and 155.3. FTX is also subject to exchange trading conflicts of interest requirements as set forth in DCM Core Principle 16, and CFTC regulations 38.850 and 38.851.

however, that FTX acting in its capacity as a DCM (which is a category of self-regulatory organization) would handle many of these requirements in accordance with Part 38 of the CFTC's rules, and has already been providing direct-access to its exchange for years now, as have others.

* * * * *

FTX appreciates the opportunity to present its views on these important issues andwould value the opportunity to discuss these matters further, at your convenience.

Sincerely,

BRIAN G. MULHERIN,
General Counsel, FTX US Derivatives.

cc: EILEEN DONOVAN.

Item 05—LedgerX LLC d/b/a FTX US Derivatives Participant Agreement

I. Services.

LedgerX is registered with the U.S. Commodity Futures Trading Commission ("CFTC") as the operator of a designated contract market ("DCM"), a swap execution facility ("SEF") and a derivatives clearing organization ("DCO"). Participant wishes to receive access to certain services pursuant to this Agreement ("Services"). LedgerX is willing to provide such Services to Participant pursuant to the terms of this Agreement. Participant agrees to be bound by the terms of this Agreement, and the **LedgerX Rulebook** (defined below). LedgerX will provide Participant with access to a system or a platform for execution of Transactions as provided in the **LedgerX Rulebook** and as required by the U.S. Commodity Exchange Act, as amended (the "Act").

II. Definitions.

Capitalized terms used but not defined herein have the respective meanings given to them in the **LedgerX Rulebook.**

III. Participant Eligibility.

By executing this application and whenever using the Services, the undersigned hereby represents and warrants that Participant meets the eligibility requirements as set forth in Rule 3.2 of the **LedgerX Rulebook,** as amended from time to time, and if trading through the SEF is an Eligible Contract Participant ("ECP"). Further, each time such Participant or any of its Authorized Representatives enters an order, effects a transaction or otherwise uses the Services, Participant represents, warrants and reaffirms that Participant meets the eligibility requirements as set forth in Rule 3.2 of the **LedgerX Rulebook,** and if trading through the SEF is an ECP.

IV. Participant Obligations and Consent to Jurisdiction of LedgerX.

Participant shall pay the fees and charges for the Services as specified and revised from time to time on the LedgerX website ("Website"), located at *www.ledgerx.com.* The fees and charges for the Services are enumerated on the Website. LedgerX will notify Participant of any change to such fees and charges by means of a Website post, and any such changes will be effective 10 days after LedgerX posts such amended fees on the Website. Following the expiration of such 10 day period, the fees schedule on the Website will be deemed amended accordingly. Participant's continued use of Services after the expiration of the 10 day period will constitute Participant's agreement to pay the amended fees and charges for the Services.

Participant hereby acknowledges and agrees that it has received and read the rules and regulations established by LedgerX applicable to the Services contained in the LedgerX rules (as supplemented or amended from time to time, the "**LedgerX Rulebook**"). Further, Participant agrees to be and will be bound by, and will comply with, the **LedgerX Rulebook** as amended from time to time. In the event of any conflict between this Agreement and the **LedgerX Rulebook,** the Rulebook will govern.*

Participant hereby consents to the jurisdiction of LedgerX. Upon the prior written request of LedgerX, Participant will promptly (but in any event, within 5 Business

* **Editor's note:** Page 1 of the *LedgerX Participant Agreement* is dated *June 2021* (Items I–IV to paragraph ending " . . . Rulebook will govern."). All subsequent pages are dated *December 2021.*

Days) provide to LedgerX such information about itself and its Authorized Representatives as LedgerX requests.

Participant hereby agrees that it will only allow itself or its duly authorized employees and representatives, in each case previously identified to LedgerX, to access or use the Services. Participant agrees to accept full responsibility for any transactions effected on the Platform and for any use of the LedgerX DCM made by it or made pursuant to the login information of Participant or its Authorized Representatives. Participant will be financially responsible for such trades even if the orders received via the LedgerX DCM were (1) entered as a result of a failure in security controls and/or credit controls, other than due to the gross negligence of LedgerX, or (2) entered by an unknown or unauthorized user using the login credentials of Participant or its Authorized Representatives.

V. Participant's Representations and Warranties.

Participant hereby represents, warrants and covenants to LedgerX, and each time such Participant or any of its Authorized Representatives enters an order, effects a transaction or otherwise uses the Services, that Participant will be deemed by such act to represent, warrant and covenant to LedgerX the following:

A. if such Participant is not a natural person, Participant is duly organized, validly existing and in good standing under the laws of its jurisdiction of organization and each other jurisdiction in which the nature or conduct of its business requires such qualification;

B. if such Participant is an individual, Participant is of the age of majority in the individual's place of residence;

C. such Participant has all requisite legal authority and capacity to enter into this Agreement and to use the Services on its own behalf and to perform its obligations as a Participant;

D. such Participant will maintain during the term of this Agreement all required and necessary regulatory approvals and/or licenses to operate as a Participant;

E. such Participant and its Authorized Representatives are and will be in compliance with all material respects of the Act, CFTC Regulations and all other applicable laws, rules, regulations, judgments, orders and rulings of any governmental authority or self-regulatory organization, authority, agency, court or body, including the laws of any jurisdiction applicable to an Order or Transaction (collectively, "Applicable Law") (including data protection and privacy laws and laws with respect to recording messages of Participant employees, including providing and obtaining required notices or consents); and

F. Participant is not statutorily disqualified from acting as a Participant and that there is, to the best of its knowledge, no pending or threatened action, suit or proceeding before or by any court or other governmental, regulatory or self-regulatory body, to which Participant is a party, that seeks to affect the enforceability of this Agreement or its ability to act as a Participant.

VI. Participant Acknowledgments.

Participant further acknowledges and agrees that:

A. it is fully aware of the speculative nature and high risk associated with the Services referred to in this Agreement and of derivatives, futures, swaps, and options trading generally (including the risk that Participant or its Authorized Representatives may incur trading losses);

B. it is fully aware that if Participant transfers digital currency away from LedgerX, that transfer is immediately irreversible once effectuated, that Participant is solely responsible for designating the correct destination and maintaining the ability to access and control the transferred digital currency, and that LedgerX accepts no responsibility for Participant's ability to access or control any digital currency transferred away from LedgerX by Participant;

C. it is fully aware of, acknowledges, and agrees to LedgerX's Digital Currency Fork policy set forth in Rule 11.14 of the **LedgerX Rulebook;**

D. it will abide by and be subject to the **LedgerX Rulebook,** as now existing and as hereafter duly amended from time to time, including the obligation to submit to arbitration or the jurisdiction of the State or Federal courts located within the City of New York in accordance with Rules 10.1–10.5, 11.5 and 11.6 of the **LedgerX Rulebook;**

E. Participant agrees to be bound by, and comply with, this Agreement, and amendments to this Agreement, solely by Participant's or its Authorized Representatives' access or use of the Services;

F. notwithstanding the above, amendments to this Agreement are automatically effective unless, within 10 days of the change, Participant: (1) ceases using the Services, (2) does not enter into any further trades of any kind on the Platform, and (3) gives notice to LedgerX to arrange for the closing of its Accounts;

G. this Agreement is enforceable against Participant, and against each of its Authorized Representatives directly, through the dispute resolution procedures in this Agreement and the **LedgerX Rulebook;**

H. its status as a Participant may be limited, conditioned, restricted or terminated by the Board in accordance with the **LedgerX Rulebook;**

I. it will provide such other information as may be reasonably requested by LedgerX from time to time as may be necessary or desirable to verify its qualifications as a Participant;

J. it authorizes LedgerX to verify, on an initial and a periodic basis, by investigation, the statements in the application materials provided to LedgerX, which may include a criminal background check, a review of Participant's credit report, and such other action reasonably deemed necessary by LedgerX;

K. it authorizes any governmental, regulatory or self-regulatory body, futures exchange, swap execution facility, securities exchange, national securities association, national futures association, bank or other entity to furnish to LedgerX, upon its request, any information such entity may have concerning Participant, and Participant hereby releases such entity from any and all liability of whatsoever nature by reason of furnishing any such information to LedgerX;

L. it hereby authorizes LedgerX to make available to any governmental, regulatory or self-regulatory body, futures exchange, swap execution facility, securities exchange, national securities association, national futures association, bank or other entity (upon such entity's showing of proper authority and need) any information LedgerX may have concerning Participant, and it hereby releases LedgerX from any and all liability of whatsoever nature by reason of furnishing any such information;

M. it will not fraudulently deposit funds into its Participant Account, Collateral Account, Cleared Swaps Customer Account, Proprietary Account or any other account associated with this Agreement or the use of LedgerX's services (individually, an "Account" and collectively, the "Accounts");

N. it hereby authorizes LedgerX to deduct from its Accounts maintained on the books and records of LedgerX all fees or other charges accruing to Participant, including legal fees and costs;

O. it hereby authorizes LedgerX to cancel, reverse, liquidate, close out or transfer Participant's position or terminate its Account(s) at LedgerX's sole discretion, and without prior reference to the Participant or its Authorized Representatives, in the event that the position is not sufficiently collateralized, as determined and set by LedgerX in its sole and absolute discretion;

P. it hereby authorizes LedgerX in the event of a cancellation, reversal, liquidation, close out or transfer of Participant's position or a termination of its Account to sell or liquidate any and all cash and other assets in the Account that is needed to satisfy any financial obligation of Participant arising as a result of such actions;

Q. it will be responsible to LedgerX for payment of any deficiency remaining in Participant's Account should an Account be liquidated or terminated;

R. it will keep confidential all information related to the Settlement Bank, including but not limited to the name of such Settlement Bank, account numbers, and bank personnel, except as necessary to perform LedgerX-related transfers;

S. upon each transfer of Underlying to LedgerX, it will pledge to LedgerX a first-priority security interest in such Underlying, and it authorizes LedgerX to make transfers of such Underlying in accordance with the **LedgerX Rulebook;**

T. it hereby declares that the statements in this Agreement and in any application materials provided to LedgerX are true, complete and accurate, and that

it will promptly notify LedgerX in writing if any representation, warranty or covenant made herein changes or ceases to be true;

U. it will be solely responsible, at its own risk and expense, for (1) acquiring, installing and maintaining all equipment, hardware and software (other than any applications, algorithms, software, interfaces or code that LedgerX may provide to such Participant pursuant to the terms of this Agreement for purposes of accessing and utilizing the Platform (collectively, "Trading Tools") and the Platform), internet access, telecommunications, and network systems necessary and compatible for it to access and use the Platform and Trading Tools and (2) ensuring that any systems, facilities, servers, routers, and other equipment and software it uses to access and use the Platform and Trading Tools are at all times protected by, and at all times comply with, all applicable information security and firewall precautions, at a level of security not less than that prevailing in the industry;

V. LedgerX cannot guarantee electronic access to the Platform if Participant's internet service is down or disconnected, and that LedgerX is not responsible for any losses due to Participant's inability to connect to the Platform when Participant's internet service is down or disconnected;

W. it will comply with any security polices applicable to Participant set forth on the Website;

X. it consents to the electronic delivery of all tax forms, including, without limitation, IRS Form 1099–B, or such other tax forms as LedgerX may determine are required; and

Y. it is obligated to update any and all information contained in any part of this Agreement for so long as Participant receives access to Services pursuant to this Agreement.

VII. Third-Party Exchange Participants: Representations, Warranties and Acknowledgments.

Participants and their Authorized Representatives who trade through third-party exchanges and clear those trades through LedgerX (hereinafter collectively, "Third-Party Exchange Participants"), hereby agree to be bound, and to comply with, all provisions in this Agreement to the same extent as other Participants and Authorized Representatives. Third-Party Exchange Participants and their Authorized Representatives hereby affirm all representations, warranties, covenants and acknowledgments in this Agreement, including but not limited to the acknowledgment that this Agreement is enforceable by LedgerX against Third-Party Exchange Participants and their Authorized Representatives directly, through the dispute resolution procedures in this Agreement and the **LedgerX Rulebook.** Additionally, each Third-Party Exchange Participant and each of their Authorized Representatives agrees to be bound by and to comply with the **LedgerX Rulebook.**

LedgerX may seek any legal, regulatory or similar claims against a Third-Party Exchange Participant and each of its Authorized Representatives in the same manner it would pursue such an action against other Participants and their Authorized Representatives. For the avoidance of doubt, unless expressly stated herein, nothing in this Agreement shall prevent LedgerX or its agents from pursuing any claims, liabilities and expenses arising from the conduct of a Third-Party Exchange Participant or its Authorized Representatives (including attorneys' fees, out of pocket expenses, costs and disbursements). For purposes of this Agreement, each Third-Party Exchange Participant shall be deemed to be a "Participant," unless otherwise noted herein, and all terms of this Agreement pertaining to Participants also pertain equally to Third-Party Exchange Participants. All terms of this Agreement pertaining to Authorized Representatives also pertain equally to any agent or representative of a Third-Party Exchange Participant.

VIII. Indemnity.

Participant hereby agrees to indemnify and hold harmless LedgerX and its directors, officers, employees, members, affiliates and agents (each, a "Related Party") from and against all expenses and costs and damages (including any legal fees and customary expenses), directly and actually incurred by LedgerX (including consequential damages awarded to the third party) as a result of third-party claims resulting from, in connection with, or arising out of Participant's use of the Services or activities of Participant or arising out of or relating to this Agreement, including any failure by Participant, for any reason, fraudulent, negligent, or otherwise, to comply with its obligations and requirements set forth in this Agreement, or any failure of Participant to comply with the agreements, representations or covenants contained in this Agreement.

Within 10 Business Days after LedgerX receives written notice of a claim that LedgerX reasonably believes falls within the scope of this paragraph, LedgerX will provide Participant with written notice of that claim, provided, however, that failure to provide such notice will not relieve Participant of its indemnity obligations hereunder except to the extent Participant is materially prejudiced thereby and Participant will not be responsible for those expenses, costs and damages that LedgerX incurs solely as a result of any such delay. Participant's indemnity obligation will not apply to the extent there has been a final determination (including exhaustion of any appeals) by a court or arbitrator of competent jurisdiction that the expense, cost or damage arose from LedgerX's gross negligence, fraud or willful misconduct.

IX. Limited Warranty and Limitation of Liability.

The LedgerX rules concerning liability and warranties (including without limitation Rule 11.7 of the **LedgerX Rulebook,** and any successor Rules thereto) are incorporated herein by reference and apply with the same force and effect as if they were reproduced in their entirety in this Agreement. Those LedgerX rules set out the entire liability of LedgerX to Participant. All other liability of LedgerX under or in connection with this Agreement is excluded, except to the extent that it is not permitted to be excluded by Applicable Law.

X. Data Use Consent.

Participant hereby grants LedgerX a worldwide, perpetual, irrevocable, royalty-free, full sublicensable and freely assignable license to store, use, copy, display, disseminate and create derivative works from: (1) the price and quantity data for each Transaction entered into by Participant that is executed via the Services and (2) each bid, offer and/or Order provided via the Services by Participant. Participant acknowledges and agrees that LedgerX may use such information for business, marketing and other purposes.

XI. Market Information; No Warranty.

LedgerX may make available to Participant a broad range of financial information that LedgerX obtains from third-party service providers, including financial market data, spot market data, quotes, news, analyst opinions, links to other third-party sites and research reports (hereinafter, "Market Information"). LedgerX does not endorse or approve Market Information, and we make it available to Participant and its Authorized Representatives only as a service and convenience. LedgerX and its third-party service providers do not (1) guarantee the accuracy, timeliness, completeness or correct sequencing of Market Information, or (2) warrant any results from the use or reliance on Market Information. LedgerX expressly disclaims and makes no warranty of merchantability, fitness for a particular purpose or use, or non-infringement. There is no other warranty of any kind, express or implied, regarding the Market Information.

Market Information may quickly become unreliable for various reasons including, for example, changes in market conditions or economic circumstances. Neither LedgerX nor the third-party service providers are obligated to update any information or opinions contained in any Market Information, and LedgerX may discontinue offering Market Information at any time without notice. Participant and its Authorized Representatives agree that neither LedgerX nor the third-party service providers will be liable in any way for the termination, interruption, delay or inaccuracy of any Market Information. Participant and its Authorized Representatives agree not to redistribute or facilitate the redistribution of Market Information, and agree not to provide access to Market Information to anyone who is not authorized by LedgerX to receive Market Information.

XII. No Investment Advice or Recommendations.

Participant hereby acknowledges and agrees that LedgerX provides no legal, tax, investment, financial or other advice, and nothing contained in the Services constitutes a solicitation, recommendation, endorsement or offer by LedgerX to buy or sell any commodity derivative, future, option or swap. Participant assumes the sole responsibility of evaluating the merits and risks associated with the use of the Services before making any investment decisions, and Participant agrees not to hold LedgerX liable for any possible claim for damages arising from any decision made based on the Services, information or Market Information made available to Participant or its Authorized Representatives by or through LedgerX.

XIII. Netting Program.

Participant hereby acknowledges that LedgerX provides a netting program (the "Netting Program") as described on the Website, which may be amended or revised by LedgerX from time to time in its sole and absolute discretion. Participant hereby

agrees that the Netting Program (and any subsequent amendment or revision to it) is made a part of, and incorporated by reference into, this Agreement. Participant hereby chooses to opt in or opt out of such Netting Program as elected on the signature page hereto.

XIV. Margin.

Participant agrees that when it establishes in its Account a margined position, Participant will deposit and maintain in its Account sufficient qualifying assets to serve as collateral to meet the Margin Requirement, which will be set by LedgerX in its sole and absolute discretion. The assets that will qualify as good collateral to support a margined position will be limited to cash and the specific types of assets that LedgerX has determined it will accept and credit as good collateral. Participant acknowledges and agrees that the Margin Requirement for any open position may vary over time based on, among other things, (a) the number, the size of, and the specific instruments traded in, the open positions in the Participant's Account; (b) the unrealized profits or losses on such open positions at any given time; (c) market conditions; and (d) LedgerX policies in place from time to time, as further described on the LedgerX website.

As acknowledged by Participant in Section VI.O. above, Participant acknowledges that not having sufficient qualifying assets to meet the Margin Requirement could result in a Margin Closeout, which is defined as the automatic closing of some or all of Participant's open positions. Participant agrees to monitor the qualifying assets in Participant's Account and ensure there are sufficient assets to meet the Margin Requirement. Nothing in this Agreement shall be taken to mean that LedgerX is required to provide Participant with time to respond prior to a Margin Closeout when LedgerX, in its sole discretion, deems it necessary to take immediate action. For the avoidance of doubt, Participant agrees that their open positions could be liquidated in a Margin Closeout if the market moves significantly and/or quickly such that the Participant no longer meets the Margin Requirement. In the event of a Margin Closeout, LedgerX may close all of Participant's open positions.

Provided that the value of assets in Participant's Account that qualify as good collateral is greater than the Margin Requirement, Participant may withdraw from Participant's Account any amount of assets in excess of the Margin Requirement.

If the value of assets in Participant's Account that qualify as good collateral does not meet the Margin Requirement, LedgerX will not have any obligation to execute any order that Participant submits to LedgerX. Furthermore, LedgerX will have no obligation to execute any order which would cause Participant's Account to fail to meet the Margin Requirement.

LedgerX may, without notice to Participant, unilaterally initiate and execute one or more close out orders for some or all of Participant's open positions, in the event that the value of the assets in Participant's Account that qualify as good collateral is determined by LedgerX to be less than the Margin Requirement, or for any other reason which in LedgerX's sole discretion LedgerX considers to create unacceptable risk of financial loss relative to the value of Participant's Account.

Any and all trading relating to margined positions shall be in in accordance with Chapter 7 of the **LedgerX Rulebook.**

XV. Amendments to the Agreement.

LedgerX may modify any of the terms and conditions that are set forth in this Agreement by providing not less than 10 days prior written notice to Participant. Participant acknowledges and agrees that such notice is sufficient if posted to the LedgerX website as a regulatory notice under "Regulatory Notices" and that no other or additional form of notice, actual or constructive, is required. If Participant does not consent to the modification, Participant may terminate this Agreement by sending a written notice of termination of its Accounts to LedgerX at *gc@ledgerx.com* within 10 days of receiving notification of the modification from LedgerX. Any such termination will be effective as of the date on which the modification would have taken effect. In the event a Participant does not consent to the modification of this Agreement, and objects to the modification in a timely fashion as set forth above, then Participant (1) agrees to stop using the Services immediately, (2) agrees that neither it nor its Authorized Representatives will enter into any further trades of any kind on LedgerX, (3) grants LedgerX the authority to close any open positions immediately, and (4) agrees it will be responsible to LedgerX for payment of any deficiency remaining in Participant's Accounts after the closing of such positions.

XVI. Termination.

Subject to Applicable Law and the **LedgerX Rulebook,** LedgerX or Participant may terminate this Agreement by giving the other prior written notice. Termination of this Agreement will not affect liability accrued as of termination. Sections V

through XII, XIV, XVIII, and XXI will survive termination of this Agreement and continue in full force and effect.

In the event Participant elects to terminate this Agreement, then Participant (1) agrees to stop using the Services immediately, (2) agrees that neither it nor its Authorized Representatives will enter into any further trades of any kind on LedgerX, (3) grants LedgerX the authority to close any open positions immediately, and (4) agrees it will be responsible to LedgerX for payment of any deficiency remaining in Participant's Account after the closing of such positions.

XVII. Complete Agreement.

This Agreement constitutes the entire contract between the parties relative to the subject matter hereof. Any other previous agreement among the parties with respect to the subject matter hereof is superseded by this Agreement. Nothing in this Agreement, expressed or implied, is intended to confer upon any person (other than the parties hereto, their respective successors and assigns permitted hereunder) any rights, remedies, obligations or liabilities under or by reason of this Agreement.

XVIII. Severability.

In the event that any one or more of the provisions contained in this Agreement should be held invalid, illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions contained herein and therein shall not in any way be affected or impaired thereby (it being understood that the invalidity of a particular provision in a particular jurisdiction shall not in and of itself affect the validity of such provision in any other jurisdiction). The parties shall endeavor in good-faith negotiations to replace the invalid, illegal or unenforceable provisions with valid provisions the economic effect of which comes as close as possible to that of the invalid, illegal or unenforceable provisions.

XIX. Counterparts.

This Agreement may be executed in counterparts (and by different parties hereto on different counterparts), each of which shall constitute an original but all of which when taken together shall constitute a single contract.

Each party agrees that electronic signatures of the parties included in this Agreement are intended to authenticate this writing and to have the same force and effect as manual signatures. Electronic signature means any electronic sound, symbol or process attached to or logically associated with a record and executed and adopted by a party with the intent to sign such record pursuant to the New York Electronic Signatures and Records Act (N.Y. State Tech. §§ 301–309) as amended from time to time. Delivery of an electronic signature to this Agreement shall be as effective as delivery of an original signed counterpart of this Agreement.

XX. Assignment.

Participant may not assign this Agreement, in whole or in part, without the prior written consent of LedgerX.

XXI. USA PATRIOT Act Notice.

LedgerX hereby notifies Participant that pursuant to the requirements of the USA PATRIOT Act, it is required to obtain, verify and record information that identifies Participant, which information includes the name and address of Participant and other information that will allow LedgerX to identify Participant in accordance with the USA PATRIOT Act.

XXII. Governing Law.

This Agreement will be governed by and construed in accordance with the laws of the State of New York. Any dispute between LedgerX and Participant or its Authorized Representatives arising from or in connection with this Agreement will be settled through arbitration or the state or Federal courts located within the City of New York in accordance with Rules 10.1–10.5, 11.5 and 11.6 of the **LedgerX Rulebook.** Any arbitration must be brought in Cook County, Illinois.

XXIII. Click "I agree" for Your Signature.

As noted above in Section XVIII, Participant will be signing this Agreement with a valid and binding electronic signature by clicking "I agree," and Participant acknowledges that it has read and understood this Agreement's terms and conditions.

Item 06—LedgerX LLC d/b/a FTX US Derivatives DCO Exhibit G

Attach as Exhibit G, documents that demonstrate compliance with the default rules and procedures requirements set forth in § 39.16 of the Commission's regulations, including but not limited to:

a. Default Management Plan—Applicant must provide a copy of its written default management plan which must contain all of the information required by § 39.16(b), along with Applicant's most recently documented results of a test of its default management plan.

See attached Default Management Plan.

b. Definition of default—Applicant must describe or otherwise document:

(1) The events (activities, lapses, or situations) that will constitute a clearing member default;

LedgerX LLC, doing business as FTX US Derivatives ("FTX"), is a derivatives clearing organization (the "Clearinghouse"). The Clearinghouse defines default as the event when the participant account collateral is below the maintenance margin requirement, and liquidating an account on the Central Limit Order Book has not successfully resulted in the account being above its maintenance margin requirement.

(2) What action Applicant can take upon a default and how Applicant will otherwise enforce the rules applicable in the event of default, including the steps and the sequence of the steps that will be followed. Identify whether a Default Management Committee exists and, if so, its role in the default process; and

The clearing house initiates an entirely automated sequence of actions designed with the specific purpose of restoring the clearing house's balanced book.

Such sequence of events include the sequence described in c(1).

The Chief Risk Officer is responsible for the default management procedures for the clearing house. Significant changes to these procedures (as defined in the Default Management Plan) require approval from the Board of Directors and the Risk Management Committee.

The clearing house does not have a Default Management committee because the process is highly automated. The Chief Risk Officer will escalate to the Risk Management Committee as appropriate.

(3) An example of a hypothetical default scenario and the results of the default management process used in the scenario.

1. Alice wants to trade a BTC derivative contract with a small notional size. She decides to trade the micro contract with notional size of 0.0001 BTC. The micro futures contract is trading on the limit order book at $60,002/BTC, with best bid at $60,001/BTC for 20,000 contracts, and best ask at $60,003/BTC for 35,000 contracts.
    a. The micro contract's value is thus $6.0002 ($60,002/BTC *0.0001 BTC).
2. According to the clearing house's proprietary real time margin system, the initial margin per contract is currently $1.20004 (20% of the contract value) and maintenance margin is $0.90003 (15% of the contract value).
3. Participant Alice wishes to establish a long position of 20,000 micro contracts at a price of $60,000/BTC. Alice deposits in USD and has $30,000 worth of free collateral in her account.
    a. She places a limit order on the bid side at $60,000/BTC for 20,000 lots.
    b. At a market price of $60,000/BTC initial margin per contract would be $1.20 and maintenance margin per contract would be $0.90.
    c. As soon as this limit order is submitted, $24,000 ($1.20* 20,000 contracts) worth of collateral is locked. Alice has $6,000 worth of remaining free collateral. The limit order rests on the book because it was not immediately filled.
4. 5 minutes later, the prevailing market price moves down. Alice's limit order for 20,000 lots is filled in full.
    a. Once Alice's position is established, the collateral lock drops from the initial margin level to the maintenance margin level. Alice has $18,000 worth of collateral locked as maintenance margin, and $12,000 worth of free collateral.
5. The BTC futures contract price continues to fluctuate. 20 hours later, the price drops to $55,000/BTC.

a. The collateral lock is now $16,500 for maintenance margin. However, Alice's free collateral has dropped from $12,000 to $3,500 due to the price decline of $5,000/BTC per each contract Alice holds in the long position along with the decrease in maintenance margin as the position notional decreases.

b. As the futures contract price fluctuates, Alice continues to receive informational alerts automatically generated by the clearing house's margin system. It is Alice's responsibility to deposit additional collateral as the account moves towards the maintenance margin level and free collateral amount continues to decline.

6. Hypothetically, Alice fails to deposit additional collateral to her account. 2 hours later, BTC futures contract price declined further to drop below $52,940/BTC.

a. Alice now has less collateral than that is required by the maintenance margin threshold, and the liquidation engine begins to reduce Alice's position size.

b. Note that if Alice had funded her account with additional collateral just before the contract price moved below $52,942/BTC then the liquidation engine would not have been triggered because the newly deposited collateral would have increased Alice's total collateral to exceed the maintenance margin requirement.

c. The liquidation engine will first cancel all pending orders, which Alice does not have in this scenario.

d. The liquidation engine will partially liquidate Alice's position using marketable limit orders, in a manner that does not cause meaningful price disruption, until the account's collateral is greater than the maintenance margin level.

e. Within 6 seconds, a sell order to liquidate 10% of Alice's position (2,000 micro contracts) is successfully filled at $52,940/BTC. Alice's long position is now 18,000 contracts with a corresponding maintenance margin level of $14,294. Alice's account now has free collateral of $1,586 and at a market price of $52,940/BTC the liquidation engine does not have to sell any more contracts. Alice's account lost $14,120 in the decrease in BTC price from $60,000 to $52,940.

7. No loss is sustained by the clearing house. Alice's risk position is successfully managed by the fully automated liquidation engine.

c. Remedial action—Applicant must describe or otherwise document:

(1) The authority and methods by which Applicant may take appropriate action in the event of the default of a clearing member which may include, among other things, liquidating positions, hedging, auctioning, allocating (including any obligations of clearing members to participate in auctions or to accept allocations), and transferring of customer accounts to another clearing member (including an explanation of the movement of positions and collateral on deposit); and

Pursuant to authority in the Participant Agreement and Rulebook, FTX's automated systems perform the following actions sequentially in near-real-time, at a frequency determined by the Chief Risk Officer.

Waterfall Layer	Sub-Paths through Layer	Methodology
Liquidation Orders	N/A	The first step is to carefully close positions with rate-limited liquidation orders in the market. An account begins to be liquidated if the total account value divided by the total position notional, which is the position size multiplied by its market price ("Margin Fraction"), is less than its maintenance margin. During the liquidation process, users may not send orders using their account. To close positions in the market while minimizing impact, the liquidation engine will periodically send standard limit orders on behalf of the liquidated account. Approximately every Liquidation Delay Period seconds (currently 6 seconds), the liquidation engine sends the Liquidation Percentage (currently 10 percent) of the position size as an order on the market.

Waterfall Layer	Sub-Paths through Layer	Methodology
Match-Up of Defaulting Open Interest	N/A	The speed of the liquidation process depends on the size of the position. For small positions, the Clearinghouse will aim to fully close the position in about a minute. If partially liquidating the account causes its Margin Fraction to rise above the maintenance margin threshold, the liquidation process terminates. Otherwise, the process continues. Defaulting open interest is matched to counterparties using one or both of the following methods. Typically, a liquidation will proceed directly through the Primary BLP path, skip the secondary BLP path, and if necessary, proceed to the Guaranty fund. The backstop liquidity provider system is activated when an account's margin drops below the minimum Margin Fraction needed to avoid being closed against the backstop liquidity provider ("Auto-Close Margin Fraction" or "ACMF"), and therefore closer to bankruptcy. In this step, the account will have its defaulting positions closed down at the bankruptcy price (the market price that would set an account value at zero, or "Zero Price"), and the positions will be transferred to the backstop liquidity provider. If the account's value is at or above the Zero Price, the liquidation terminates here. If account's value is below the Zero Price, the waterfall will continue to the next step, in which the Guaranty fund steps in to bring the account's value back to the Zero Price.
	Primary Backstop Liquidity Providers (BLPs)	The Primary BLPs sign up to the Backstop Liquidity Provider Program voluntarily and should ordinarily be able to absorb all assignment of open interest from defaulting positions, without resorting to Secondary BLPs. Primary Backstop Liquidity Providers ("BLPs") have a maximum capacity per minute and per hour and the position is closed against BLPs in proportion to the remaining capacity.
	Secondary BLPs (subpath, not sublayer)	Secondary BLPs will only have their positions auto-closed if an account hits the Auto-Close Margin Fraction *and* the Primary BLPs are out of capacity. The Secondary BLP is an alternate route to the Guaranty Fund. As long as BLP capacity remains, the Secondary BLP path will be skipped entirely, and the waterfall will proceed downwards to the Guaranty Fund and beyond without hitting the Secondary BLPs. Any remaining open interest not assigned to a takeover counterparty is assigned to participants with large opposing positions (starting with the top 10 opposing positions, more if their total is insufficient), in proportion to their position sizes.
Guaranty Fund	N/A	If an account's value hits the Zero Price, the Guaranty fund will pay out to bring the account's balance back to 0. In other words, the Guaranty Fund pays out the difference between the current account value and the bankruptcy price.
Settlement Variation Margin Gain Haircutting		If the account is bankrupt and the Guaranty Fund is empty, the remaining losses are taken from positions with positive unrealized Profit and Loss (proportionally to Profit and Loss).
Full Tear-Up/Bankruptcy		The Clearinghouse is bankrupt. Positions are torn up after consultations with the Risk Management Committee, the Board of Directors, and regulators as appropriate.

Actions taken by a clearing member or other events that would put a clearing member on Applicant's "watch list" or similar device.

FTX operates an entirely collateral-based margin system. However, the clearing house develops and maintains a sophisticated review and internal assessment and monitoring process for each participant.

Additionally, the clearing house maintains a watch list for existing participants that engage in suspicious market activity, repeated or excessive liquidation in excess of the risk monitoring program, where the clearing house has the discretion to increase margin requirements, impose risk reducing transactions, and suspense trading and clearing.

d. Process to address shortfalls—Applicant must describe or otherwise document:

(1) Procedures for the prompt application of Applicant and/or clearing member financial resources to address monetary shortfalls resulting from a default;

FTX's automated systems immediately apply guaranty fund resources via internal ledger transactions whenever there is a need to address monetary shortfalls resulting from a default.

(2) How Applicant will make publicly available its default rules including a description of the priority of application of financial resources in the event of default (*i.e.*, the "waterfall"); and

FTX will make publicly available its default rules available via its Rulebook, which is posted on its website. FTX will make publicly available a description of the default waterfall on its website.

(3) How Applicant will take timely action to contain losses and liquidity pressures and to continue to meet each obligation of Applicant.

FTX's automated systems act upon underwater positions in real-time, without the need for human intervention. This approach significantly reduces the risk of runaway losses *versus* credit-based systems, where losses can accumulate for much longer periods of time, and where action to contain losses is manual and therefore not timely.

e. Use of cross-margin programs—Describe or otherwise document, as applicable, how cross-margining programs will provide for fair and efficient means of covering losses in the event of a default of any clearing member participating in the program.

While FTX would like to offer cross-margining programs in the future, FTX does not currently offer cross-margining programs.

f. Customer priority rule—Describe or otherwise document rules and procedures regarding priority of customer accounts over proprietary accounts of defaulting clearing members and, where applicable, specifically in the context of specialized margin reduction programs such as cross-margining or common banking arrangements with other derivatives clearing organizations, clearing agencies, financial market utilities or foreign entities that perform similar functions.

FTX does not currently deal with clearing members who carry customer accounts, only direct clearing members. FTX does not currently offer cross-margining or other banking arrangements with other derivatives clearing organizations, clearing agencies, financial market utilities or foreign entities that perform similar functions.

The Clearinghouse holds clearing member funds separate from the operating funds of the Clearinghouse.

Item 07—LedgerX LLC d/b/a FTX US Derivatives Rules

version 21.[__]

Draft—December 6, 2021

Chapter 1 Definitions

Rule 1.1 Definitions
Rule 1.2 Rules of Construction

Chapter 2 Company Governance

Rule 2.1 Ownership
Rule 2.2 Board
Rule 2.3 Officers
Rule 2.4 Eligibility and Fitness
Rule 2.5 LedgerPrime
Rule 2.6 Committees and Subcommittees
Rule 2.7 Regulatory Oversight Committee
Rule 2.8 Risk Management Committee
Rule 2.9 Participant Committee
Rule 2.10 Nominating Committee
Rule 2.11 Disciplinary Panel and Appeals Committee
Rule 2.12 Emergency Rules
Rule 2.13 Conflicts of Interest
Rule 2.14 Recordkeeping
Rule 2.15 Information-Sharing Agreements
Rule 2.16 Recordkeeping and Reporting Requirements
Rule 2.17 Public Information

Chapter 3 Participants

Rule 3.1 Jurisdiction, Applicability of Rules

Rules of LedgerX LLC

Introduction

The Commodity Exchange Act requires that LedgerX LLC comply with the core principles set forth in the Commodity Exchange Act, as amended, and the regulations, rules and orders of the Commodity Futures Trading Commission, and establish, monitor and enforce its Rules relating to its business as a Swap Execution Facility ("SEF"), Designated Contract Market ("DCM"), and Derivatives Clearing Organization ("DCO"). The following Rules of LedgerX LLC pertain to the trading of Company Contracts on the Company DCM and the Company SEF, the clearing of Company Contracts on the Company DCO, the clearing of other Contracts as a provider of Clearing Services, and the rights and Obligations of Participants in connection with such activities.

***Chapter 1* Definitions**

Rule 1.1 Definitions

As used in these Rules, the following terms have the following respective meanings:

Affiliate: A Person who, directly or indirectly, controls, is controlled by, or is under common control with another Person.

Appeals Committee: A committee of the Board composed of Directors pursuant to Rule 2.11, and that acts in an adjudicative role and fulfills various adjudicative responsibilities and duties as described in Chapter 9.

Applicable Law: With respect to any Person, any statute, law, regulation, rule or ordinance of any government, governmental or self-regulatory authority applicable to such Person, including without limitation the CEA and CFTC Regulations and any laws and regulations relating to economic or trade sanctions.

As soon as technologically practicable: As soon as possible, taking into consideration the prevalence, implementation and use of technology by comparable market participants.

Authorized Representative: With respect to any Participant that is an entity, an officer of such entity who is responsible for supervising all activities of the Participant, its Authorized User(s) and its employees relating to Transactions, and for providing information regarding the Participant to the Company upon request of the Company.

Authorized User: A natural person who is either employed by or is an agent of a Participant and who is authorized by the Participant to trade on the Company DCM and/or the Company SEF on behalf of the Participant, and in the case of FCM Participants, intermediate Orders and clear Transactions on behalf of Customers, provided that the Participant maintains supervisory authority over such individual's trading activities, but Authorized Users shall not include (i) employees or agents of Customers or (ii) Customers that are natural persons.

Binary Contract means an options contract with two positions which settle to an outcome of "YES" or "NO," rather than settling to a price or value.

Block Trade: A privately negotiated transaction effected away from the Platform in accordance with Rule 5.7.

Board: The Board of Directors of the Company.

Bitcoin: A Digital Currency.

Business Day: Any day on which the Company DCM, the Company SEF, or another DCM or SEF that clears trades through the Company DCO is open for trading, as the context requires.

CEA: The Commodity Exchange Act, as amended.

CFTC Regulations: The regulations of the CFTC, as in effect from time to time, including any Commission-issued orders or interpretive or no-action letters.

Chief Compliance Officer: The individual appointed by the Board to serve as the Company's chief compliance officer.

Chief Executive Officer: The individual appointed by the Board to serve as the Company's chief executive officer.

Chief Risk Officer: The individual appointed by the Board to serve as the Company's chief risk officer.

Cleared Swaps Customer: As defined in § 22.1 of CFTC Regulations.

Cleared Swaps Customer Account: As defined in § 22.1 of CFTC Regulations and, for purposes of these Rules, shall include an account established and maintained for a Cleared Swaps Customer by the Company on the Company's books and records to which a financial asset is or may be credited in accordance with these Rules and such other procedures as the Company may implement from time to time.

Collateral Account: With respect to: (1) Participants, including an FCM Participant's Proprietary Accounts, each Participant's and FCM Participant's Participant Account and an account opened and maintained by the Company at a Settlement Bank (a) to which a Participant or FCM Participant transfers funds and (b) from which the Company is authorized to debit fees and margin or option premium, and debit or credit settlement payments, as applicable; and (2) FCM Participants, each FCM Participant's Customer Account and an account opened and maintained by the Company at a Settlement Bank (a) to which an FCM Participant transfers Customer Funds and (b) from which the Company is authorized to debit fees and margin or option premium, and debit or credit settlement payments, as applicable.

Cleared Swaps Customer Collateral: As defined in § 22.1 of CFTC Regulations.

Cleared Swaps Proprietary Account: As defined in § 22.1 of CFTC Regulations.

Clearing House means the Company, in its capacity as a DCO.

Clearing Services means the provision by the Clearing House to another registered DCM that is unaffiliated with the Company of fully collateralized clearing, settlement and ancillary services as set forth in Chapter 13.

Clearing Privileges: Any right granted by the Company to a Participant to clear Company Contracts or Kalshi Binary Contracts.

Commission or CFTC: The U.S. Commodity Futures Trading Commission.

Company: LedgerX LLC. For the avoidance of doubt, references to the "Company" generally shall refer to the Company in its capacity as a DCM, SEF, and/or DCO, as the context requires.

Company Contract: Any derivative contract, including a futures contract, option contract or swap agreement, based on one or more Underlying and listed for trading on the Company DCM or the Company SEF or subject to the Rules.

Company Contract Specifications: The terms and conditions of a Company Contract as initially published in the Rules and posted on the Website and thereafter as published in the Rules, posted on the Website and sent in Participant Notices.

Company DCM: The Designated Contract Market of the Company.

Company DCO: The Derivatives Clearing Organization of the Company.

Company Official: A Director, Officer, committee member, or such other individual as the Board may designate from time to time.

Company Personnel: A Company employee, consultant of the Company, contractor of the Company or agent of the Company.

Company Representative: Any Company Official, Company employee, consultant of the Company, contractor of the Company or agent of the Company.

Company SEF: The Swap Execution Facility of the Company.

Company Telecommunication Systems: The Company's designated telecommunications systems (*e.g.,* telephone and instant messaging) used for pretrade communications and noncompetitive executions permitted in accordance with these Rules, access to which is provided to Participants by the Company.

Compliance Department: The department, reporting to the Chief Compliance Officer, that is responsible for compliance, investigations and disciplinary proceedings.

Contract means any derivative contract, including a futures contract, Binary Contract, option contract or swap agreement, based on one or more Underlying and for which the Clearing House provides Clearing Services subject to the Rules.

Critical Security Parameters or CSPs: Company-assigned private authentication tokens such as automated passwords and cryptographic keys used to access the Platform together with the User ID for security purposes.

Customer: (i) A Participant that has authorized an Executing Participant to execute Orders on behalf of such Participant on or subject to the Rules of the Company, provided that such Participant shall not be deemed to be a Customer with respect to the clearing or settlement of its Transactions or its margin or option premium associated with such Transaction; (ii) a Cleared Swaps Customer; (iii) a Futures Customer; or (iv) both an Executing Participant's Customer and a Cleared Swaps Customer or a Futures Customer, in each case as the context requires.

Customer Account: A Cleared Swaps Customer Account or a Customer Segregated Account, as the context requires.

Customer Funds: As defined in CFTC Regulation 1.3.

Customer ID: The identifying code an FCM Participant assigns to a Customer and includes in each Customer Order to identify the individual customer on whose behalf the FCM Participant is exercising Trading Privileges and/or Clearing Privileges.

Customer Segregated Account: A "futures account," as defined in CFTC Regulation 1.3, and, for purposes of these Rules, shall include an account established and maintained for a Futures Customer by the Company on the Company's books and records to which a financial asset is or may be credited in accordance with these Rules and such other procedures as the Company may implement from time to time.

Customer Type Indicator Code or CTI: A symbol that indicates the buying and selling customer types, as required by CFTC Regulation 1.35(g).

Defaulted Obligation: For any Participant, all amounts owing by the Defaulting Participant, as well as any amounts owing by the Company arising out of or in any way relating to the Defaulting Participant's default.

Defaulting Participant: A Participant to whom a default occurs pursuant to Rule 7.1 or 14.1.

Derivatives Clearing Organization or DCO: As set forth in Section 1a(15) of the CEA and registered with the Commission pursuant to Section 5b of the CEA and in accordance with the provisions of Part 39 of CFTC Regulations.

Designated Contract Market or DCM: A board of trade designated by the CFTC as a contract market under Section 5 of the CEA and in accordance with the provisions of Part 38 of CFTC Regulations.

Digital Currency: A medium of exchange stored and transferred electronically, including, but not limited to, Bitcoin and Ether.

Director: A member of the Board.

Disciplinary Action: Any inquiry, investigation, disciplinary proceeding, appeal from a disciplinary proceeding, summary imposition of fines, summary suspension or other summary action.

Disciplinary Panel: A panel appointed by the Regulatory Oversight Committee pursuant to Rule 2.11 to act in an adjudicative role and fulfill various adjudicative responsibilities and duties as described in Chapter 9.

Discretionary Order: As defined in Rule 8.10.

EFP transaction: An exchange for physical transaction effected away from the Platform in accordance with Rule 5.8.

Eligible Contract Participant or ECP: As set forth in Section 1a(18) of the CEA and as further defined in CFTC Regulation 1.3(m).

Emergency: Any occurrence or circumstance which, in the opinion of the Board, the Chief Executive Officer, the Chief Compliance Officer, or a designee duly authorized to issue such an opinion, requires immediate action, and which threatens, or may threaten, such things as the fair and orderly trading in, the liquidation, settlement, delivery, or the integrity of, any Company Contract, or the timely collection and payment of funds in connection with clearing and settlement by the Company, including without limitation:

a. any circumstance that may materially affect the performance of any Company Contract, including without limitation failure of the payment system, the bankruptcy or insolvency of any Participant, or any actual, attempted or threatened theft or forgery of, or other interference with, the Underlying or delivery or transfer thereof;

b. any action taken by any United States or foreign regulatory, self-regulatory, judicial, arbitral, or governmental (whether national, state or municipal) or quasi-governmental authority, or any agency, department, instrumentality, or subdivision thereof; or other Person exercising, or entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power; or any other entity registered with the Commission, board of trade, market or facility which may have a direct im-

pact on trading on the Company or clearing and settlement of any Company Contract;

c. any actual, attempted or threatened corner, squeeze, congestion, or undue concentration of positions in any Company Contract;

d. any other circumstance that may have a severe, adverse effect upon the functioning of the Company DCM, the Company SEF, or the Company DCO; or

e. any manipulative or attempted manipulative activity.

Emergency Action: An action deemed to be necessary or appropriate to respond to an Emergency and taken pursuant to Rule 2.12.

Emergency Rules: Procedures or rules adopted in response to an Emergency pursuant to Rule 2.12.

Executing Participant: A Participant that has executed a Participant Application and Agreement and is authorized to enter into Orders and Transactions for its own account and is authorized to execute Orders as agent for other Participants and is registered with the Commission as a futures commission merchant, introducing broker, commodity pool operator or commodity trading advisor, or is exempt from registration as such.

FCM Participant: A Participant that is registered with the Commission as a Futures Commission Merchant and as a swap firm and to whom the Company has granted Trading Privileges and Clearing Privileges with respect to its Customer and Proprietary Account, as applicable.

Futures Commission Merchant or FCM: As defined in Section 1a(28) of the CEA and in CFTC Regulation 1.3(p).

Futures Customer: As defined in CFTC Regulation 1.3.

Futures Proprietary Account: A "proprietary account," as defined in CFTC Regulation 1.3.

Independent Software Vendor or ISV: A Person that makes available to Participants a system or platform offering smart order routing, front-end trading applications, aggregation, or a combination of the foregoing, but that does not provide Participants the ability to effect Swaps on such system or platform.

Initial Margin is the amount the Company estimates it requires from a Participant to protect the Company from exposures to future price fluctuations in the Participant's Company Contract during the interval between the time the Participant enters into the position and the time within which the Company estimates it would be able to liquidate the Participant's Company Contract with at least 99 percent confidence.

Kalshi Binary Contract means a Binary Contract that is: approved by the Clearing House for Clearing Services pursuant to the Clearing House Rules; listed by Kalshi for trading by Kalshi Participants; entered into between two Kalshi Participants; and fully collateralized when entered into on Kalshi.

Kalshi Binary Contract Specifications means the Kalshi Binary Contracts specifications set forth in Chapter [13].

Kalshi Participant means a member of Kalshi that has submitted the applicable Participant Application and Agreement and has been approved by the Clearing House to submit Kalshi Binary Contracts to Clearing House for Clearing Services, which approval has not been revoked or withdrawn, and maintains a Collateral Account and Participant Account with the Clearing House.

KalshiEX, LLC or Kalshi shall mean KalshiEX, LLC, which is a DCM registered with the CFTC for which the Clearing House provides Clearing Services as specified in Chapter 13 of these Rules.

LedgerPrime: As defined in Rule 2.5.

Legal Entity Identifier or LEI: The identifying code that is required of each counterparty to any swap subject to the CFTC's jurisdiction and that is used in all recordkeeping and all swap data reporting pursuant to Part 45 of CFTC Regulations, including any predecessor identifiers and including the Global Markets Entity Identifier or GMEI, which is the current identifier required by the CFTC until the establishment of a global Legal Entity Identifier system. LEIs must be renewed on an annual basis.

Life Cycle Event: Any event that would result in either a change to a primary economic term of a Swap or to any primary economic terms data previously reported to a Swap Data Repository in connection with a Swap. Examples of such events include, without limitation, a counterparty change resulting from an assignment or novation; a partial or full termination of the Swap; a change to the end date for the Swap; a change in the cash flows or rates originally reported; availability of a LEI for a Swap counterparty previously identified by name or by some other identifier; or a corporate action affecting a secu-

rity or securities on which the swap is based (*e.g.,* a merger, dividend, stock split, or bankruptcy). Life Cycle Event data means all of the data elements necessary to fully report any Life Cycle Event.

Liquidity Provider: As defined in Chapter 4.

Liquidity Provider Agreement: An agreement between the Company and a Liquidity Provider that must be executed for a Participant to act as a Liquidity Provider.

Maintenance Margin is the minimum positive amount that must be maintained in the Participant's Company account to protect the Company from exposures to risk from the Participant's Company Contract(s).

Market Participant Director: A Director who has been found by the Board to be an authorized representative of a Participant and suitable to be a Director pursuant to Section 5b(c)(2)(Q) of the CEA.

Matching Engine: The set of algorithms through which Orders are matched.

Material Relationship: As set forth in Rule 2.2F.

NFA: The National Futures Association.

Nominating Committee: The committee of the Board constituted in accordance with Rule 2.10.

Notice of Charges: As set forth in Rule 9.4.

Novation: The process by which a party to a Contract entered into on the Company SEF, Company DCM, or another SEF or DCM that clears through the Company DCO transfers all of its rights, liabilities, duties and obligations under the Contract to a new legal party other than the counterparty to the original Contract. The transferee accepts all of the transferor's rights, liabilities, duties and obligations under the original Contract. A Novation is valid as long as the transferor and the remaining party to the original Contract are given notice, and the transferor, transferee and remaining party to the original Contract consent to the transfer.

Obligation: Any Rule, order or procedure issued by the Company, including a Participant Notice or other requirement implemented by the Company under the Rules (including each term and condition of a Company Contract), as well as any contractual obligations between, on the one hand, a Person, and on the other hand, the Company, and any Order or Transaction entered into by a Participant or its Authorized User.

OFAC: The Office of Foreign Assets Control of the U.S. Department of the Treasury.

Officer: An individual as set forth in Rule 2.3.

Operating Agreement: The Limited Liability Company Operating Agreement of the Company, as it may be modified from time to time.

Order: Either a bid or an offer for a Company Contract entered on the Platform or subject to the Rules.

Order for Relief: The filing of a petition in bankruptcy in a voluntary case and the adjudication of bankruptcy in an involuntary case.

Oversight Panel: As defined in CFTC Regulation 1.69,

Participant: A Person that has executed the Participant Application and Agreement and is authorized to enter into Orders and Transactions for its own account. As used in the Rules, the term Participant includes an FCM Participant, an Executing Participant and a Liquidity Provider unless the context requires otherwise. A Participant must be an ECP to be eligible to enter into Transactions on the Company SEF or another SEF that clears through the Company DCO, or Block Trades on the Company DCM or on another DCM. A Participant is not required to be an ECP to be eligible to enter into EFP and central limit order book transactions on the Company DCM or on another DCM. References to the term Participant in the Rules includes a Kalshi Participant, but only with respect to the provision of Clearing Services by the Clearing House.

Participant Account: An account established and maintained for a Participant by the Company on its books and records to which a financial asset is or may be credited in accordance with these Rules and such other procedures as the Company may implement from time to time.

Participant Application and Agreement: An application submitted by an applicant for Participant status and an agreement between the Company and a Participant that must be executed for a Participant to gain access to the Company SEF, Company DCM and/or the Company DCO for the entry and execution of Orders and/or clearance of Transactions.

Participant Committee: The committee of the Board constituted in accordance with Rule 2.9.

Participant Notice: A communication sent by or on behalf of the Company to all Participants in accordance with Rule 2.17.

Participant Portal: The vehicle through which Participants send and receive messages to or from the Company and other Participants, update account and contact information, and submit deposit and withdrawal notifications.

Permitted Transaction: Any transaction involving a Swap that is not subject to the trade execution requirement in Section 2(h)(8) of the CEA.

Person: As defined in Section 1a(38) of the CEA and in CFTC Regulation 1.3(u).

Platform: The electronic trading facility operated by the Company to provide Participants with the ability to execute Orders and Transactions from the interaction of multiple bids and multiple offers within a pre-determined, non-discretionary automated trade matching and execution algorithm.

Position Limit: The maximum number of positions, either net long or net short, in one Series or a combination of various Series with the same Underlying that may be held or controlled by a Participant as prescribed by the Company or the Commission.

Proprietary Account: A Cleared Swaps Proprietary Account or a Futures Proprietary Account, as the context requires.

Proprietary Data and Personal Information: Information identifying a natural person (*e.g.,* name, e-mail address) or other data proprietary to any Person that discloses such Person's trade secrets, market positions and/or other business transactions, excluding Transaction Data.

Proprietary Information: As set forth in Rule 11.3A.

Public Director: A Director who has been found by the Board to have no Material Relationship with the Company in accordance with Rule 2.2F.

Public dissemination and publicly disseminate: To publish and make available Swap transaction and pricing data in a non-discriminatory manner, through the Internet or other electronic data feed that is widely published (in a manner that is freely available and readily accessible to the public) and in machine-readable electronic format.

Regulatory Agency: Any government body, including the Commission, and any organization, whether domestic or foreign, granted authority under statutory or regulatory provisions to regulate its own activities and the activities of its members, and includes LedgerX LLC, any other clearing organization or contract market, and the NFA.

Regulatory Oversight Committee: The committee of the Board constituted in accordance with Rule 2.7.

Required Swap Continuation Data: As set forth in CFTC Regulation 45.1.

Required Swap Creation Data: As set forth in CFTC Regulation 45.1.

Required Transaction: Any transaction involving a Swap that is subject to the trade execution requirement in Section 2(h)(8) of the CEA.

Regulatory Swap Data: Includes (i) Swap Transaction and Pricing Data, (ii) Required Swap Creation Data and (iii) Required Swap Continuation Data.

Reporting Counterparty: As set forth in Part 45 of CFTC Regulations and means the Participant that is designated as the Reporting Counterparty pursuant to Rule 5.1.

Respondent: Any Person subject to a Disciplinary Action and such Person's legal counsel or representative.

Risk Management Committee: The committee appointed by the Board and constituted in accordance with Rule 2.8.

Rules: These rules of the Company, as in effect and as may be amended from time to time.

Self-Regulatory Organization: As set forth in CFTC Regulation 1.3(ee) and includes a DCO.

Series: All Company Contracts having identical terms, including Settlement Date and the value or range of values of an Underlying or category of asset class.

Settlement Bank: A depository approved by the Company as an acceptable location for depositing Participant funds or Customer Funds, as applicable.

Settlement Bank Business Day: A day a Settlement Bank is open for business.

Settlement Date: A Business Day on which: (1) a Participant properly tenders to the Company an exercise notice on an option contract, resulting in the delivery of the Underlying and payment on the next Settlement Bank Business Day following the exercise; (2) an open futures contract expires; or (3) the Company automatically closes out and settles a Participant's Company Contracts that offset one another. A Company Contract that is an option and that

has not been exercised on or before the last trading day will expire with no value.

Swap: A Company Contract that is a swap as defined in Section 1a(47) of the CEA and as further defined by CFTC Regulation 1.3(xxx), and shall include Company Contracts that are options as set forth in the Company Contract Specifications.

Swap Data Repository or SDR: As set forth in Section 1a(48) of the CEA and registered with the Commission pursuant to Section 21 of the CEA and in accordance with Part 49 of CFTC Regulations.

Swap Execution Facility or SEF: As set forth in Section 1a(50) of the CEA and registered with the Commission pursuant to Section 5h of the CEA and in accordance with the provisions of Part 37 of CFTC Regulations.

Swap Transaction and Pricing Data: Any data required to be reported under Part 43 of CFTC Regulations.

Trading Hours: The hours during which Orders may be entered on the Company DCM or the Company SEF or subject to the Rules, as set forth in Rule 5.6, and as may be revised from time to time, by the Company as disclosed on the Website and through Participant Notices.

Trading Privilege: Any right granted by the Company to a Participant to transmit Orders for a Company Contract; provided, however, that Trading Privileges for the Kalshi Binary Contracts are not provided through the Company in its capacity as a DCM.

Transaction: Any purchase or sale of any Company Contract made on the Company or pursuant to the Rules.

Transaction Data: Orders, bids, offers and related information concerning Company Contracts executed subject to the Rules, together with all information and other content contained in, displayed on, generated by or derived from the Platform.

UCC: The Uniform Commercial Code as in effect in the State of New York.

Underlying: The index, rate, risk, measure, instrument, differential, indicator, value, contingency, commodity, occurrence, or extent of an occurrence that shall determine the amount payable or deliverable under a Company Contract.

Unique Swap Identifier or USI: The unique swap identifier, which shall be created, transmitted, and used for each swap executed on LedgerX as provided in CFTC Regulation 45.5.

User ID: The unique identifier registered with the Company that the Company assigns to an Authorized User, and which is included on each Order to enable the Company to identify the Person entering such Orders, and, with respect to an Order entered by an Executing Participant on behalf of a Customer, the Customer.

Variation Margin is the amount of additional margin the Company may require from a Participant to cover new or increased exposures arising from the Participant's use of margin.

Website: The Company home page or a website to which the Company home page has a link.

Withdrawing Participant: A Participant that, pursuant to these Rules, has notified the Company of its intention to terminate its status as a Participant or who has been notified by the Company of termination of its status as a Participant.

Rule 1.2 Rules of Construction

For purposes of these Rules, the following rules of construction shall apply:

1. Words conveying a singular number include the plural number, where the context permits, and vice versa.
2. References to any Regulatory Agency include any successor Regulatory Agency.
3. If, for any reason, a Rule is found or determined to be invalid or unenforceable by a court of law, the Commission or another governmental or quasi-governmental agency with supervisory authority, such Rule shall be considered severed from the Rules and all other Rules shall remain in full force and effect.
4. All references to time are to the local time in New York, New York unless expressly provided otherwise.
5. All terms defined in the UCC and not otherwise defined herein shall have the respective meanings accorded to them therein.
6. In the event of a conflict between these Rules and a non-disclosure agreement between the Company or an Affiliate of the Company and a Participant or Customer, these Rules shall govern.

7. In the event of a conflict between these Rules and the CEA or CFTC Regulations, the applicable provision of the CEA and/or CFTC Regulation shall govern.

Chapter 2 Company Governance

Rule 2.1 Ownership

The Company is a Delaware limited liability company. The management and operation of the Company is governed by the Operating Agreement and the Rules. Participant status does not confer any equity interest or voting right in the Company.

Rule 2.2 Board

A. The Board shall, subject to applicable provisions in the Operating Agreement:

1. Be the governing body of the Company;
2. Be constituted, and shall constitute its committees or subcommittees, to permit consideration of the views of market participants;
3. Have charge and control of all property of the Company;
4. Provide, acquire and maintain adequate Company offices and facilities;
5. Fix, determine and levy all Participant or other fees when necessary;
6. Determine the Company Contracts and the Company Contract Specifications;
7. Adopt, amend or repeal any Rules, with the input of Officers and committees or subcommittees;
8. Have the power to act in Emergencies as detailed in Rule 2.12; and
9. Have the power to call for review, and to affirm, modify, suspend or overrule, any and all decisions and actions of the Officers, committees or subcommittees related to the day-to-day business operations of the Company.

B. Any authority or discretion by the Rules vested in any Officer or delegated to any committee or subcommittee shall not be construed to deprive the Board of such authority or discretion and, in the event of a conflict, the determination of the matter by the Board shall prevail.

C. A majority of the Directors serving on the Board, including at least one Public Director, shall constitute a quorum for the transaction of business of the Board. At all times when the Board is conducting business at a meeting of the Board, a quorum of the Board must be present at such meeting, and the Board may act only by the decision of a majority of the Directors constituting a quorum of the Board by vote at a meeting, by unanimous written consent without a meeting, or as otherwise set forth in the Operating Agreement.

D. The Board shall comprise the number of Directors set forth in the Operating Agreement, which shall include Public Directors and Market Participant Directors in at least the number or percentage required under the CEA or CFTC Regulations, but in any event, (i) no less than two Directors shall be Public Directors and (ii) no less than two Directors shall be Market Participant Directors. Each Director (including Public Directors and Market Participant Directors) shall be appointed in accordance with the Operating Agreement, and shall serve until his or her successor is duly appointed, or until his or her earlier resignation or removal, with or without cause.

E. Each Director is entitled to indemnification pursuant to the Operating Agreement with respect to matters relating to the Company.

F. To qualify as a Public Director, an individual must be found, by the Board and on the record, to have no Material Relationship, as defined below, with the Company. The Board must make such finding at the time the Public Director is elected and as often as necessary in light of all circumstances relevant to such Public Director, but in no case less than annually. A Material Relationship is one that reasonably could affect the independent judgment or decision-making of the Director. The Board need not consider previous service as a Director of the Company to constitute a Material Relationship. A Director shall be considered to have a Material Relationship with the Company if any of the following circumstances exist or have existed within the past year:

1. such Director is or was an Officer or an employee of the Company, or an officer or an employee of an Affiliate of the Company;
2. such Director is or was a Participant; or
3. such Director is or was a director, an officer, or an employee of a Participant.

G. If any of the immediate family of a Director, *i.e.,* spouse, parents, children, and siblings, in each case, whether by blood, marriage, or adoption, or any person resid-

ing in the home of the Director or that of his or her immediate family have a Material Relationship as defined above, then that Material Relationship is deemed to apply to such Director.

H. The Board shall have procedures, as may be adopted by the Board from time to time, to remove a Director where the conduct of such Director is likely to be prejudicial to the sound and prudent management of the Company.

I. The Board shall review its performance and that of its individual Directors annually and shall consider periodically using external facilitators for such review.

Rule 2.3 Officers

A. The Board shall appoint a Chief Executive Officer, Chief Compliance Officer, Chief Risk Officer and such other officers of the Company as it may deem necessary or appropriate from time to time.

B. The Chief Compliance Officer must:

1. have the background and skills appropriate for fulfilling the responsibilities of the position;

2. be an individual who would not be disqualified from registration under Section 8a(2) or 8a(3) of the CEA;

3. report to the Board or, in the event that the Board delegates its authority to the Chief Executive Officer, to the Chief Executive Officer; and

4. fulfill his or her duties as required pursuant to CFTC Regulations, including, but not limited to, the preparation and submission of an annual compliance report as described in CFTC Regulation 39.10(c)(3), and assist the Regulatory Oversight Committee in its preparation of an annual report.

C. Any Officer may also be a director, officer, partner or employee of the Company or of any of its Affiliates, subject to disclosure and resolution of conflicts of interest. Notwithstanding the foregoing, the Chief Compliance Officer and the Chief Risk Officer must be two different individuals.

D. The Officers shall have such powers and duties in the management of the Company as the Board may prescribe from time to time, subject to any limitations set forth in the Operating Agreement.

E. Each Officer is entitled to indemnification pursuant to the Operating Agreement with respect to matters relating to the Company.

Rule 2.4 Eligibility and Fitness

A. An individual may not serve as a Director or Officer, or serve on a committee or subcommittee established by the Board or hold a 10 percent or more ownership interest in the Company, if the individual:

1. within the prior 3 years has been found, by a final decision of a court of competent jurisdiction, an administrative law judge, the CFTC, or any Self-Regulatory Organization, to have committed a disciplinary offense;

2. within the prior 3 years has entered into a settlement agreement in which any of the findings or, in the absence of such findings, any of the acts charged included a disciplinary offense;

3. is currently suspended from trading on a Designated Contract Market or a Swap Execution Facility, is suspended or expelled from membership in a Self-Regulatory Organization, is serving any sentence of probation, or owes any portion of a fine or penalty imposed pursuant to either:

a. a finding by final decision of a court of competent jurisdiction, an administrative law judge, the CFTC or any Self-Regulatory Organization that such person committed a disciplinary offense; or

b. a settlement agreement in which any of the findings or, in the absence of such findings, any of the acts charged included a disciplinary offense;

4. is currently subject to an agreement with the CFTC or Self-Regulatory Organization not to apply for registration with the CFTC or for membership in the Self-Regulatory Organization;

5. is currently, or within the past 3 years has been, subject to a revocation or suspension of registration by the CFTC, or has been convicted within the past 3 years of any of the felonies listed in Section 8a(2)(D)(ii) through (iv) of the CEA;

6. is currently subject to a denial, suspension or disqualification from serving on a disciplinary panel, arbitration panel or governing board of any self-regulatory organization as that term is defined in Section 3(a)(26) of the Securities Exchange Act of 1934; or

7. is subject to a statutory disqualification pursuant to Section 8a(2) of the CEA.

For purposes of this Rule 2.4A, the terms "disciplinary offense," "final decision" and "settlement agreement" have the meaning given those terms in CFTC Regulation 1.63(a).

B. Any Director, Officer, member of a committee established by the Board and any individual nominated to serve in any such role, shall immediately notify the Chief Executive Officer if such individual is subject to one or more of the criteria in Rule 2.4A. Prior to nomination to the Board, each individual shall certify he or she is not disqualified pursuant to Rule 2.4A. Upon appointment, each Director, Officer, and member of a committee shall provide to the Company, where applicable, changes in registration information within 30 days and certification of compliance accordingly. The Company shall verify information supporting Board compliance with eligibility criteria.

C. To serve as a Director, an individual must possess the ability to contribute to the effective oversight and management of the Company, taking into account the needs of the Company and such factors as the individual's experience, perspective, skills and knowledge of the industry in which the Company operates.

D. A Director or Officer must meet any qualifications set forth from time to time in the Operating Agreement.

E. An individual may not serve on any Disciplinary Panel, arbitration panel, or the Appeals Committee during any proceeding affecting or concerning such individual, to be determined in a reasonable manner by the Company's General Counsel.

F. If the Company determines that an individual subject to this Rule 2.4 no longer meets the criteria set forth in Rule 2.4.A., the Company shall inform the CFTC of such determination. The Company shall provide to the CFTC, upon request, an individual's certification of compliance with the criteria set forth in Rule 2.4.A.

Rule 2.5 LedgerPrime

A. The Company's parent company has established LedgerPrime LLC ("LedgerPrime"), a wholly-owned subsidiary of the Company's parent company, to make markets in Company products (collectively, the "LedgerPrime Contracts") cleared by the Company and to engage in hedging activities through various offsetting transactions. Position and counterparty limits, as well as parameters on LedgerPrime hedging, will be established by the Company.

B. LedgerPrime does not receive any preferential pricing from the Company and does not have an inherent advantage over any other Participant with respect to latency or Order execution speed.

C. LedgerPrime traders are subject to the same access criteria and must abide by the same rules as all other Participants.

Rule 2.6 Committees and Subcommittees

A. The Board may create, appoint Directors to serve on, and delegate powers to, committees and subcommittees. There shall be a Regulatory Oversight Committee, a Risk Management Committee, a Participant Committee, a Nominating Committee, a Disciplinary Panel, and an Appeals Committee. The Board shall designate the chairperson of each such committee, except that the chairperson of the Board shall designate the chairperson of the Appeals Committee and the Regulatory Oversight Committee shall designate the chairperson of the Disciplinary Panel.

B. Each committee and subcommittee shall assist in the supervision, management and control of the affairs of the Company within its particular area of responsibility, subject to the Operating Agreement and the authority of the Board.

C. Subject to the authority of the Board, each committee and subcommittee shall determine the manner and form in which its proceedings shall be conducted. A majority of the members serving on a committee or subcommittee, including at least one Public Director, shall constitute a quorum for the transaction of business of a committee or subcommittee. Each committee and subcommittee may act only by the decision of a quorum, by vote at a meeting or by unanimous written consent without a meeting. The Board has the authority to overrule the decisions of any committee or subcommittee.

Rule 2.7 Regulatory Oversight Committee

A. The Regulatory Oversight Committee shall be a standing committee of the Board consisting of only Public Directors, as appointed from time to time. No less than two Public Directors shall serve on the Regulatory Oversight Committee.

B. Each member of the Regulatory Oversight Committee shall serve for a term of one calendar year from the date of his or her appointment or for the remainder of his or her term as a Public Director, and until the due appointment of his or her successor, or until his or her earlier resignation or removal, with or without cause,

as a member of the Regulatory Oversight Committee or as a Public Director. A member of the Regulatory Oversight Committee may serve for multiple terms.

C. The Regulatory Oversight Committee shall oversee the Company's regulatory program on behalf of the Board. The Board shall delegate sufficient authority, dedicate sufficient resources, and allow sufficient time for the Regulatory Oversight Committee to fulfill its mandate. The Regulatory Oversight Committee shall make such recommendations to the Board that will, in its judgment, best promote the interests of the Company. The Regulatory Oversight Committee shall also have such other powers and perform such other duties as set forth in the Rules and as the Board may delegate to it from time to time.

D. The Regulatory Oversight Committee shall appoint individuals to the Disciplinary Panel in accordance with these Rules, Applicable Law and the composition requirements of the Disciplinary Panel. The Committee shall appoint at least one person who would not be disqualified from serving as a Public Director, and who shall serve as the Chairperson of the Disciplinary Panel.

E. The Regulatory Oversight Committee shall prepare an annual report that assesses the Company's self-regulatory program for the Board and the CFTC. The annual report sets forth the regulatory program's expenses, describes its staffing and structure, catalogues disciplinary actions taken during the year, and reviews the performance of the Disciplinary Panel. Such report may be prepared in conjunction with the Chief Compliance Officer's annual compliance report as required pursuant to CFTC Regulation 39.10(c)(3).

F. Without limiting the generality of the foregoing, the Regulatory Oversight Committee shall have the authority to:

1. monitor the regulatory program of the Company for sufficiency, effectiveness, and independence;
2. oversee all facets of the regulatory program, including trade practice and market surveillance; audits, examinations, and other regulatory responsibilities with respect to Participants (including ensuring compliance with financial integrity, financial reporting, sales practice, recordkeeping, and other requirements); and the conduct of investigations;
3. review the size and allocation of the regulatory budget and resources; and the number, hiring, termination, and compensation of regulatory personnel;
4. supervise the Chief Compliance Officer of the Company, who will report directly to the Regulatory Oversight Committee and to the Board or, if the Board delegates such authority, to the Chief Executive Officer;
5. recommend changes that would ensure fair, vigorous, and effective regulation; and
6. review all regulatory proposals prior to implementation and advise the Board as to whether and how such changes may impact regulation.

Rule 2.8 Risk Management Committee

A. The Risk Management Committee shall be a standing committee consisting of no fewer than one Public Director, one Market Participant Director, and one Company Officer. The Risk Management Committee also may allow the participation of other market participants.

B. Each member of the Risk Management Committee shall serve for a term of one calendar year from the date of his or her appointment or for the remainder of his or her term as a Public Director, as applicable, and until the due appointment of his or her successor, or until his or her earlier resignation or removal, with or without cause, as a member of the Risk Management Committee or as a Public Director. A member of the Risk Management Committee may serve for multiple terms.

C. The Risk Management Committee shall oversee the Company's risk management program. The Board shall delegate sufficient authority, dedicate sufficient resources, and allow sufficient time for the Risk Management Committee to fulfill its mandate. The Risk Management Committee shall make such recommendations to the Board that will, in its judgment, best promote the interests of the Company. The Risk Management Committee shall also have such other powers and perform such other duties as set forth in the Rules and as the Board may delegate to it from time to time.

Rule 2.9 Participant Committee

A. The Participant Committee shall be a standing committee of the Board consisting of at least 35 percent Public Directors, as appointed from time to time. No less than two Public Directors shall serve on the Participant Committee.

B. Each member of the Participant Committee shall serve for a term of one calendar year from the date of his or her appointment or for the remainder of his or her term as a Public Director, as applicable, and until the due appointment of his

or her successor, or until his or her earlier resignation or removal, with or without cause, as a member of the Participant Committee or as a Public Director. A member of the Participant Committee may serve for multiple terms.

C. The Participant Committee shall determine the standards and requirements for initial and continuing membership or participation eligibility; review appeals of Company staff denials of Participant, Executing Participant and Liquidity Provider applications; and approve measures that would result in different categories or classes of Company membership. In reviewing staff denials, the Participant Committee shall not uphold any such Company staff denial if the relevant application satisfies the standards and requirements that the Participant Committee sets forth. The Participant Committee shall not, and shall not permit the Company to, restrict access or impose burdens on access in a discriminatory manner, within each category or class of Participants or between similarly situated categories or classes of Participants.

Rule 2.10 Nominating Committee

A. The Nominating Committee shall be a standing committee of the Board consisting of at least 51 percent Public Directors, as appointed from time to time. No less than two Public Directors shall serve on the Nominating Committee.

B. Each member of the Nominating Committee shall serve for a term of one calendar year from the date of his or her appointment or for the remainder of his or her term as a Public Director, as applicable, and until the due appointment of his or her successor, or until his or her earlier resignation or removal, with or without cause, as a member of the Nominating Committee or as a Public Director. A member of the Nominating Committee may serve for multiple terms.

C. The Nominating Committee shall identify individuals qualified to serve on the Board, consistent with criteria approved by the Board, and with the composition requirements set forth in the Rules or Operating Agreement. The Nominating Committee shall administer a process for the nomination of individuals to the Board. The Board shall delegate sufficient authority, dedicate sufficient resources, and allow sufficient time for the Nominating Committee to fulfill its mandate. The Nominating Committee shall make such recommendations to the Board that will, in its judgment, best promote the interests of the Company. The Nominating Committee shall also have such other powers and perform such other duties as set forth in the Rules and as the Board may delegate to it from time to time.

Rule 2.11 Disciplinary Panel and Appeals Committee

A. The Disciplinary Panel shall be:

1. a standing committee consisting of at least three members, including at least one person who would not be disqualified from serving as a Public Director who will serve as the chairperson, as appointed from time to time. At least one member of the Disciplinary Panel must be a Participant or an employee of a Participant. The Board may establish more than one Disciplinary Panel. The Regulatory Oversight Committee will appoint individuals for membership on the Disciplinary Panel. Each Disciplinary Panel shall include members with sufficient differing experience and Participant interests so as to ensure fairness and to prevent special treatment or preference for any Person.

2. responsible for conducting hearings, rendering decisions, and imposing sanctions with respect to any Disciplinary Action. The Disciplinary Panel shall also have such other powers and perform such other duties as set forth in the Rules and as the Board may determine from time to time.

B. Each member of the Disciplinary Panel shall serve for a term of two calendar years from the date of his or her appointment, and until the due appointment of his or her successor, or until his or her earlier resignation or removal, with or without cause, as a member of the Disciplinary Panel. A member of the Disciplinary Panel may serve for multiple terms.

C. The Appeals Committee shall be:

1. a standing committee consisting of at least three members of the Board. The members of the Appeals Committee and its Chairperson shall be appointed by the Chairperson of the Board, provided that, at all times the Appeals Committee shall include at least one Public Director who shall serve as the Chairperson of the Appeals Committee.

2. responsible for conducting hearings of appeals of decisions of the Disciplinary Panel, rendering decisions of such appeals, and imposing sanctions with respect to such appeals. The Appeals Committee shall also have such other powers and perform such other duties as set forth in these Rules and as the Board may determine from time to time.

D. Each member of the Appeals Committee shall serve for a term of one calendar year from the date of his or her appointment or for the remainder of his or her term as a Public Director, as applicable, and until the due appointment of his or her successor, or until his or her earlier resignation or removal, with or without cause, as a member of the Appeals Committee or as a Public Director. A member of the Appeals Committee may serve for multiple terms.

Rule 2.12 Emergency Rules

A. During an Emergency, the Company may implement temporary emergency procedures and rules pursuant to Rule 2.12D, subject to the applicable provisions of the CEA and CFTC Regulations.

B. The Chief Executive Officer or his or her designee and the Chief Compliance Officer or his or her designee, acting in conjunction or, if it is not possible to act in conjunction, acting alone, are authorized to determine whether an Emergency exists and whether Emergency Rules or Emergency Actions are warranted. Emergency Rules may require or authorize the Company, the Board, any committee of the Board or any Officer to take Emergency Actions, including, but not limited to, the following actions:

1. suspend or curtail trading in, or limit trading to liquidation, for any Company Contract;
2. extend or shorten the last trading date for any Company Contract;
3. provide alternative settlement mechanisms for any Company Contract (including by altering the settlement terms or conditions or fixing the settlement price) or suspend the transfer of the Underlying;
4. order the transfer or liquidation of open positions in any Company Contract; provided that if a Company Contract is fungible with a contract on another platform in addition to the Company, the liquidation or transfer of open interest in such Company Contract will be ordered only as directed, or agreed to, by CFTC staff or the CFTC;
5. extend, shorten or change the Trading Hours or the expiration date of any Company Contract;
6. require Participants to meet special margin requirements;
7. order the transfer of Company Contracts and the associated margin or alter any Company Contract's settlement terms or conditions;
8. impose or modify position limits, price limits, and intraday market restrictions; or
9. any other action, if so directed by the CFTC.

C. Before taking an Emergency Action, the effects of such Emergency Action on markets underlying the Company Contract(s) affected by such Emergency Action, on markets that are linked or referenced to such Company Contracts and similar markets on other trading venues, or any potential conflicts of interest shall be considered and documented as required under Rule 2.12F.

D. Before any Emergency Rule may be adopted and enforced, the Regulatory Oversight Committee shall approve the implementation of such Emergency Rule at a duly convened meeting. If the Chief Executive Officer, or his or her designee, or if the Chief Executive Officer or his or her designee is unavailable, the Chief Compliance Officer, or his or her designee, determines that Emergency Rules must be implemented with respect to an Emergency before a meeting of the Regulatory Oversight Committee can reasonably be convened, then the Chief Executive Officer, or his or her designee, or if the Chief Executive Officer or his or her designee is unavailable, the Chief Compliance Officer, or his or her designee, shall have the authority, without Board or committee action, to implement any Emergency Rules with respect to such Emergency that he or she deems necessary or appropriate to respond to such Emergency. In such circumstances, the Chief Executive Officer, or his or her designee, or if the Chief Executive Officer or his or her designee is unavailable, the Chief Compliance Officer, or his or her designee, must convene a meeting of the Regulatory Oversight Committee to ratify the actions taken by the Chief Executive Officer, or his or her designee, or the Chief Compliance Officer, or his or her designee, as soon as practicable. Whenever the Company implements an Emergency Rule or takes an Emergency Action, a duly authorized representative of the Company, where possible, will inform Participants through a Participant Notice.

E. The Company will use reasonable efforts to notify the CFTC and the Board prior to implementing, modifying or terminating an Emergency Rule. If such prior notification is not possible or practicable, the Company will notify the CFTC and the Board as soon as possible or reasonably practicable, but in any event no longer than 24 hours after implementing, modifying or terminating an Emergency Rule.

F. Upon taking any Emergency Action, the Company will document the decision-making process related to such Emergency Action, including the process for minimizing conflicts of interest, the extent to which the Company considered the effect of its Emergency Action on the Underlying markets and on markets that are linked or referenced to the contract market and similar markets on other trading venues, and reasons for using emergency authority under this Rule 2.12. Such documentation will be maintained in accordance with Rule 2.14.

G. The Chief Executive Officer, or his or her designee, or if the Chief Executive Officer or his or her designee is unavailable, the Chief Compliance Officer, or his or her designee, may determine that an Emergency has been reduced sufficiently to allow the Company to resume normal functioning, in which case any Emergency Actions responding to such Emergency will be terminated and a duly authorized representative of the Company will inform Participants through a Participant Notice.

H. Participants must promptly notify the Company of any circumstance that may give rise to a declaration of an Emergency.

Rule 2.13 Conflicts of Interest

A. Named Party in Interest Conflict

1. No member of the Board, Oversight Panel or Disciplinary Panel shall participate in such body's deliberations or voting in any matter involving a named party in interest where such member:

a. is the named party in interest in the matter;

b. is an employer, employee or fellow employee of a named party in interest;

c. is associated with a named party in interest through a "broker association" as defined in CFTC Regulation 156.1;

d. has any other significant, ongoing business relationship with a named party in interest, excluding relationships limited to Company Contracts; or

e. has a family relationship (*i.e.,* the member's spouse, parents, children, and siblings, in each case, whether by blood, marriage, or adoption, or any person residing in the home of the member or that of his or her immediate family) with a named party in interest.

2. Prior to consideration of any matter involving a named party in interest, each member of the deliberating body shall disclose to the Chief Compliance Officer whether such member has one of the relationships listed above with a named party in interest.

3. The Chief Compliance Officer shall determine whether any member of the relevant deliberating body is subject to a conflicts restriction under this Rule 2.13A. Such determination shall be based upon a review of the following information:

a. information provided by such member pursuant to clause (2) above; and

b. any other source of information that is held by and reasonably available to the Company.

B. Financial Interest in a Significant Action Conflict

1. No member of the Board, Oversight Panel or Disciplinary Panel shall participate in the body's deliberations or voting on any significant action if such member knowingly has a direct and substantial financial interest in the result of the vote based upon either Company or non-Company positions that could reasonably be expected to be affected by the action.

2. Prior to consideration of any significant action, each member of the deliberating body who does not choose to abstain from deliberations and voting shall disclose to the Chief Compliance Officer any information that may be relevant to a determination of whether such member has a direct and substantial financial interest in the result of the vote.

3. The Chief Compliance Officer shall determine whether any member of the relevant deliberating body who does not choose to abstain from deliberations and voting is subject to a conflicts restriction under this Rule 2.13B. Such determination shall be based upon a review of the following information:

a. the most recent large trader reports and clearing records available to the Company;

b. gross positions held at the Company in the member's personal accounts or "controlled accounts," as defined in CFTC Regulation 1.3(j);

c. gross positions held at the Company in proprietary accounts, as defined in CFTC Regulation 1.17(b)(3), at the member's affiliated firm;

d. gross positions held at the Company in accounts in which the member is a principal, as defined in CFTC Regulation 3.1(a);

e. net positions held at the Company in "customer" accounts, as defined in CFTC Regulation 1.17(b)(2), at the member's affiliated firm;

f. any other types of positions, whether maintained at the Company or elsewhere, held in the member's personal accounts or the proprietary accounts of the member's affiliated firm that the Chief Compliance Officer reasonably expects could be affected by the significant action;

g. information provided by such member pursuant to clause (2) above; and

h. any other information reasonably available to the Company, taking into consideration the exigency of the significant action being contemplated.

4. Any member who would otherwise be required to abstain from deliberations and voting pursuant to clause (1) above may participate in deliberations, but not in voting, if the deliberating body, after considering the factors specified below, determines that such participation would be consistent with the public interest; provided, however, that before reaching any such determination, the deliberating body will fully consider the information specified in clause (3) above which is the basis for such member's direct and substantial financial interest in the significant action that is being contemplated. In making its determination, the deliberating body shall consider:

a. whether such member's participation in the deliberations is necessary to achieve a quorum; and

b. whether such member has unique or special expertise, knowledge or experience in the matter being considered.

C. The minutes of any meeting to which the conflicts determination procedures set forth in this Rule apply shall reflect the following information:

1. the names of all members who participated in such meeting;

2. the name of any member who voluntarily recused himself or herself or was required to abstain from deliberations or voting on a matter and the reason for the recusal or abstention, if stated;

3. the information that was reviewed for each member of the relevant deliberating body; and

4. any determination made in accordance with Rule 2.13A.3 or Rule 2.13B.4 above.

Rule 2.14 Recordkeeping

A. The Company shall keep, or cause to be kept, complete and accurate books and records of accounts and activities of the Company, including all books, records and other documentation required to be maintained pursuant to the CEA and CFTC Regulations.

B. The Company shall retain all such books and records in accordance with the CEA and CFTC Regulations.

C. The Company will provide information required to be maintained or provided pursuant to the CEA and CFTC Regulations to the Commission, the U.S. Securities and Exchange Commission, the U.S. Department of Justice or any representative of a prudential regulator as authorized by the Commission, upon request, in each case in the form and manner required under these Rules, and/or the CEA and CFTC Regulations.

Rule 2.15 Information-Sharing Agreements

A. The Company may enter into information-sharing agreements or other arrangements or procedures to coordinate surveillance with other markets on which financial instruments related to the Company Contracts trade. As part of any information-sharing agreements or other arrangements or procedures adopted pursuant to this Rule, the Company may:

1. provide market surveillance reports to other markets;

2. share information and documents concerning current and former Participants or Authorized Users with other markets;

3. share information and documents concerning ongoing and completed investigations with other markets; or

4. require its current or former Participants or Authorized Users to provide information and documents to the Company at the request of other markets

with which the Company has an information-sharing agreement or other arrangements or procedures.

B. The Company may enter into any information-sharing agreements or other arrangements or procedures, including an information-sharing agreement or other arrangement or procedure similar to that described above in paragraph (A), with any Person or body (including but not limited to a Regulatory Agency or Swap Data Repository) if the Company considers such agreement, arrangement or procedures to be in furtherance of the Company's purpose or duties under these Rules or Applicable Law.

C. The Company may provide information to a duly authorized foreign governmental authority, as directed by the CFTC, in accordance with an information-sharing agreement or other arrangements or procedures executed with such foreign governmental authority or the CFTC.

Rule 2.16 Recordkeeping and Reporting Requirements

A. In the event the Board rejects a recommendation or supersedes an action of the Regulatory Oversight Committee, the Risk Management Committee or the Chief Compliance Officer, the Company shall maintain documentation detailing: (1) the recommendation or action of the Regulatory Oversight Committee, the Risk Management Committee or the Chief Compliance Officer, as the case may be; (2) the rationale for such recommendation or action; (3) the rationale of the Board for rejecting such recommendation or superseding such action; and (4) the course of action that the Board decided to take contrary to such recommendation or action.

B. In the event that the Risk Management Committee rejects a recommendation or supersedes an action of any of its subcommittees, the Company shall maintain documentation detailing (1) the recommendation or action of the subcommittee; (2) the rationale for such recommendation or action; (3) the rationale of the Risk Management Committee for rejecting such recommendation or superseding such action; and (4) the course of action that the Risk Management Committee decided to take contrary to such recommendation or action.

C. In accordance with Rule 6.7, the Company shall report all Transactions of Swaps subject to reporting by the Company pursuant to applicable CFTC Regulations to a Swap Data Repository selected by the Company for such purpose within the time limits set forth in CFTC Regulations. Parties to a Transaction where reporting is required shall be responsible for any of their own reporting obligations. Participants shall include with any Order sufficient information to enable the Company to report all Required Swap Creation Data pursuant to Part 45 of CFTC Regulations, including but not limited to the information prescribed under Rule 5.2B.10 (to the extent such information is not pre-populated by the Platform). Participants may provide certain data to the Company in the Participant Application and Agreement, such as whether the Participant is a U.S. person, swap dealer, major swap participant, or financial entity as defined in the Participant Application and Agreement. Participants must inform the Company immediately of any change in status that would affect data to be reported to a Swap Data Repository in accordance with Rule 6.7.

D. The Company shall record and report to the CFTC all data required to be reported to the CFTC under Part 16 of CFTC Regulations, in the form and manner required by CFTC Regulations.

E. The Company shall keep and maintain books and records identifying each Order submitted to the Company and each Transaction effected pursuant to these Rules, including the identification of the execution method (*e.g.,* central limit order book, Block Trade, EFP) with respect to each such Order and Transaction. These books and records shall be kept and maintained in accordance with the CEA and CFTC Regulations.

F. The Company shall submit to the CFTC within thirty days after each Board election a list of the Board's Directors, the Participant interests they represent, and how the composition of the Board meets the requirements of CFTC Regulation 1.64(b) and the Company's Rules and procedures.

Rule 2.17 Public Information

A. Accurate, complete and current copies of these Rules and Company Contract Specifications shall be published on the Website.

B. The Company shall make public on a daily basis information on settlement prices, volume, open interest, and opening and closing ranges for actively traded Company Contracts.

C. Except as provided herein, the Company shall publish on its Website a Participant Notice with respect to each addition to, modification of, or clarification of, the

Rules, the Matching Engine, and any Company Contract Specification prior to the earlier of:

1. the effective date thereof; and
2. the filing of such change with the Commission.

D. If confidential treatment is sought with respect to any information the Company submits to a Regulatory Agency, only the public version of such filing shall be disclosed pursuant to Rule 2.17C.

E. Any Participant Notice shall be deemed to have been made to all Participants and any other such Person as may be required by sending such Participant Notice to the email address on file with the Company and by posting the Participant Notice on the Website.

F. Any information published in accordance with this Rule 2.17 shall specify whether it applies to the Company DCM, and/or the Company DCO, and/or the Company SEF.

Chapter 3 **Participants**

Rule 3.1 Jurisdiction, Applicability of Rules

A. **Any person, including a participant or an authorized user, directly or indirectly initiating, executing, and/or clearing a transaction on the company or subject to these rules, and any person for whose benefit such a transaction has been initiated or executed, or cleared, including customers, and an authorized representative and, for the avoidance of doubt, an FCM participant, executing participant and a liquidity provider, and any employee or agent of a participant, and any other person accessing the platform: (i) agrees to be bound by and comply with these rules, the obligations and applicable law, in each case to the extent applicable to such person; (ii) expressly consents and submits to the jurisdiction of the company with respect to any and all matters arising from, related to, or in connection with, the status, actions or omissions of such person; and (iii) agrees to assist the company in complying with the company's legal and regulatory obligations, cooperate with the company, the CFTC and any regulatory agency with jurisdiction over the company in any inquiry, investigation, audit, examination or proceeding. Any amendments to or the repeal of a rule, or the adoption of a new rule, shall, upon the effective date of such amendment, repeal or adoption, as applicable, be binding on all persons subject to the jurisdiction of the company, regardless of when such person became subject to the company's jurisdiction, and on all company contracts as applicable.**

B. **All company participants are also subject to the jurisdiction of the CFTC regardless of location, nationality, citizenship, or place of incorporation.**

Rule 3.2 Participants—Applications, Agreements, Eligibility Criteria, Classifications and Privileges

LedgerX LLC will provide access to the Platform (including but not limited to the central limit order book) and related services in an impartial, transparent, fair and non-discriminatory manner.

A. Each Participant shall have the right to access electronically the Platform, including the right to place Orders for each of its Proprietary Accounts, provided that such Participant is eligible for and has applied and received Trading Privileges and Clearing Privileges. In order to become a Participant, an applicant must:

1. complete and submit the Company Participant Application and Agreement, User Agreement, and application fee, as may be established by the Company from time to time;
2. not be subject to any economic or trade sanctions programs administered by OFAC or other relevant U.S. or non-U.S. authority, and must not be listed on OFAC's List of Specially-Designated Nationals and Blocked Persons, or if applicant is an entity, not include any such person among its beneficial owners;
3. (for U.S. applicants:) if an applicant is an entity, be validly organized, and in good standing, in the United States;
4. (for Singapore applicants:) if an applicant is an entity, be validly organized, and in good standing, in Singapore; and must not be listed as a designated individual or entity as to terrorism or targeted financial sanctions by the Money Authority of Singapore;

5. (for Singapore applicants:) if an applicant is a natural person, be a citizen of Singapore; and must not be listed as a designated individual or entity as to terrorism or targeted financial sanctions by the Money Authority of Singapore;

6. (for non-U.S. applicants:) if an applicant is an entity, be validly organized and in good standing in its jurisdiction of organization, and

7. as applicable, be an Eligible Contract Participant in order to gain impartial access to the Company SEF and any SEF services, to clear trades executed on a SEF through the Company DCO, or to enter into Block Trades on the Company DCM, or to clear Block Trades executed on a DCM through the Company DCO;

8. not be prohibited from using the services of the Company for any reason whatsoever;

9. have a good reputation and business integrity and maintain adequate financial resources and credit;

10. not have filed for bankruptcy and not be insolvent;

11. designate at least one Authorized User (or in the case of a natural person Participant, such Person shall be deemed to be the Authorized User);

12. if an applicant is an entity, designate at least two Authorized Representatives (or in the case of a natural person Participant, such Person shall be deemed to be the sole Authorized Representative) who are responsible for supervising all activities of the Participant, its Authorized User(s) and its employees relating to Transactions, for making withdrawal requests and for providing any information the Company may request regarding such Participant; *provided,* that upon request the Company may permit an entity applicant to designate a single Authorized Representative in the Chief Compliance Officer's sole discretion; and

13. meet any other criteria and provide the Company with any other information the Company may request regarding the Participant.

B. Each FCM Participant shall have the right to access electronically the Platform, including the right to place Orders for each of its Proprietary Accounts or Customer Accounts, provided that such FCM Participant is eligible for and has applied and received Trading Privileges and Clearing Privileges. The Company does not currently have any FCM Participants or other Participants that may execute intermediated trades. In order to become an FCM Participant, an FCM applicant must:

1. satisfy the conditions in Rule 3.2A;

2. be validly organized and in good standing, in the United States;

3. have sufficient operational capabilities and resources to support the Platform and Underlying transfer requirements, including sufficient: (a) policies and procedures, (b) understanding of and support for the Company Contracts and transfers of the Underlying, (c) asset security and cyber security procedures and (d) AML controls;

4. have sufficient ability, appropriate accounts and technical support to clear the Underlying, including maintenance of the requisite Collateral Accounts at all times;

5. submit to the Company a letter confirming that the applicant will maintain all Customer Funds deposited with it in connection with trading any Company Contract in appropriately labeled and segregated Customer Accounts, as required by Commission regulations;

6. if the FCM applicant seeks to facilitate trading on the Company SEF or another SEF that clears through the Company DCO, agree to confirm that each Customer trading through such SEF represents that it is an ECP;

7. if the FCM applicant seeks to facilitate Block Trades for one or more Customers, agree to confirm that each Customer executing a Block Trade represents that it is an ECP; and

8. meet any other criteria or complete any additional applications that the Company may request.

C. Prior to becoming an FCM Participant, FCM applicants must submit to the Company: (i) a guarantee agreement on a form prescribed by the Company defining the FCM Participant's obligation to financially guarantee the applicant's Orders and Transactions and those of the applicant's Customers, signed by the FCM Participant; and (ii) an agreement authorizing the Company to unilaterally debit any Collateral Accounts in accordance with these Rules, Company policies and procedures and in amounts solely determined by the Company.

D. The Company may in its sole discretion approve, deny, or condition any FCM Participant application as the Company deems necessary or appropriate.

E. If an FCM Participant application is approved by the Company, the applicant will be a FCM Participant of the Company with Trading Privileges and Clearing Privileges with respect to its Customers and its Proprietary Account, as applicable.

F. To be eligible to become an Executing Participant, an applicant must:

1. satisfy the conditions in Rule 3.2A;

2. complete the Executing Participant representation of the Participant Application and Agreement;

3. with respect to trading on the Company SEF, or trading through another SEF that clears through the Company DCM, agree to confirm that each Customer trading through such SEF represents that it is an ECP;

4. if the Executing Participant seeks to facilitate Block Trades for one or more Customers, agree to confirm that each Customer executing a Block Trade represents that it is an ECP; and

5. be registered as a futures commission merchant, introducing broker or commodity trading advisor, or be exempt from registration as such.

G. Submission of a Participant Application and Agreement to the Company constitutes the applicant's agreement to be bound by the Rules and the published policies of the Company.

H. No person affiliated, within the meaning of Section 5b(c)(2)(O) of the CEA, with a director of the Company or a Participant (for purposes of this Rule, an "affiliate") shall meet criteria for refusal to register a person under Section 8a(2) of the CEA; unless the Risk Management Committee finds that there are special circumstances warranting the waiver of such disqualification with respect to the affiliate.

1. With respect to affiliates, the Board shall be entitled to rely on a representation from the relevant director or Participant that, to the best of such person's knowledge, none of its affiliates is subject to disqualification pursuant to the Company's fitness standards and that such person will notify the Company if at any time such director or Participant becomes aware that any such affiliate fails to meet the fitness standards.

2. Section 5b(c)(2)(O)(ii)(IV) of the CEA requires each DCO to establish Fitness Standards for persons with direct access to the settlement or clearing activities of the DCO ("Access Persons"). The only persons with such access are Participants.

I. Applicants for Participant status of the Company may withdraw their applications at any time without prejudice or without losing their right to apply at a future time.

J. Company staff may, in its sole discretion, approve, deny, or condition any Participant application as Company staff deems necessary or appropriate.

1. In the event that Company staff decides to decline or condition an application for admission as a Participant, or to terminate a Person's status as Participant, Company staff shall notify such Person thereof in a written notice sent to the address provided by the Person in the Participant Application and Agreement or maintained in the Company's registry of Participants. The written notice will specify the basis for the Company's decision. Such Person may, within 28 Business Days, request in writing that the Participant Committee reconsider the determination.

2. Within 28 Business Days of receiving a request for reconsideration, the Participant Committee shall confirm, reverse or modify the denial, condition or terminate the Participant status of such Person, and shall promptly notify such Person accordingly in writing. The Participant Committee may, in its sole discretion, schedule a hearing (in person or by teleconference), request additional information from such Person or establish any other process that it believes is necessary or appropriate to consider the request for reconsideration.

3. The Participant Committee's decision is the final action of the Company and is not subject to appeal within the Company.

K. Upon approval by the Company of an applicant's Participant Application and Agreement, the applicant will be deemed to be a Participant, and shall continue to comply with all applicable eligibility criteria in this Rule or as the Company may require, and shall have the following privileges, which the Company may revoke, amend, or expand in accordance with, or by amending, these Rules:

1. Trading Privileges and Clearing Privileges;
2. To intermediate the execution of Customer Transactions on the Company, if approved as an Executing Participant;
3. To intermediate Orders and clear Transactions on behalf of Customers, if approved as an FCM Participant; and
4. To distribute Company data to its Customers pursuant to any data distribution agreement with the Company.

L. The Company will apply Participant access criteria in a fair and non-discriminatory manner that is not anti-competitive.

Rule 3.3 Participant Obligations

A. Each Participant and any Authorized User(s) thereof, must comply with these Rules, applicable provisions of the CEA and relevant CFTC Regulations. Each Participant and any Authorized User(s) thereof also must cooperate promptly and fully with the Company, its agents, and the CFTC in any investigation, call for information, inquiry, audit, examination, or proceeding. Such cooperation shall include providing the Company with access to information on the activities of such Participant and/or its Authorized User(s) in any referenced market that provides the underlying prices for any Company market. If any Participant or Authorized User thereof fails to satisfy any Obligation, the Company may revoke or suspend the Participant's privileges in full or in part. Each Participant also may be subject to civil or criminal prosecution.

B. Each Participant consents to allow the Company to provide all information the Company has about the Participant, including the Participant's and Customers' trading activity, to the CFTC or any other Regulatory Agency, law enforcement authority, or judicial tribunal, including (as may be required by information-sharing agreements or other arrangements or procedures or other contractual, regulatory, or legal provisions) foreign regulatory or self-regulatory bodies, law enforcement authorities, or judicial tribunals without notice to the Participant.

C. Each Participant consents to the Company providing information related to Know Your Customer or Anti-Money Laundering to Settlement Banks or potential Settlement Banks.

D. Each Participant must establish and maintain cyber security policies and procedures to protect each such Participant's systems, including, but not limited to, any API.

E. Each Participant must represent to the Company that each such Participant has established and maintains an account to hold Underlying and will adhere to the Company's collateral transfer procedures. Each Participant agrees to provide and accept collateral when required to do so by the Company.

F. Each Participant and Customer, upon a request of the Company or any Regulatory Agency, must promptly respond to any requests for information, including by providing any necessary information for the Company to perform any of the functions described in the CEA.

G. Participant Recordkeeping:

1. Swaps. With respect to each Company Contract that is a Swap, each Participant and Customer must prepare, maintain, keep current and retain those books and records for the life of each Swap, including records of the instrument used as a reference price, underlying commodities and related derivatives market for 5 years following the termination of such Swap, and any other books and records required by these Rules, the CEA and the CFTC's Regulations for the time period required by these Rules, the CEA and the CFTC's Regulations.
2. Futures Contracts. With respect to each Company Contract that is a futures contract (including any option on a futures contract), each Participant and Customer must prepare, maintain, keep current and retain those books and records of the trading activity, including records of the instrument used as a reference price, underlying commodities and related derivatives market for 5 years following execution of the Company Contract, and any other books and records required by these Rules, the CEA and the CFTC's Regulations for the time period required by these Rules, the CEA and the CFTC's Regulations.
3. The books and records required to be kept under subparagraphs 1 and 2 above shall be readily accessible for inspection and promptly provided to the Company, its designated Self-Regulatory Organization, the CFTC, the U.S. Securities and Exchange Commission or the U.S. Department of Justice, upon request, in each case in the form and manner required under these Rules, and/or the CEA and CFTC Regulations.

H. Each Participant must immediately notify the Company in writing upon becoming aware:

1. that the Participant, any of the Participant's officers or any of the Participant's Authorized Users has had trading or clearing privileges suspended, access to, or membership or clearing membership in any Regulatory Agency denied;

2. that the Participant, any of the Participant's officers or any of the Participant's Authorized Users has been convicted of, pled guilty or no contest to, or entered a plea agreement to any felony in any domestic, foreign or military court, or with the CFTC, as applicable;

3. that the Participant, any of the Participant's officers or any of the Participant's Authorized Users has been convicted of, plead guilty or no contest to, or entered a plea agreement to a misdemeanor in any domestic, foreign or military court, or with the CFTC, as applicable, which involves:

a. embezzlement, theft, extortion, fraud, fraudulent conversion, forgery, counterfeiting, false pretenses, bribery, gambling, racketeering, or misappropriation of funds, securities or properties; or

b. any Transaction in or advice concerning swaps, futures, options on futures or securities;

4. that the Participant, any of the Participant's officers or any of the Participant's Authorized Users has been subject to, or associated with a firm that was subject to, regulatory proceedings before any Regulatory Agency;

5. of any other material change in any information contained in the Participant's application, including any failure to continue to meet the requirements to be an Eligible Contract Participant with respect to trading activity on the Company SEF or any SEF that clears through the Company DCO, Block Trades or any change in status as a swap dealer, major swap participant or financial entity;

6. of becoming the subject of a bankruptcy petition, receivership proceeding, or the equivalent, or being unable to meet any financial obligation as it becomes due;

7. of information that concerns any financial or business developments that may materially affect the Participant's ability to continue to comply with applicable participation requirements;

8. as applicable to FCM Participants and Executing Participants, of becoming subject to early warning reporting under CFTC Regulation 1.12; or

9. as applicable to FCM Participants, of any failure to segregate or maintain adequate Customer Funds as required by the CFTC and CFTC Regulations.

I. Each Participant must diligently supervise all activities of the Participant's employees and/or agents, including all Authorized Users and Authorized Representatives, relating to Orders, Transactions and communications with the Company. Any violation of these Rules by any employee, Authorized Representative or Authorized User of a Participant may constitute a violation of the Rules by such Participant.

J. Each Participant must inform the Company of: (i) its LEI, if applicable, (ii) any change to its email address within 24 hours after such change; (iii) any changes to the regulatory registration information of the Participant's Authorized Users within two Settlement Bank Business Days of such change; and (iv) other information provided in the Participant Application and Agreement within 5 days after any such change.

K. Each FCM Participant also must:

1. Comply with the financial and reporting requirements set forth by the Commission and the NFA, including the requirements contained in Commission Regulations 1.10 and 1.17.

2. Require Customers to maintain and provide to the FCM Participant or the Company upon request by the FCM Participant or the Company information identifying any individual who has entered orders on behalf of such Customer's Account, including, but not limited to, the individual's name, taxpayer or other identification number, affiliation to the Customer, address and contact information.

3. At all times maintain the financial resources at or in excess of the amount prescribed by the Company from time to time.

4. Maintain a Customer Account that holds Customer Funds with the Company and may maintain a Proprietary Account that holds the FCM Participant's proprietary funds with the Company.

5. Maintain a separately identifiable Customer ID for each Customer and provide such Customer ID with every Order submitted on the Platform on behalf of a Customer.

6. Include in the FCM Participant's Customer Account separate Customer IDs for each Customer based on the Customer ID that the FCM Participant transmits with each Order.

7. Make an initial deposit of funds in an amount determined by the FCM Participant, subject to the Company requiring a greater amount, constituting the FCM Participant's residual interest therein, into a Customer Account for excess collateral with the Company.

8. Submit statements of financial condition at such times and in such manner as shall be prescribed from time to time.

9. Use due diligence in receiving and handling Orders from Customers, submitting such Orders on the Platform on behalf of such Customers, responding to inquiries from Customers about their Orders and reporting back to Customers the execution of such Orders.

10. Maintain policies and procedures acceptable to the Company that:

a. with respect to each Customer who is an individual, restricts access to any system through which such individual Customer submits Orders to the FCM Participant for transmission to the Company to that individual Customer; and

b. with respect to each Customer who is not an individual: (1) restricts access to any system through which the Customer's Orders may be submitted to the FCM Participant for transmission to the Company to such individuals authorized to enter Orders on behalf of such Customer; (2) requires each Customer who is not an individual, with respect to Swaps, to have and maintain an LEI, which shall be provided to the Company with each order message submitted by such Person; (3) identifies each individual authorized to enter Orders on behalf of such Customer by a distinct Customer ID, which shall be provided to the FCM Participant and the Company with each order message submitted by such Person; and (4) requires the customer to maintain and provide to the FCM Participant or the Company upon request by the FCM Participant or the Company information identifying any individual who has entered Orders on behalf of such Customer's account, including but not limited to the individual's name, taxpayer or other identification number, affiliation to the Customer, address and contact information.

11. Prior to an FCM Participant accepting any Orders from a Customer for submission to the Company:

a. an FCM Participant must first have provided such Customer with the Company Risk Disclosure Statement;

b. the Company will require certification by the FCM Participant to the Company that its system has the capacity to block Customer Funds such that the relevant Customer Account maintains sufficient funds to cover the Customer's maximum loss under the Company Contract before the FCM Participant enters the Order and that the FCM Participant demonstrate that capacity to the Company. In addition, on an annual basis or as otherwise required by the Company, each FCM Participant must represent to the Company that the portion of the FCM Participant's system that blocks Customer Funds has not been changed in any material respect or, if the system has been changed, the FCM Participant must identify any such changes and recertify the system's capacity to block Customer Funds. Finally, each FCM Participant agrees to submit to any compliance review by the Company of its systems in this regard.

12. With respect to the Associated Persons or employees of a FCM Participant:

a. Each FCM Participant shall be responsible for diligently supervising the FCM Participant's Associated Persons' or employees' compliance with all Company Rules.

b. Each FCM Participant must maintain a complete and accurate list of all Associated Persons or employees of the FCM Participant. Such list shall be promptly provided to the Company upon request.

c. Associated Persons or employees must comply with Company Rules.

d. Each Associated Person or employee shall be bound by Company Rules to the same extent as if such person were a Participant.

e. Each FCM Participant shall be responsible for the acts or omissions of the FCM Participant's Associated Persons or employees, and may be liable for any fines imposed upon such Associated Persons or employees by the

Company. Any violation of a Company rule by any such Associated Persons or employee may be considered a violation by the FCM Participant.

13. Make and file reports in accordance with CFTC Regulations in a manner and form and at such times as may be prescribed by the Commission.

14. Make and file reports with the Company at such times, in such manner and form, and containing such information as the Company may prescribe from time to time.

15. Invest Customer Funds only in accordance with CFTC Regulations 22.2(e)(1) and 1.25, to the extent an FCM Participant invests Customer Funds.

16. Prepare, maintain and keep current those books and records required by the rules of the Company, the CEA and CFTC Regulations. Such books and records shall be open to inspection and promptly provided to the Company, its Designated Self-Regulatory Organization ("DSRO"), the Commission and/or the U.S. Department of Justice and/or the U.S. Securities and Exchange Commission, upon request.

L. An Executing Participant must also:

1. Adhere to CFTC Regulations concerning applicable financial resources and financial reporting requirements, including, but not limited to, the requirements under CFTC Regulations 1.10 and 1.17, as applicable.

2. Provide a Customer ID for every Order submitted to the Company.

3. Use due diligence in receiving and handling Orders from Customers, submitting such Orders on the Platform on behalf of such Customers, responding to inquiries from Customers about their Orders and reporting back to Customers the execution of such Orders.

4. Maintain policies and procedures acceptable to the Company that:

a. identify each Authorized User whom the Executing Participant has authorized to transmit Customer Orders by a unique User ID as provided pursuant to Rule 5.1, which User ID shall be submitted to the Company with each Order submitted by such Authorized User;

b. permit access only to Authorized Users with permission to enter Customer Orders on behalf of the Executing Participant;

c. require each Customer who is not an individual, with respect to Swaps, to have and maintain a Legal Entity Identifier deemed acceptable under CFTC Regulations, which shall be provided to the Company with each order message submitted by such Person, as applicable; and

d. require the Customer to maintain and provide, upon request, to the Executing Participant or the Company information identifying any individual who has entered Orders on behalf of such Customer's account, including, but not limited to, the individual's name, taxpayer or other identification number, affiliation to the Customer, address and contact information.

Rule 3.4 Customer Account Requirements for FCM Participants

A. FCM Participants must comply with the requirements set forth in Parts 1 and 22 of CFTC Regulations. This includes, but is not limited to, the following:

1. Maintaining sufficient funds at all times in Customer Accounts.

2. Computing, recording and reporting completely and accurately the balances in the Statement of Segregation Requirements and Funds in Segregation and the Statement of Segregation Requirements and Cleared Swaps Customer Collateral Held in Cleared Swaps Customer Accounts.

3. Obtaining satisfactory Customer Segregated Account and/or Cleared Swaps Customer Account acknowledgment letters and identifying Customer Segregated Account and/or Cleared Swaps Customer Account as such.

4. Preparing complete and materially accurate daily Customer Segregated Account and Cleared Swaps Customer Account computations, as applicable, in a timely manner.

B. All FCM Participants must submit a daily Customer Segregated Account statement and a Cleared Swaps Customer Account statement, as applicable, through Company-approved electronic transmissions by 12:00 noon on the following Settlement Bank Business Day.

C. FCM Participants must provide the Company's Compliance Department with access to Customer Account information in a form and manner prescribed by the Compliance Department.

D. All FCM Participants must provide written notice to the Compliance Department of a failure to maintain sufficient funds in Customer Accounts. The Compli-

ance Department must receive immediate written notification when an FCM Participant knows or should have known of such failure.

E. Company staff may prescribe additional Customer Account requirements.

Rule 3.5 Customer Funds Maintained With the Company

All Customer Funds deposited with the Company on behalf of Customers shall be held in accordance with Parts 1 and 22 of the CFTC Regulations in an account identified as a Customer Segregated Account or a Cleared Swaps Customer Account, as applicable. Such Customer Funds shall be segregated by the Company and treated as belonging to such Customers of the FCM Participant. Pursuant to this rule, an FCM Participant shall satisfy the acknowledgment letter requirement of Rule 3.4A.3 for Customer Funds held at the Company.

Rule 3.6 Dues, Fees and Expenses Payable by Participants

A. Participants are not required to pay dues.

B. Participants may be charged fees in connection with Trading Privileges and Clearing Privileges in such amounts as may be revised from time to time. Fees and any revisions to such fees will be provided on the Website and in Participant Notices.

C. Participants may be charged fees for settlement of Company Contracts at expiration in an amount to be reflected from time to time on the Website and in Participant Notices.

D. The Company or a Settlement Bank may also deduct from a Collateral Account fees or expenses incurred in connection with a Participant's trading or account activity, such as fees for wire transfers or check processing via electronic check, or storage or other fees or expenses related to Trading Privileges or Clearing Privileges. All such fees shall be charged in an amount to be reflected from time to time on the Website and in Participant Notices.

E. If the Company determines in the future to impose dues or additional fees, the Company shall notify the Participant of any dues or additional fees that will be imposed at least 10 days before they take effect.

Rule 3.7 Recording of Communications

The Company may record conversations and retain copies of electronic communications between Company Officials, on one hand, and Participants, their Authorized Users, Authorized Representatives or other agents, on the other hand. Any such recordings may be retained by the Company in such manner and for such periods of time as the Company may deem necessary or appropriate. The Company shall retain such records for the retention periods necessary to comply with CFTC Regulation 1.35 or such longer period as the Company deems appropriate.

Rule 3.8 Independent Software Vendors

A. A person seeking to act as an Independent Software Vendor must satisfy the Company's technological integrity requirements, complete the necessary ISV application and access documentation, agree to abide by these Rules and Applicable Law, consent to the jurisdiction of the Company, and agree to not adversely affect the Company's ability to comply with Applicable Law. Access to the Company by an ISV shall be provided pursuant to criteria that are impartial, transparent and applied in a fair and non-discriminatory manner. Persons seeking access to the Company through an ISV must themselves be Participants to have such access. ISVs shall be subject to fees as reflected from time to time on the Website and in Participant Notices.

B. Each ISV must immediately notify the Company in writing upon becoming aware:

1. that the ISV or any of the ISV's officers has been convicted of, pled guilty or no contest to, or entered a plea agreement to any felony in any domestic, foreign or military court, or with the CFTC, as applicable;

2. that the ISV or any of the ISV's officers has been convicted of, plead guilty or no contest to, or entered a plea agreement to a misdemeanor in any domestic, foreign or military court, or with the CFTC, as applicable, which involves:

a. embezzlement, theft, extortion, fraud, fraudulent conversion, forgery, counterfeiting, false pretenses, bribery, gambling, racketeering, or misappropriation of funds, securities or properties; or

b. any Transaction in or advice concerning swaps, futures, options on futures or securities;

3. that the ISV or any of the ISV's officers has been subject to, or associated with a firm that was subject to, regulatory proceedings before any Regulatory Agency;

4. of any other material change in any information contained in the ISV's application;

5. of becoming the subject of a bankruptcy petition, receivership proceeding, or the equivalent, or being unable to meet any financial obligation as it becomes due; and

6. of information that concerns any financial or business developments that may materially affect the ISV's ability to continue to comply with applicable Company requirements.

C. Each ISV must inform the Company of: (i) any change to its email address within 24 hours after such change; and (ii) other information provided in its application for ISV status within 5 days after any such change.

Rule 3.9 Participant Accounts and Customer Accounts

A. The Company shall establish and maintain a Participant Account for each Participant and the Company undertakes to treat the Participant for whom such Participant Account is maintained as entitled to exercise the rights that comprise each financial asset which is credited to such Participant Account. However, the Company shall have complete and absolute discretion as to whether any particular financial asset is accepted by it for credit to any Participant Account.

B. The Company shall establish and maintain a Customer Account for each FCM Participant's Customers and the Company undertakes to treat the FCM Participant for whom such Customer Account is maintained as entitled to exercise the rights that comprise each financial asset which is credited to such Customer Account. However, the Company shall have complete and absolute discretion as to whether any particular financial asset is accepted by it for credit to any Customer Account.

C. With respect to any Digital Currency, including, but not limited to, Bitcoin, which is or may be credited to any Participant Account, the following terms and conditions shall apply:

1. For purposes of creating a "security entitlement" as such term is defined in Section 8–102(a)(17) of the UCC, the Company and the Participant agree that: (1) the Digital Currency and any Digital Currency wallet maintained by the Company shall be treated as a "financial asset" as such term is defined in Section 8–102(a)(9) of the UCC; and (2) each Participant shall be treated as an "entitlement holder" as such term is defined in Section 8–102(a)(7) of the UCC.

2. Each Participant acknowledges that the Company is a "securities intermediary" as such term is defined in Section 8–102(a)(14) of the UCC.

3. Any Digital Currency which a Participant desires be credited to such Participant's Participant Account shall be transferred to a Digital Currency wallet designated by the Company and upon such transfer the Company shall indicate by book entry that such Digital Currency has been credited to such Participant Account.

D. With respect to any Digital Currency, including, but not limited to, Bitcoin, which is or may be credited to any Customer Account, the following terms and conditions shall apply:

1. For purposes of creating a "security entitlement" as such term is defined in Section 8–102(a)(17) of the UCC, the Company and the Customer and the relevant FCM Participant all agree that: (1) the Digital Currency shall be treated as a "financial asset" as such term is defined in Section 8–102(a)(9) of the UCC; and (2) each FCM Participant shall be treated as an "entitlement holder" as such term is defined in Section 8–102(a)(7) of the UCC.

2. Each Customer and each FCM Participant acknowledges that the Company is a "securities intermediary" as such term is defined in Section 8–102(a)(14) of the UCC.

3. Any Digital Currency which an FCM Participant desires be credited to any of such FCM Participant's Customer Accounts shall be transferred to a Digital Currency wallet designated by the Company and upon such transfer the Company shall indicate by book entry that such Digital Currency has been credited to any of such Customer Accounts.

E. The Company shall have only such duties and obligations with respect to each Participant Account and Customer Account as are set forth in Article 8 of the UCC or otherwise mandated by Applicable Law. Each Participant, including each FCM Participant, and each Customer acknowledges and agrees that the Company is not a fiduciary for any Participant, including any FCM Participant, or Customer.

Rule 3.10 Withdrawal of Participant

A. To withdraw from the Company, a Participant must notify the Company of its withdrawal. Such withdrawal shall be accepted immediately upon receipt of such notice by the Company and shall be effective upon such Participant's fulfillment of its obligations under paragraph (C) below, or at such other time as the Company may determine in its reasonable discretion is desirable for the efficient operation of the Company.

B. When the Company accepts the withdrawal of a Participant, all rights and privileges of such Participant terminate (including, without limitation, the Trading Privileges and Clearing Privileges) except as set forth in paragraph (C) below. The accepted withdrawal of a Participant shall not affect the rights of the Company under these Rules or relieve the former Participant of such Participant's obligations under the Company Rules before such withdrawal. Notwithstanding the accepted withdrawal of a Participant, the withdrawn Participant remains subject to the LedgerX Rules, the Obligations and the jurisdiction of the Company for acts done and omissions made while a Participant, must comply with paragraphs (C) and (D) below, must cooperate in any Disciplinary Action under Chapter 9 as if the withdrawn Participant were still a Participant, and must comply with requests for information from the Company regarding activities and obligations while a Participant for at least 5 years following its withdrawal.

C. A Participant that has delivered a withdrawal notice pursuant to paragraph (A) above shall be subject to the following requirements, obligations and provisions:

1. it must use all reasonable endeavors to close out or transfer all open positions in its Participant Account and each of its Customer Accounts, as applicable, within 30 days after the Participant has delivered a withdrawal notice pursuant to paragraph (A) (the "wind-down period");

2. after delivering a withdrawal notice pursuant to paragraph (A), it shall only be entitled to submit transactions for clearing which it can demonstrate have the overall effect of reducing open positions;

3. if it has any open positions with the Company (whether in the Participant Account or any Customer Account) after the wind-down period, the Participant shall be subject to the Company exercising rights under Rule 7.2G to liquidate or transfer the open positions of the Participant.

D. Any withdrawal notice delivered by a Participant pursuant to paragraph (A) above shall be irrevocable by the Participant and membership may only be reinstated pursuant to a new application for membership following the close-out or transfer of all open Company Contracts in its Participant Account and each of its Customer Accounts, as applicable.

Chapter 4 Liquidity Providers

Rule 4.1 Application and Agreement

A. Only Participants in good standing may become Liquidity Providers on the Company.

B. To be considered for Liquidity Provider status, a Participant shall complete and execute a Liquidity Provider Agreement.

C. The designation of any Liquidity Provider may be suspended, terminated or restricted by the Company at any time and for any reason.

Rule 4.2 Appointment

A. The Company may appoint one or more Liquidity Providers for certain Company Contracts.

B. In making such appointments, the Company shall consider:

1. the financial resources available to the applicant;

2. the applicant's trading activity in relevant swaps, futures, options on futures or related cash markets; and

3. the applicant's business reputation and experience in market making in options and other derivative products.

C. The Company, in its sole discretion, may appoint a Participant as a Liquidity Provider for certain Series and may appoint multiple Liquidity Providers for certain Series.

D. No appointment of a Liquidity Provider shall be made without the Liquidity Provider's consent to such appointment.

E. The Company shall periodically conduct an evaluation of all Liquidity Providers to determine whether they have fulfilled performance standards relating to, among other things, quality of the markets; trading activity; competitive market making; observance of ethical standards; business reputation; and administrative

and financial soundness. If the Liquidity Provider fails to meet minimum performance standards, the Company may, among other actions, suspend, terminate or restrict the Liquidity Provider's appointment.

Rule 4.3 Benefits

Liquidity Providers may receive reduced trading fees or other incentives in accordance with any Liquidity Provider program in place at the Company for fulfilling the Obligations of a Liquidity Provider as disclosed in the applicable Liquidity Provider Agreement.

Rule 4.4 Obligations

Transactions of Liquidity Providers should constitute a course of dealing reasonably calculated to contribute to the maintenance of a fair and orderly market, and Liquidity Providers shall not enter Orders or enter into Transactions that are inconsistent with such a course of dealing. Ordinarily, Liquidity Providers shall be obligated to do the following:

A. comply with all other terms of the applicable Liquidity Provider Agreement; and

B. make good-faith efforts to enter on the Platform current binding bid and offer quotes, with a bid/offer spread as specified in the applicable Liquidity Provider Agreement, as necessary to ensure liquidity.

Chapter 5 Method for Trading Company Contracts

Rule 5.1 User IDs

A. Each Authorized User must have a unique User ID and a CSP.

B. Each Order entered must contain a User ID that identifies the Participant's Authorized User that entered the Order.

C. Each Order entered by an FCM Participant or Executing Participant on behalf of a Customer must contain: (1) such Customer's User ID or Customer ID; and (2) the User ID of the FCM Participant's or Executing Participant's Authorized User that entered the Order.

D. For Transactions in Swaps, (1) the Reporting Counterparty shall be established pursuant to CFTC Regulation 45.8, as may be amended from time to time; and (2) if each Participant has equal reporting status under CFTC Regulation 45.8, the Company shall designate the seller of a Swap as the Participant that is the Reporting Counterparty.

E. No Person may use a User ID to place any Order except as permitted by these Rules, nor may any Person knowingly permit or assist with the unauthorized use of a User ID. Each Participant and Authorized User shall ensure that no User ID is used by any Person not authorized by these Rules. Each Participant shall establish and maintain policies and procedures to ensure the proper use and protection of User IDs. An Authorized User is prohibited from using another Person's User ID, unless the Authorized User is entering the Order of a Customer in accordance with the Rules.

F. With respect to Customers of Executing Participants, each such Customer must provide the User ID of any of its Authorized Users to an Executing Participant to allow the Executing Participant to enter Orders on behalf of such Customer.

G. Each Participant shall be solely responsible for controlling and monitoring the use of all User IDs and CSPs issued to its Authorized Users.

H. Each Participant shall notify the Company of the need to terminate any User IDs or the status of any of its Authorized Users.

I. Each Participant shall keep confidential and secure all User IDs, except as permitted pursuant to these Rules, as well as all CSPs and any account numbers and passwords related to the Platform and shall notify the Company promptly upon becoming aware of:

1. any unauthorized disclosure or use of any User ID or CSP and of any other compromise to a User ID or CSP that would reasonably cause the Company to deactivate the User ID or CSP;

2. any loss of any User ID or CSP; and

3. any unauthorized access to the Company by any Person using a User ID and/or CSP assigned to such Participant.

J. Each trading system that automates the generation and routing of Orders to the Company must have a User ID.

Rule 5.2 Order Entry and Audit Trail

A. Each Participant and Authorized User shall enter Orders on the Platform, and the Company shall maintain an electronic record of these entries. Each Participant shall be responsible for any and all Orders entered using User IDs assigned to the Participant or its Authorized User by the Company. Trading on the Company central limit order book is anonymous.

B. Each Participant's Authorized User entering Orders on the Platform must input for each Order the following information (to the extent that such information is not provided at account creation or by the Platform):

1. the Authorized User's User ID;

2. for an Authorized User of an FCM Participant or Executing Participant entering an order on behalf of a Customer, the User ID of the Authorized User and the Customer ID, where applicable, for whom such Authorized User enters an Order;

3. the Series;

4. Order type;

5. Customer Type Indicator Code;

6. buy or sell, and for options, put, call and strike;

7. price;

8. quantity;

8. such additional information as may be prescribed from time to time by the Company; and

10. for each Order to buy or sell a Swap, the Authorized User shall include with each such Order the following information (to the extent that such information is not provided at account creation or by the Platform):

a. the Legal Entity Identifier of the Participant on whose behalf the Order is placed;

b. a yes/no indication of whether the Participant is a swap dealer, as defined in Section 1a(49) of the CEA and CFTC Regulations, with respect to the Swap for which the Order is submitted;

c. a yes/no indication of whether the Participant or Authorized User is a major swap participant, as defined in Section 1a(33) of the CEA and CFTC Regulations, with respect to the Swap for which the Order is submitted;

d. a yes/no indication of whether the Participant is a financial entity, as defined in Section 2(h)(7)(C) of the CEA;

e. a yes/no indication of whether the Participant or Customer is a U.S. person, as defined in the CFTC's July 26, 2013 Cross-Border Guidance, as may be amended from time to time; and

f. if the Swap will be allocated: (i) an indication that the Swap will be allocated; (ii) the LEI of the agent; (iii) an indication of whether the Swap is a post-allocation swap; and (iv) if the Swap is a post-allocation swap, the unique swap identifier of the original transaction between the reporting counterparty and the agent.

C. In the event that an FCM Participant or Executing Participant or Authorized User of an FCM Participant or Executing Participant receives an Order from a Customer that cannot be immediately entered on the Platform, the Executing Participant or Authorized User of the Executing Participant must prepare a written Order ticket and include the account designation, date, an electronic timestamp reflecting the time of receipt and other information required pursuant to section (B) above. The FCM Participant or Executing Participant must enter the Order on the Platform when the Order becomes executable.

D. Audit Trail Requirements

1. Participants that provide connectivity to the Company are responsible for maintaining, or causing to be maintained, an Order routing or front-end audit trail for all electronic Orders, including Order entry, modification, cancellation and responses to such messages, entered on the Platform through any gateway to the Platform. The audit trail must contain all Order receipt, Order entry, Order modification, and response or receipt times to the highest level of precision achievable by the operating system, in accordance with CFTC requirements for electronic Orders and no more than one second for non-electronic Orders. The times captured must not be able to be modified by the Person entering the Order.

2. Participants, including Authorized Users and any Person having Trading Privileges, must maintain audit trail information as required by the CEA and CFTC Regulations, including, but not limited to, CFTC Regulations 1.31 and 1.35 if applicable, and must be able to produce this data in a standard format

upon request from the Regulatory Oversight Committee, Compliance Department or other relevant department of the Company.

3. FCM Participants must maintain a complete record of all of Customer Orders to trade Company Contracts received by the FCM Participant, and any other Transaction records, communications or data received by the FCM Participant regarding its Customer Accounts.

4. The audit trail must capture required fields, which include but are not limited to the following: all fields relating to Order entry, including the ID of a Company Contract, quantity, Order type, buy/sell indicator, User ID(s), Customer Type Indicator Code, timestamps, and, where applicable, stop/trigger price, type of action and action status code, and applicable information contained in paragraph (B) of this Rule 5.2.

5. For Orders that are executed, the audit trail must record the execution time of the Company Contract and all fill information.

6. The Compliance Department staff shall require, at least on an annual basis, its Participants to verify compliance with these audit trail and record-keeping requirements. Participants also may be subject to periodic audit trail spot checks, depending upon any indicators that any Participant is failing to adhere to Company Rules pertaining to audit trail requirements, Participant obligations or any other failures to provide information to the Company upon request. The findings of such Company reviews will be documented and maintained as part of the books and records of the Company. The reviews shall include, but not be limited to, the following:

a. review of random samples of audit trail data;

b. review of the process by which identifications are assigned to records and users and how the records are maintained; and

c. review of account numbers and customer indicators in trade records to test for accuracy and improper use.

E. CTI Codes. Each Participant must identify each Transaction on the record of transactions submitted to the Company with the correct CTI Code. The CTI Codes are as follows:

CTI 1: Electronic Trading and Privately Negotiated—Applies to Transactions initiated and executed by a Participant for its Proprietary Account, for an account controlled by a Participant, or for an account in which the Participant has an ownership or financial interest.

CTI 2: Electronic Trading and Privately Negotiated—Applies to Transactions initiated and executed by a Participant trading for a clearing member's house account.

CTI 3: Electronic Trading and Privately Negotiated—Applies to Orders entered by a Participant or Authorized User for another Participant or an account controlled by such other Participant.

CTI 4: Electronic Trading and Privately Negotiated—Applies to Transactions initiated and executed by a Participant trading for any other type of Customer.

F. A Company Contract will not be void or voidable due to: (1) a violation by the Company of the provisions of sections 5 or 5h of the CEA or Parts 37 or 38 of CFTC Regulations; (2) any CFTC proceeding to alter or supplement a rule, term or condition under section 8a(7) of the CEA or to declare an emergency under section 8a(9) of the CEA; or (3) any other proceeding the effect of which is to: (i) alter or supplement a specific term or condition or trading rule or procedures, or (ii) require the Company to adopt a specific term or condition, trading rule or procedure, or to take or refrain from taking a specific action.

Rule 5.3 Order Type

A. The following types of Orders may be entered on the Platform with respect to any Company Contract.

1. *Limit Order.* An Order to buy or sell a Company Contract at a specified price or better. A Limit Order must be entered on the Platform with a defined limit price. A Limit Order will be executed when it is entered, to the extent that there are resting contra-Orders, with any balance of such Limit Order to remain as a resting Order until such Limit Order is executed or canceled. Unless canceled by the Participant or upon a market close, an exchange restart, or other disruption to normal operating conditions, all Limit Orders shall be normally canceled by the Company 30 days after being placed.

2. *Negotiated Trade Order.* An Order to cross a pre-negotiated trade available only for Permitted Transactions on the Company SEF. A Negotiated Trade Order must be entered on the Platform with the Order size, limit price, buy or

sell indication, and committed counterparty. The entire balance of the Negotiated Trade Order shall be executed against the committed counterparty's side of the Negotiated Trade Order via the trade matching system. The agreed-upon terms of any Negotiated Trade Order must be submitted to the Platform via the Company Telecommunications Systems by one Participant within 5 minutes of the conclusion of any pre-negotiation. The counterparty to the transaction must then approve the terms via the Company Telecommunication Systems before the Negotiated Trade Order is executed via the trade matching system.

3. *Quote.* A Limit Order as defined in this Rule 5.3A that is entered on the Platform by a Liquidity Provider.

4. *Stop Limit Order.* Once a stop price specified by the Participant is met or exceeded, a Limit Order is submitted automatically. The stop price is the price of an executed Limit Order that will activate the subsequent automatic submission of the Participant's Limit Order without further instruction. The price for the Limit Order must be specified by the Participant at the time the Stop Limit Order is submitted. Prior to the triggering of the stop price, a Stop Limit Order will remain open until being canceled by the Participant. Once the stop price is triggered, the resulting Limit Order is treated as a normal Limit Order.

B. The Company's central limit order book matches orders in an open and competitive manner on the basis of a price and time priority algorithm.

C. The Company does not accept indications of interest or indicative quotes.

D. Other types of Orders as may be approved by the Company from time to time as certified with the CFTC in accordance with Part 40 of CFTC Regulations and disclosed in a Participant Notice and on the Website.

Rule 5.4 Trading Contracts on Behalf of Customers

A. Individuals or entities that have not been approved and authorized as Participants of the Company may trade Company Contracts only as Customers of an FCM Participant, and all Customer Orders must be transmitted to the Company by each Customer's FCM Participant. Each FCM Participant shall maintain a secure connection to the Company and comply with all technical and other requirements established by the Company for this purpose.

B. Upon submission of a Customer Order, the Company will conduct a review of the FCM Participant's applicable Customer Account to ensure that the FCM Participant's Customer can fully collateralize the Order prior to entering into any Transaction. If the FCM Participant's Customer Account does not have the necessary funds for the Order, the Company will not accept the Customer's Order.

Rule 5.5 Execution Methods

A. Swap Execution Facility:

1. The Company facilitates the execution of Orders through a central limit order book on the Platform, as set forth in Rule 5.3.

2. Negotiated Trade Orders are facilitated and executed via the Platform's trade matching system.

3. The Company SEF does not facilitate the execution of Block Trades or EFPs.

B. Designated Contract Market:

1. The Company facilitates the execution of Orders in an open and competitive manner through a central limit order book on the Platform, as set forth in Rule 5.3.

2. The Company facilitates Block Trades and EFP transactions, as set forth in Rule 5.7 and Rule 5.8, respectively.

3. The Company DCM does not facilitate the execution of Negotiated Trade Orders.

C. A written record of all of the terms of each Transaction entered into on the Company or pursuant to the Rules will be available immediately upon execution through the Participant Portal. Such record shall legally supersede any previous agreement and serve as a confirmation of each such Transaction. The Company will send confirmation messages to Participants upon execution of a Transaction via the API and/or Portal, if such Participants are online at the time. However, please note that if any applicable Participant is not online at the time of execution, such Participant will see the confirmation(s) when it next logs on to the Platform.

D. Except with respect to transfer trades, the product type, size, execution time (or submission time in the case of Block Trades and EFPs) and execution method for each Transaction will be made available on the Platform to all Participants im-

mediately after execution (or immediately after submission to the Platform in the case of Block Trades and EFPs) of the relevant Transaction.

Rule 5.6 Trading Hours

A. The Trading Hours of the Company are 24 hours a day, 7 days a week, 365 days per year.[1] The Trading Hours applicable to any given type of Company Contract will be as specified in Chapter 12 of these Rules with any modifications posted on the Website and sent by Participant Notice.

Rule 5.7 Block Trades

A. The Company may permit Block Trades in Company Contracts listed by the Company DCM. The relevant Company Contract Specifications shall specify whether a Company Contract is eligible to be traded as a Block Trade.

B. Each Block Trade shall be effected away from the Platform but otherwise pursuant to the Rules. The parties to a Block Trade must be Eligible Contract Participants, and a Block Trade must be in a size that is equal to or in excess of the applicable minimum block size for such Company Contract as set forth in the Company Contract Specifications. The Company shall, from time to time, review and (as appropriate) revise its minimum block sizes.

C. An FCM Participant or an Executing Participant must receive written instructions from a Customer or obtain the Customer's prior written or recorded consent before entering into a Block Trade with that Customer.

D. Except as may otherwise be permitted by Applicable Law, Participants shall not aggregate Orders for different accounts to achieve the minimum block size.

E. The price at which a Block Trade is executed must be fair and reasonable in light of (1) the size of the Block Trade, (2) the prices and sizes of other transactions in the same contract at the relevant time, (3) the prices and sizes of transactions in other relevant markets at the relevant time, and (4) the circumstances of the markets or the parties to the Block Trade.

F. Block Trades between different accounts with common beneficial ownership are prohibited unless (1) each party's decision to enter into the block trade is made by an independent decision-maker and (2) each party has a legal and independent *bona fide* business purpose for engaging in the block trade.

G. The material terms of a Block Trade must be agreed to on the Company Telecommunication Systems. Each Block Trade must be submitted to the Company via the Company Telecommunication Systems by one Participant within 5 minutes of the execution. The counterparty to the transaction must then approve the terms of the Block Trade via the Company Telecommunication Systems within 5 minutes of the execution. The Company shall promptly publish such information to the market with an indication that it was a Block Trade.

H. Participants involved in the execution of Block Trades must maintain written or electronic records of all such Block Trades, including an electronic timestamp reflecting the date and time any such Order was received as well as an electronic timestamp reflecting the date and time such Order was executed or canceled.

I. All Company Contracts effected as Block Trades shall be cleared in the usual manner.

Rule 5.8 Exchange for Physical Transactions

A. The Company may permit EFP transactions involving Company Contracts listed by the Company DCM. The relevant Company Contract Specifications shall specify whether a Company Contract is eligible to be traded as a component of an EFP transaction.

B. An EFP transaction shall consist of two discrete but related simultaneous transactions in which one party must be the buyer of the related position and seller of the corresponding Company Contract, and the other party to the EFP transaction must be the seller of the related position and the buyer of the corresponding Company Contract. The related position must involve the commodity underlying the Company Contract in a quantity that is approximately equivalent to the quantity covered by the Company Contract.

C. Each EFP transaction requires a *bona fide* transfer of ownership of the cash commodity between the parties. The facilitation of an EFP transaction by any party that knows such EFP transaction is non *bona fide* shall constitute a violation of this Rule.

D. The execution of an EFP transaction may not be contingent upon the execution of another EFP or related position transaction between the parties where the trans-

[1] Or, 366 days per year for leap years.

actions result in the offset of the related position without the incurrence of market risk that is material in the context of the related position transactions.

E. The accounts involved in the execution of an EFP transaction must be (1) independently controlled with different beneficial ownership, (2) independently controlled accounts of separate legal entities with the same beneficial ownership, or (3) independently controlled accounts within the same legal entity, provided that the account controllers operate in separate business units.

F. EFP transactions may be effected at such commercially reasonable prices as are mutually agreed upon by the parties to the transaction. EFP transactions may not be priced to facilitate the transfer of funds between parties for any purpose other than as the consequence of legitimate commercial activity.

G. The parties to an EFP transaction shall maintain all documents relevant to the Company Contract and the related position including all documents customarily generated in accordance with the relevant market practices, including, as applicable, copies of the documents evidencing title to, or the contract or contracts to buy or sell, the cash commodity involved in such EFP transaction. Any such documents and information shall be furnished to the Company upon request.

H. The material terms of an EFP transaction must be agreed to on the Company Telecommunication Systems. Each EFP transaction must be submitted to the Company via the Company Telecommunication Systems by one Participant within 5 minutes of the execution. The counterparty to the transaction must then approve the terms of the EFP transaction within 5 minutes of the execution via the Company Telecommunication Systems.

I. All Company Contracts effected as part of EFP transactions shall be cleared in the usual manner.

Chapter 6 Clearing and Delivery

Rule 6.1 Clearance and Substitution

A. Upon submission of an Order, the Company will conduct a review of the Participant's Collateral Account to ensure that the Participant can fully collateralize the Order prior to entering into any Transaction. If the Participant's Collateral Account does not have the necessary funds and/or collateral for the Order, the Company will not accept the Order.

B. Upon the successful matching of Orders, the Company's Derivatives Clearing Organization shall immediately, through the process of Novation, be substituted as and assume the position of seller to the Participant buying and buyer to the Participant selling the relevant Company Contract. Upon such substitution, the buying and selling Participants shall be released from their Obligations to each other, and such Participants shall be deemed to have bought the Company Contract from or sold the Company Contract to the Company's DCO, as the case may be, and the Company's DCO shall have all the rights and be subject to all the liabilities of such Participants with respect to such Transactions. Such substitution shall be effective in law for all purposes. The Participants of the Company Contract are deemed to consent to the Novation by entering the applicable Orders on the Company Platform and the Company DCO consents to the Novation by accepting the Orders on the Company Platform.

C. Company Contracts with the same terms and conditions, as defined by the Company Contract Specifications, submitted to the Company's Derivatives Clearing Organization for clearing, are economically equivalent within the Company's Derivatives Clearing Organization and may be offset with each other within the Company's Derivatives Clearing Organization.

D. Upon acceptance of a Company Contract by the Company's Derivatives Clearing Organization for clearing:

1. The original Company Contract is extinguished;
2. The original Company Contract is replaced by an equal and opposite Company Contract between the Company's DCO and each Participant; and
3. All terms of a cleared Company Contract must conform to the Company Contract Specifications.

E. If a Company Contract is rejected for clearing by the Company's Derivatives Clearing Organization for any reason, such Company Contract is void ab initio.

Rule 6.2 Settlement of Company Contracts

A. The Company shall maintain, on its system, a record of each Participant's account balances and Company Contracts.

B. On the Settlement Date, the Company will notify all Participants of the final amount payable.

C. With respect to a Company Contract that is physically settled, the Company shall record the following transfers in Participant Accounts in the Company's books and records by no later than the next Business Day after the Settlement Date (except as otherwise specified in the Company Contract specifications); provided, however, that where the same Participant has offsetting positions in the same Company Contract with the same terms, the following operations shall be netted for that Participant:

1. With respect to a futures contract: (i) to the extent a buyer has not already prepaid the U.S. dollar ("USD") purchase price of the future in accordance with the Company Contract specifications, the buyer of the future shall be debited the total USD purchase price, and shall be credited with the total Underlying due under the Company Contract; and (ii) the seller of the future shall be debited the total Underlying due under the Company Contract, and shall be credited with the total USD purchase price.

2. With respect to a call option contract: (i) the call option buyer shall be debited the total USD strike price, and shall be credited with the total Underlying due under the Company Contract; and (ii) the call option seller shall be debited the total Underlying due under the Company Contract, and shall be credited with the total USD strike price.

3. With respect to a put option contract: (i) the put option buyer shall be debited the total Underlying set forth in the Company Contract, and shall be credited with the total USD strike price; and (ii) the put option seller shall be debited the total USD strike price due under the Company Contract, and shall be credited with the total Underlying set forth in the Company Contract.

4. With respect to a swap contract that is not an option: (i) to the extent a buyer has not already prepaid the USD purchase price of the swap in accordance with the Company Contract specifications, the buyer of the swap shall be debited the total USD purchase price, and shall be credited with the total Underlying due under the Company Contract; and (ii) the seller of the swap shall be debited the total Underlying due under the Company Contract, and shall be credited with the total USD purchase price.

D. For an expired Company Contract that is an option, the Company will transfer the Underlying to the Participant Account on the Company's books and records of the Participant that initially posted the Underlying in its capacity as the option call writer.

E. After the notice period on the last trading day of an expiring Series of Company Contracts that are options, the Company will delete all such Company Contracts that have not been exercised from each Participant's Participant Account. A Company Contract that is an option and that has not been exercised on or before the last trading day will expire with no value in accordance with the Contract Specifications. Company Contracts that are physically settled options shall not be exercised by the Company for a Participant automatically.

Rule 6.3 Deposit Procedures

A. A Participant must submit a deposit notification through the Participant Portal before the Participant may deposit funds or any Underlying with the Company. A Participant must deposit funds or Underlying on the same day as the Participant submits to the Company a deposit notification to the Company.

B. Deposits occur, and funds and Underlying are available for use with respect to Trading Privileges and Clearing Privileges, no later than the next Settlement Bank Business Day after a Participant submits a deposit notification and deposits funds or Underlying with the Company in accordance with Rule 6.3A[.]

C. Participants are responsible for all transfers of funds from their Company-approved accounts to the Collateral Account or transfers of any Underlying to the Company for credit to the relevant Participant Account.

D. In the event a Participant deposits funds or Underlying to the Company without submitting a deposit notification, the Participant agrees to: (1) cooperate with the Company to resolve any issues that may arise; and (2) agree that the Company will send the funds or Underlying back to the account or address from which it was transferred within two (2) Settlement Bank Business Days if there has been no resolution.

Rule 6.4 Withdrawal Procedures

A. Only an Authorized Representative may submit a withdrawal notification through the Participant Portal before the Company transfers funds or Underlying to a Participant or a Customer. Upon receipt of a withdrawal notification, the Com-

pany no longer permits funds or Underlying in the amount listed in the withdrawal notification to be used for Trading Privileges and Clearing Privileges.

B. Participants are responsible for providing accurate account numbers or wallet addresses, as the case may be, to allow the Company to effect transfers to the Participants or Customers.

C. Withdrawals occur, and funds and Underlying are available, no later than the next Settlement Bank Business Day after a Participant has submitted a withdrawal notification if the Participant submits a withdrawal notification during Trading Hours.

D. With respect to withdrawals of Digital Currency collateral, the Company shall deliver to the Participant a cryptographically signed Digital Currency transaction, which shall include the two signatures, the LedgerX "from" address, the Participant "to" address and the appropriate Digital Currency withdrawal amount.

E. If a Participant fails to adhere to the withdrawal procedures set forth herein or in the Company Contract Specifications, as applicable, the Company will take reasonable measures to effect the withdrawal; however, if unable to effect the withdrawal, the Participant's collateral may become the sole property of the Company, to the extent permitted by Applicable Law. The **Company may apply** the collateral (including any Underlying held in such Participant's Participant Account) against the Participant's Obligations.

Rule 6.5 Deliveries

A Participant that is required to make or accept delivery under a Company Contract (either for itself or on behalf of a Customer) agrees that it is required to provide full collateralization prior to entering any such Transaction or exercising any Company Contract so as to allow the Company to complete all necessary delivery requirements as set forth in the Rules. Deliveries will occur on the Company's books and records unless otherwise specified in the Company Contract Specifications. Any failure to deposit funds or collateral in accordance with Rule 6.3 or withdraw funds or collateral in accordance with Rule 6.4 may be deemed a default of an Obligation and an act detrimental to the interest or welfare of the Company.

Rule 6.6 Reconciliation

The Company shall reconcile the positions and cash and collateral balances of each Participant at the end of each Settlement Bank Business Day. The Company shall make available to each Participant the positions and cash and collateral balances of each such Participant and any Customers of the Participant. All Participants shall be responsible for reconciling their records of their positions and cash and collateral balances with the records of positions and cash and collateral balances that the Company makes available to Participants.

Rule 6.7 Swap Data Reporting

A. The Company shall report Regulatory Swap Data for Swaps to a single Swap Data Repository for purposes of complying with the CEA and applicable CFTC Regulations governing the regulatory reporting of swaps. The Company shall report all data fields as required by Appendix A to Part 43 of CFTC Regulations and Appendix 1 to Part 45 of CFTC Regulations, as applicable, including, but not limited to, Swap counterparties, Company Contract type, option method, option premium, LEIs, User IDs, buyer, seller, USIs, unique product identifiers, underlying asset description, the Swap price or yield, quantity, maturity or expiration date, the size, settlement method, execution timestamp, timestamp of submission to the SDR, the CTI Code, Participant Accounts, and whether a Participant is a swap dealer, major swap participant or a financial entity. The Company shall identify each counterparty to any Transaction in all recordkeeping and all Regulatory Swap Data reporting using a single LEI as prescribed under CFTC Regulation 45.6. As soon as technologically practicable after execution, the Company also shall transmit to both Swap counterparties and the LedgerX DCO, the USI for the Swap created pursuant to CFTC Regulation 45.5 and the identity of the SDR. For Swaps involving allocation, the Company will transmit the USI to the Reporting Counterparty and the agent as required by CFTC Regulation 45.5(d)(1).

B. The Company shall from time to time designate a Swap Data Repository in respect of one or more Swaps and shall notify Participants of such designation. Currently, the Company reports all Regulatory Swap Data for all Swaps to ICE Trade Vault.

C. Participants that become aware of an error or omission in Regulatory Swap Data for a Transaction shall promptly submit corrected data to the Company. Participant shall not submit or agree to submit a cancellation or correction in order to gain or extend a delay in public dissemination of accurate Swap Transaction and Pricing Data or to otherwise evade the reporting requirements of Part 43 of CFTC

Regulations. LedgerX will report any errors or omissions in Regulatory Swap Data to the same SDR to which it originally submitted the Data, as soon as technologically practicable after discovery of any such error or omission.

D. The Company sends the Regulatory Swap Data as set forth in Rule 6.7A to the Swap Data Repository as soon as technologically practicable after a trade has been executed on the Platform, or pursuant to the Company Rules. Following the transmittal of the Data to the Swap Data Repository, the Company will make available the Swap Transaction and Pricing Data to all Participants accessing the Platform. However, due to transmission and posting timing of the Swap Data Repository, Participants should be aware that the Swap Transaction and Pricing Data may be available on the Company Platform prior to being publicly disseminated by the Swap Data Repository.

Chapter 7 **Margin**

Rule 7.1 Initial Margin, Variation Margin, and Maintenance Margin Requirements

A. Each Participant shall deposit with, pay to, or maintain with the Company unencumbered assets sufficient to satisfy the Initial Margin, Variation Margin and option premiums for each Company Contract in such amounts, in such forms, at such times and in accordance with such systems as may be prescribed by or pursuant to these Rules or the Company's policies in respect thereof.

B. Each transfer of funds or Digital Currency in respect of Initial Margin or Variation Margin shall constitute a settlement (within the meaning of CFTC Rule 39.14) and shall be final as of the time the Company's accounts are debited or credited with the relevant payment.

C. **Initial Margin**

1. Initial Margin requirements shall be as determined by the staff of the Company from time to time, in accordance with CFTC Regulation 39.13(g) and the applicable margin policies of the Company. The methodology used by the Company to calculate Initial Margin shall incorporate at a minimum the following factors, among others as determined by the Chief Risk Officer ("CRO") from time to time consistent with the guidance of the Risk Management Committee and in consultation therewith as appropriate:

a. An estimate of the potential risk exposure of the Company to price movements in the Company Contract over an estimated liquidation period which shall be no less than 1-day liquidation for each futures position, or such longer liquidation time as is appropriate based on the specific characteristics of a particular Company Contract or Participant's positions, and

b. One or more measures designed to limit pro-cyclicality, including but not limited to 25% weighting in the market risk portion of margin to stressed observations. Further, the Company's pro-cyclicality measures shall be designed to deliver forward looking, stable and prudent margin requirements that limit pro-cyclicality to the extent that the soundness and financial security of the Company is not negatively affected.

2. The Company shall determine the amount of Initial Margin owing from a Participant at the time the Participant enters into a Company Contract. To satisfy the Initial Margin requirement on a Company Contract, Participant shall maintain on deposit with the Company assets in the same currency in which Participant's obligations under such Company Contract are collateralized under its contract terms.

3. Notwithstanding alerts that may be available through the Company website or APIs informing Participant of Initial Margin requirements and changes thereto, the Company shall be under no obligation to provide Participant with advanced notice, actual or constructive, of any changes to Initial Margin requirements.

4. In compliance with CFTC Regulation 39.13(g)(8)(ii), Participants shall at all times maintain on deposit with Company unencumbered assets in each account of Participant sufficient to satisfy 100 percent of the Initial Margin requirements for Participant's Company account.

5. Should a Participant fail to maintain the minimum Initial Margin in Participant's Company account at any time, the Company reserves the right to liquidate some or all Participant's positions as set forth in Rule 14.3, in whole or in part, in any or all accounts of Participant at the Company's sole and absolute discretion with no prior notice to such Participant. No action or inaction by the Company shall constitute a waiver of this right, which may be exercised by the Company at any time in the Company's sole judgment and discretion. The Participant also is not entitled to rely on the Company to liquidate Participant's

positions, and any deficiency in Participant's accounts shall remain the sole responsibility of Participant.

6. The Company may, in its sole and absolute discretion, reduce the Initial Margin requirements for the related positions of a Participant in accordance with CFTC Regulation 39.13(g)(4) if the price risks are significantly and reliably correlated, and based on such other factors as determined by the CRO, consistent with the guidance of the Risk Management Committee and in consultation therewith as appropriate.

D. **Maintenance Margin**

1. Minimum Maintenance Margin requirements shall be posted through the Company's web interface and shall change, at such time and in such amount as is determined at the discretion of the CRO, consistent with the guidance of the Risk Management Committee and in consultation therewith as appropriate. Participants shall receive no other notice of the minimum Maintenance Margin requirements.

2. If at any time a Participant fails to satisfy the minimum Maintenance Margin requirements, the Company reserves the right to liquidate some or all of the Participant's positions as set forth in Rule 14.3, in whole or in part, and in any or all accounts of Participant, at the Company's sole and absolute discretion with no other or prior notice to such Participant. The Company shall not be required to limit the liquidation of Participant's portfolio only to the point where it raises Participant's net equity above the Maintenance Margin threshold, and Company shall be entitled to liquidate Participant's entire Portfolio at the Company's sole and absolute discretion. No action or inaction by the Company shall constitute a waiver of this right, which may be exercised by the Company at any time in the Company's sole judgment and discretion. The Participant also is not entitled to rely on the Company to liquidate Participant's positions, and any deficiency in Participant's accounts shall remain the sole responsibility of Participant.

3. If at any time a Participant fails to satisfy the minimum Maintenance Margin requirements, and the Company is unable to liquidate immediately enough of Participant's positions through the central limit order book for the net equity in Participant's account to be higher than the minimum Maintenance Margin requirements, then the Participant shall be in "default" within the meaning of CFTC Regulation 39.16. No formal written determination need be made in connection herewith.

4. If a Participant is in default as set forth above, the Company reserves the right to take all actions specified in CFTC Regulation 39.16(c) and Rule 14.1, including, without limitation, the prompt transfer, liquidation, hedging, auctioning, or allocation of some or all of the Participant's positions, in whole or in part, away from the Company's central limit order book. If the liquidation of any of Participant's Company Contracts through the Company's central limit order book is not accomplished immediately, is impractical in the Company's judgment, or may be pro-cyclicality in the Company's judgment, then the Company may utilize an alternative liquidation mechanism, such as a transfer, allocation, or auction, in the sole and absolute discretion of the CRO, with none of those methods being required to proceed in any particular order. To the extent a Participant's Company Contracts are transferred or allocated, then the Company shall estimate the residual value of a Participant's account, which may be zero or in deficit.

5. No action or inaction by the Company shall constitute a waiver of the Company's right to take the actions set forth in this Section 7.1.D, which may be exercised by the Company at any time after a Participant fails to satisfy the minimum Margin Maintenance requirements, in the Company's sole judgment and discretion. The Participant also shall not rely on the Company to liquidate Participant's positions in any particular time frame or manner, or at all, or to take the other actions set forth in this Section 7.1.D to resolve Participant's "default," and any deficiency in Participant's accounts shall remain the sole responsibility of Participant.

E. **Optional Request for Variation Margin**

1. The Company is under no obligation to require Variation Margin from any Participant, and may do so only as a courtesy to Participants. Participants receive notice of the adequacy of the margin on deposit with the Company through the posting of Maintenance Margin requirements through the Company's web interface. If the Company requests Variation Margin from any Participant, that request shall in no way diminish or delay the minimum Mainte-

nance Margin requirements of the Company. The failure of a Participant to satisfy any Maintenance Margin requirement shall trigger the liquidation mechanisms described in Rule 7.1.D and Rule 14.3, notwithstanding anything in this Rule 7.1.E.

2. After a Participant has entered into a Company Contract utilizing margin, the Company may require Participant to deposit additional funds known as Variation Margin by such time, and in such amount, as the Company shall specify, notwithstanding Participant's previous deposit of funds sufficient to satisfy the Company's Initial Margin for a Company Contract or Participant account.

3. Variation Margin may be required from a Participant within such time and in such amount as is determined at the sole and absolute discretion of the Company, for already existing positions, as determined by the CRO consistent with the guidance of the Risk Management Committee and in consultation therewith as appropriate. That Variation Margin may apply to long positions, short positions, or both.

4. The CRO may determine that Variation Margin is required, consistent with the guidance of the Risk Management Committee and in consultation therewith as appropriate, if the CRO determines (1) that unstable conditions relating to one or more Company Contracts exist, or that the maintenance of an orderly market or the preservation of the fiscal integrity of the Company so requires, or (2) that any Participant is carrying Company Contracts or incurring risks in its account(s) that are larger than is accounted for by Participant's Initial Margin or justified by the financial and/or operational condition of the Participant. No formal written determination need be made in connection herewith.

a. Variation Margin requirements on the bases described in clause (1) above may be required of any or all Participants.

b. Variation Margin requirements on the bases specified in clause (2) above may be required of any Participant with respect to which such determination is made.

F. **Intraday Profit and Loss Settlements**

1. The Company shall mark-to-market all positions in the Participant's Company accounts, and calculate the net profit or loss in each Participant account as measured against the last time the Participant's positions were marked-to-market. This calculation shall be conducted intra-day, at a frequency determined by the CRO.

2. A Participant's Company account shall be debited or credited the net profit or loss described above intra-day, at a frequency determined by the CRO in accordance with the Company's policies and procedures in effect from time to time.

3. The net loss in each Participant's Company account shall be due and payable or immediately in U.S. dollars on deposit with the Company.

G. **Asset Management; Withdrawal Limitations**

1. The Company shall not be liable to Participant for any interest income on assets deposited with the Company for Initial Margin, Variation Margin, or otherwise.

2. The Company shall retain the amount of Initial Margin or Variation Margin deposited with respect to any Company Contract for which a delivery notice has been issued until such time as provided for in the applicable Rules (or if not so provided, until all delivery and payment obligations in respect of such contract have been satisfied in full).

3. Excess Initial Margin or Variation Margin on deposit with the Company shall not be released to Participant unless the Participant has paid all margins, premiums and other amounts due from Participant for all of Participant's accounts or otherwise pursuant to these Rules. Notwithstanding any provision to the contrary in these Rules, the Company may refuse to release the amount of excess Initial Margin on deposit in the Company account of a Participant which has requested such release if the CRO concludes that the financial or operational condition of the Participant is such that the release of excess Initial Margin or Variation Margin would be contrary to the fiscal integrity of the Company.

4. The CRO may, consistent with the guidance of the Risk Management Committee and in consultation therewith as appropriate, limit withdrawals of excess Initial Margin or Variation Margin already on deposit for a specified time, when the CRO concludes that it is required due to unstable conditions relating to one

or more Company Contracts, or for the maintenance of an orderly market or the preservation of the fiscal integrity of the Company, or where a Participant is carrying a quantity of Company Contracts that is larger than is justified by the financial and/or operational condition of the Participant.

5. Without limitation of the Company's other rights to use or apply a Participant's Initial Margin or Variation Margin as permitted in these Rules, under applicable law or otherwise, the Company (i) may invest Initial Margin or Variation Margin in the form of cash in accordance with the Company's investment policies and applicable law, and (ii) may use Participant's assets constituting Initial Margin or Variation Margin in its account from time to time to meet temporary liquidity needs of the Company (whether or not such Participant is in default), in a manner consistent with the Company's liquidity policies and applicable law, including by way of assignment, transfer, pledge, repledge or creation of a lien on or security interest in such Initial Margin or Variation Margin in connection with borrowing, repurchase transactions or other liquidity arrangements to support payment obligations of the Company in respect of Company Contracts. The Company will restore any such Initial Margin or Variation Margin so used as soon as practicable following the conclusion of the event requiring the use of a Participant's Initial Margin or Variation Margin for liquidity purposes. Prior to the occurrence of a default with respect to a Participant, the Company may use, invest or apply the Initial Margin or Variation Margin of such Participant only as set forth in this Rule 7.1. This Rule 7.1 shall not be deemed to limit the Company's rights to use or apply a Participant's Initial Margin or Variation Margin as permitted in the Rules, under applicable law or otherwise following the occurrence of a default of that Participant, as determined by the Company.

6. Subject to all other limitations set forth in this Rule 7.1, the Company shall return to a Participant, by such time as may be specified by the Company, the amount of any excess Initial Margin or Variation Margin on deposit from such Participant, provided that the Company receives a request for such a release from such Participant.

Rule 7.2 Collateral

A. Subject to the terms and conditions of Company-approved margin collateral, the Company will accept from Participants the following as margin collateral: (1) cash; (2) the Underlying; and (3) any other form of collateral deemed acceptable by the Risk Management Committee upon the Risk Management Committee's approval of such collateral as communicated through Participant Notices and on the Website. The Company will value margin collateral as it deems appropriate.

B. Except as otherwise provided herein, Collateral must be and remain unencumbered. Each Participant posting collateral hereby grants to the Company a continuing first priority security interest in, lien on, right of setoff against and collateral assignment of all of such Participant's right, title and interest in and to any property and collateral deposited with the Company by the Participant, whether now owned or existing or hereafter acquired or arising, including without limitation the following: (i) such Participant's Participant Account and all securities entitlements held therein and all funds held in a Collateral Account; (ii) all Digital Currencies that, in each case, are held in or otherwise credited to a virtual "wallet" or other account maintained by the Company; (iii) such virtual "wallet" or other account; and (iv) all proceeds of the foregoing. A Participant shall execute any documents required by the Company to create, perfect and enforce such lien.

C. Each Participant hereby agrees that with respect to any Digital Currency and any other financial asset which is or may be credited to the Participant's Participant Account, the Company shall have control pursuant to Section 9–106(a) and 8–106(e) of the UCC and a perfected security interest pursuant to Section 9–314(a) of the UCC.

D. A Participant must transfer the collateral to the Company or to a Collateral Account and the Company will hold collateral transferred to the Company on behalf of the Participant. The Company will credit to the Participant the collateral that such Participant deposits. Collateral shall be held by the Company until a Participant submits a withdrawal notification unless otherwise stipulated by these Rules.

E. The Company will not be responsible for any diminution in value of collateral that a Participant deposits with the Company. Any fluctuation in markets is the risk of each Participant. Any interest earned on Participant collateral may be retained by the Settlement Bank or the Company.

F. The Company has the right to liquidate a Person's Company Contracts or noncash collateral to the extent necessary to close or transfer Company Contracts, fulfill obligations to the Company or other Participants, and/or to return collateral in the

event that (1) the Person ceases to be a Participant; (2) the Company suspends or terminates the Person's Trading Privileges or Clearing Privileges; (3) the Person's open position in any Company Contract becomes less than fully collateralized; or (4) the Company determines in its sole discretion that it is necessary to take such measures.

Rule 7.3 Segregation of Participant Funds

The Company shall separately account for and segregate from the Company's proprietary funds all Participant funds used to purchase, margin, guarantee, secure or settle Company Contracts, and all money accruing to such Participant as the result of Company Contracts so carried in a Collateral Account. The Company shall maintain a proprietary account that will be credited with fees or other payments owed to the Company that are debited from the Collateral Account as a result of Participant trades and settlements of Company Contracts. The Company shall maintain a record of each Participant's account balances and Company Contracts. The Company shall not hold, use or dispose of Participant funds except as belonging to Participants.

Rule 7.4 Concentration Limits

The Company may apply appropriate limitations or charges on the concentration of assets posted as collateral, as necessary, in order to ensure its ability to liquidate such assets quickly with minimal adverse price effects, and may evaluate the appropriateness of any such concentration limits or charges, on a periodic basis. In the event that the Company determines in its sole discretion that the Participant's deposit is in material excess of the amount necessary to collateralize the Participant's Company Contracts, the Company shall have the right to (1) transfer non-cash collateral, including Digital Currencies, back to a Participant, and Participant agrees to accept such transfer, or (2) take other action the Company deems to be necessary to safeguard the collateral. The Company shall be entitled to charge fees related to holding non-cash collateral in material excess of the amount necessary to collateralize a Participant's Company Contracts.

Chapter 8 Business Conduct and Trading Practices

Rule 8.1 Scope

This Chapter 8 applies to all Transactions except as may be provided herein. Participants and, where applicable, Authorized Users, shall adhere to and comply fully with this Chapter 8.

Rule 8.2 Procedures

A. With respect to trading on the Platform, the Company may adopt procedures relating to Transactions and trading on the Platform, including, without limitation, procedures to:

1. determine the daily settlement price of a Company Contract;
2. disseminate the prices of bids and offers on, and trades in, Company Contracts;
3. record, and account for, Company Contracts and activity on the Company;
4. perform market surveillance and regulation on matters affecting Company Contracts and activity on the Company;
5. establish limits on the number and/or size of Orders that may be submitted by a Participant on the Platform;
6. establish limits on the number of Company Contracts that may be held by a Participant; and
7. establish a limit on the maximum daily price fluctuations for any Company Contract and provide for any related restriction or suspension of trading in the Company Contract.

B. The Company may, in its discretion and at any time, amend any procedures adopted pursuant to Rule 8.2A, and will publish the amendments in a Participant Notice and on the Website.

Rule 8.3 Prohibited Trading Activity; Prohibitions on Fictitious Transactions, Fraudulent Activity and Manipulation

No Person shall engage in any of the following activities in connection with or related to any Company activity:

A. any fraudulent act or scheme to defraud, deceive, trick or mislead;
B. trading ahead of a Customer or front-running;
C. fraudulent trading;

D. trading against a Customer Order or entering into a cross-trade, except as permitted by Rule 8.11;

E. accommodation trading;

F. fictitious Transactions;

G. pre-arranged or non-competitive Transactions (except for Transactions specifically authorized under these Rules);

H. cornering, or attempted cornering, of any Company Contract;

I. violations of bids or offers;

J. spoofing;

K. any manipulation proscribed under CEA Section 9(a)(2) or CFTC Regulations 180.1(a) or 180.2, whether attempted or completed;

L. demonstrating intentional or reckless disregard for the orderly execution of Transactions during the closing period;

M. making fictitious or trifling bids or offers, offering to enter into a Company Contract at a price variation less than the minimum price fluctuation permitted for such Company Contract under the Rules, or knowingly making any bid or offer for the purpose of making a market price that does not reflect the true state of the market; or

N. other conduct that constitutes a disruptive trading practice or is otherwise prohibited under CEA Section 4c(a)(5) or applicable CFTC Regulations.

Rule 8.4 Prohibition on Money Passing, Pre-Arranged, Pre-Negotiated and Non-Competitive Trades

A. No Person may enter Orders for the purpose of entering into Transactions without a net change in either party's open positions but a resulting profit to one party and a loss to the other party, commonly known as a "money pass".

B. No Person shall pre-arrange or pre-negotiate any purchase or sale or non-competitively execute any Transaction, except to effect a Negotiated Trade Order, a Block Trade or an EFP transaction. Pre-execution communications related to the material terms of a Negotiated Trade Order, a Block Trade or an EFP transaction must take place on the Company Telecommunication Systems.

Rule 8.5 Acts Detrimental to the Welfare or Reputation of the Company Prohibited

No Participant, Authorized Representative, Authorized User or ISV shall engage in any Company activity that tends to impair the welfare, reputation, integrity or good name of the Company.

Rule 8.6 Misuse of the Platform

Misuse of the Platform is strictly prohibited. It shall be deemed an act detrimental to the Company to permit unauthorized use of the Platform, to assist any Person in obtaining unauthorized access to the Platform, to trade on the Platform without an agreement, to alter the equipment associated with the Platform (except with the Company's consent), to interfere with the operation of the Platform, to intercept or interfere with information provided thereby, or in any way to use the Platform in a manner contrary to these Rules.

Rule 8.7 Supervision; Information Sharing

A. A Participant shall be responsible for establishing, maintaining and administering reasonable supervisory procedures to ensure that its Authorized Users comply with these Rules and Applicable Law, and such Participant may be held accountable for the actions of such Authorized Users with respect to the Company.

B. Participants and Authorized Users shall cooperate fully with the Company or a Regulatory Agency in any investigation, call for information, inquiry, audit, examination or proceeding.

C. Participants and Authorized Users shall ensure that any information disclosed to the Company is accurate, complete and consistent. No existing or prospective Participant or Authorized User shall make any false statements or misrepresentations in any application, report or other communication to the Company.

Rule 8.8 Business Conduct

A. Conducting trading activities in an honorable and principled manner consistent with these Rules is the essence of ethical conduct with respect to the Company. Participants, Authorized Users and other Persons subject to the Company's jurisdiction shall act with ethical integrity with regard to their Company activity, and shall adhere to the following ethical standards:

1. A Participant, Authorized User and any other Person subject to the Company's jurisdiction shall abstain from engaging in conduct that is a violation of these Rules or Applicable Law, and will conduct its business in accordance with Applicable Law, and in good faith, with a commitment to honest dealing.

2. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall engage in any fraudulent act or engage in any scheme to defraud, deceive, trick or mislead in connection with or related to any Company activity.

3. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall knowingly enter, or cause to be entered, bids or offers on the Platform other than in good faith for the purpose of executing *bona fide* Transactions.

Rule 8.9 Trading Practices

A. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall knowingly effect or induce the purchase or sale of any Company Contract for the purpose of creating or inducing a false, misleading, or artificial appearance of activity in such Company Contract, or for the purpose of unduly or improperly influencing the market price of such Company Contract or for the purpose of making a price which does not reflect the true state of the market in such Company Contract. No such Participant, Authorized User or other Person shall arrange and execute simultaneous offsetting buy and sell Orders in a Company Contract with the intent to artificially affect reported revenues, trading volumes or prices.

B. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall attempt to manipulate, or manipulate the market, in any Company Contract or Underlying. No such Participant, Authorized User or other Person shall directly or indirectly participate in or have any interest in the profit of a manipulative operation or knowingly manage or finance a manipulative operation. This includes any pool, syndicate, or joint account, whether in corporate form or otherwise, organized or used intentionally for the purposes of unfairly influencing the market price of any Company Contract.

C. Orders entered on the Platform for the purpose of upsetting the equilibrium of the market in any Company Contract or creating a condition in which prices do not or will not reflect fair market values are prohibited, and any Person who makes or assists in entering any such Order with knowledge of the purpose thereof or who, with such knowledge, in any way assists in carrying out any plan or scheme for the entering of any such Order, will be deemed to have engaged in an act detrimental to the Company.

D. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall engage in any trading, practice, or conduct that constitutes a disruptive or a manipulative trading practice, as defined by the CEA, CFTC Regulations or in any interpretive guidance issued by the Commission.

E. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall make any knowing misstatement of a material fact to the Company, any Company Official, or any Board committee.

F. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall knowingly disseminate false or misleading reports regarding Transactions, the Company or one or more markets in any Company Contract.

G. Abusive trading practices are prohibited on the Platform. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall place or accept buy and sell Orders in the same product and expiration month, and for options, the same strike, when they know or reasonably should know that the purpose of the Orders is to avoid taking a *bona fide* market position exposed to market risk (transactions commonly known or referred to as "wash sales"). Buy and sell Orders that are entered with the intent to negate market risk or price competition shall be deemed to violate the prohibition on wash sales. Additionally, no Participant, Authorized User or other Person subject to the Company's jurisdiction shall knowingly execute or accommodate the execution of such Orders by direct or indirect means.

H. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall disclose an Order to buy or sell, except to a Company Representative or official of the CFTC or as necessary to efficiently execute the Order, nor shall any such Participant, Authorized User or other Person solicit or induce another Person to disclose Order information. No Participant, Authorized User or other Person shall take action or direct another to take action based on non-public Order information, however acquired, except as permitted by Rule 8.4B. The mere statement of opinions or indications of the price at which a market may open or resume trading does not constitute a violation of this Rule.

Rule 8.10 Customer Order Priority

A. No Participant, Authorized User or other Person subject to the Company's jurisdiction shall knowingly enter an Order on the Platform for its own account, an account in which it has a direct or indirect financial interest, or an account over

which it has discretionary trading authority (a "Discretionary Order"), including, without limitation, an Order allowing discretion as to time and price, when such Person is in possession of a Customer Order that can be but has not been entered on the Platform.

B. For purposes of this Rule 8.10, a Person shall not be deemed to knowingly buy or sell a Company Contract or execute a Discretionary Order if:

1. such Person is a corporate or other legal entity consisting of more than one individual trader;
2. such Person has in place appropriate "firewall" or separation of function policies and procedures; and
3. the Person or Authorized User buying or selling the Company Contract or executing the Discretionary Order in question has no direct knowledge of the Order to buy or sell the same Company Contract for any other Person at the same price or at the market price or of the Customer Order for the same Company Contract, as the case may be.

C. Nothing in this Rule 8.10 limits the ability of an "eligible account manager" to bunch Orders in accordance with CFTC Regulation 1.35(b)(5).

Rule 8.11 Trading Against Customer Orders

A. No Person in possession of a Customer Order shall knowingly take, directly or indirectly, the opposite side of such Order for its own account, an account in which it has a direct or indirect financial interest, or an account over which it has discretionary trading authority.

B. The foregoing restriction does not prohibit permissible pre-execution discussions conducted in accordance with Rule 8.4.

Rule 8.12 Prohibition on Withholding of Customer Orders

No Executing Participant or FCM Participant shall withhold or withdraw from the market any Customer Order, or any part of an Order, for the benefit of any Person other than the Customer.

Rule 8.13 Execution Priority

A. Executable Customer Orders must be entered on the Platform immediately upon receipt. An FCM Participant or Executing Participant that receives a Customer Order that is not immediately entered on the Platform must create a non-erasable record of the Order, including the Order instructions, account designation, date, time of receipt and any other information that may be required by the Company.

B. Customer Orders received by an FCM Participant or Executing Participant shall be entered on the Platform in the sequence received. Customer Orders that cannot be immediately entered on the Platform must be entered when the Orders become executable in the sequence in which the Orders were received.

C. Non-discretionary Customer Orders received by an FMC Participant or Executing Participant shall be entered on the Platform in the sequence in which they were received. Non-discretionary Customer Orders that cannot be immediately entered on the Platform must be entered when the Orders become executable in the sequence in which the Orders were received.

Rule 8.14 Crossing Orders

Independently initiated Orders on opposite sides of the market for different beneficial account owners that are immediately executable against each other may be entered without delay. Orders must not involve pre-execution communications, except as permitted by Rule 8.4B.

Rule 8.15 Position Limits

A. To reduce the potential threat of market manipulation or congestion, LedgerX shall adopt for each of its Company Contracts, as is necessary and appropriate, position limitations or position accountability levels for speculators. The Company may establish position limits for one or more Company Contracts at a level not higher than any limit set by the CFTC for any Company Contract. The position limit levels shall be set forth in a Position Limit and Position Accountability Level Table as may be amended from time to time by the Company in a Participant Notice and on the Website. The Company may grant exemptions from position limits in accordance with CFTC Regulations.

B. A Participant seeking an exemption from position limits, including position limits established pursuant to a previously approved exemption, must file the required application with the Company in the form and manner as the Company may require from time to time and receive approval before exceeding such position limits. Not-

withstanding the foregoing, a Participant who establishes an exemption-eligible position in excess of position limits and files the required application with the Company shall not be in violation of this Rule, provided the filing occurs within one Settlement Bank Business Day after assuming the position. In the event that the positions in excess of the position limits are not deemed to be exemption-eligible, the applicant and the Executing Participant, if any, will be in violation of speculative position limits for the period of time in which the excess positions remained open.

C. A Participant who owns or controls aggregate positions in a Company Contract in excess of the reportable levels set forth in the Position Limit and Position Accountability Level Table or where such Person otherwise holds substantial positions in Company Contracts shall:

1. keep records, including records of such Participant's activity in the Underlying and related derivative markets, and make such records available, upon request, to the Company;
2. provide to the Company, in a timely manner upon request by the Company and in a form and manner acceptable to the Company, information relating to the positions owned or controlled by such Participant, including but not limited to the nature and size of the position, the trading strategy employed with respect to the position, and hedging information, if applicable;
3. be deemed to have consented, when so ordered by the Company, in its sole discretion, not to further increase the positions, to comply with any prospective limit which exceeds the size of the position owned or controlled, or to liquidate any open position which exceeds position limits; and
4. liquidate Company Contracts, if applicable, in an orderly manner.

D. This Rule 8.15 shall not limit the jurisdiction of the Company to take action that it determines necessary or appropriate in respect of any positions on the Company, including but not limited to the Company taking steps to liquidate such Company Contracts on behalf and at the expense of such Participant to the extent necessary to eliminate such excess.

Rule 8.16 Position Accountability Levels

A. The Company shall establish position accountability levels for Company Contracts not subject to position limits pursuant to Rule 8.15. The position accountability levels shall be set forth in a Position Limit and Position Accountability Level Table as may be amended from time to time by the Company in a Participant Notice and on the Website.

B. A Participant that owns or controls aggregate positions in a Company Contract in excess of the reportable levels set forth in the Position Limit and Position Accountability Level Table or where such Participant otherwise holds substantial positions in Company Contracts shall:

1. keep records, including records of such Person's activity in the Underlying and related derivative markets, and make such records available, upon request, to the Company;
2. provide to the Company, in a timely manner upon request by the Company and in a form and manner acceptable to the Company, information relating to the positions owned or controlled by such Person, including but not limited to the nature and size of the position, the trading strategy employed with respect to the position, and hedging information, if applicable;
3. be deemed to have consented, when so ordered by the Company, in its sole discretion, not to further increase the positions, to comply with any prospective limit which exceeds the size of the position owned or controlled, or to liquidate any open position which exceeds position accountability levels; and
4. liquidate Company Contracts, if applicable, in an orderly manner.

C. This Rule shall not limit the jurisdiction of the Company to take action that it determines necessary or appropriate in respect of any positions on the Company, including but not limited to the Company taking steps to liquidate such Company Contracts on behalf and at the expense of such Participant to the extent necessary to eliminate such excess.

Rule 8.17 Aggregation of Positions

A. For purposes of Rule 8.15 and Rule 8.16, all positions in Company Contracts must be aggregated as required by CFTC Regulations. Aggregation of positions shall apply to:

1. All positions in accounts for which a Person by power of attorney or otherwise directly or indirectly owns the positions or controls the trading of the positions. Position limits shall apply to positions held by two or more Persons acting

pursuant to an expressed or implied agreement or understanding, in the same as if the positions were held by, or the trading of the positions was done by, a single Person.

2. Any Person holding positions in more than one account, or holding accounts or positions in which the Person by power of attorney or otherwise directly or indirectly has a ten percent or greater ownership or equity interest, must aggregate all such accounts or positions unless such Person is exempted from aggregating such positions by CFTC Regulations.

B. Any Participant seeking an exemption from aggregation of positions must (1) satisfy the exemptive requirements in CFTC Regulations; and (2) apply for a Company-approved exemption in the form and manner as may be prescribed by the Company from time to time.

Rule 8.18 Large Trader Reporting

A. Each Participant shall submit to the Company (i) a daily report of all positions that exceed the reportable position levels set forth on the Website and (ii) a copy of the CFTC Form 102 (Identification of Special Accounts, Volume Threshold Accounts and Consolidated Accounts and which shall include a Series S filing made pursuant to CFTC Regulation 20.5) filed by the Participant or Executing Participant with the CFTC for such Participant's or Executing Participant's Customers' reportable accounts. The Form 102 shall be submitted to the Company no later than the Settlement Bank Business Day following the date on which the account becomes reportable.

B. Positions in Company Contracts at or above the reportable level set forth on the Website trigger reportable status. For a Participant in reportable status, all positions, regardless of size, in relevant Company Contracts must be reported to the Company, in addition to any regulatory obligations a Participant may have separate and apart from these Rules.

C. All large trader reports shall be submitted in the form and manner specified by the Company. The Company may require that more than one large trader report be submitted daily. The Regulatory Oversight Committee may require certain Participants to provide reports on a lesser number of positions than otherwise required by the Company.

Rule 8.19 Compliance

Each Participant shall have a compliance program commensurate with the size and scope of its trading activities on the Company and designed to ensure appropriate, timely and ongoing review of trading practices and compliance with the Rules. Each Participant shall act in accordance with these practices for compliance and monitoring with regard to its Company activity:

A. Provide for proper training of personnel on the provisions of the Rules;

B. Maintain internal policies and procedures to promote compliance with the Rules;

C. Promptly disclose to the Company the details of any violations of the Rules involving a Participant's activities on the Company, including its own activities or those of another Participant, and a Participant shall promptly disclose to the Company the details of any disciplinary sanctions, fines or other related determinations made by a Regulatory Agency or another market on which such Participant trades, or provision of market information to the Company or any of its Affiliates;

D. Provide an environment that encourages employees to engage in safe and confidential discussions and to disclose to senior management any trading practices that might violate the Rules;

E. Require any consultant, contractor and subcontractor to disclose all financial affiliations and conflicts of interest. Ensure that consultants, contractors or subcontractors do not cause any disclosure of information in violation of the Rules, including this code of conduct, and that confidentiality agreements are in effect where appropriate; and

F. Establish clear lines of accountability for trading practices, including provisions relating to the responsibilities of corporate officers, with appropriate oversight by the board of directors or other senior corporate management committee.

Chapter 9 Discipline and Enforcement

Rule 9.1 General

A. Market Monitoring

1. The Company shall record and store a record of all data entered into the Platform, including the Participant's and Authorized User's identity, information on Transactions and any other information required and in accordance with the Company's policies.

2. The Company shall conduct market surveillance and trade practice surveillance by monitoring and reviewing data entered into the Platform using programs designed to alert the Company of potentially unusual or violative trading activity.

3. The Company, through the Compliance Department, shall initiate a review of unusual or violative trading activity and, where appropriate, investigate such activity. The Compliance Department will also conduct investigations when Compliance Department staff at any time has reason to believe that inappropriate activity of any sort is taking place on the Company, Platform or Website.

B. All Persons within the Company's jurisdiction are subject to this Chapter 9 if they are alleged to have violated, to have aided and abetted a violation, to be violating, or to be about to violate, any Rule or any provision of Applicable Law for which the Company possesses disciplinary jurisdiction.

C. Compliance Department

1. The Company has a Compliance Department consisting of one or more compliance staff. The Chief Compliance Officer is responsible for overseeing the Compliance Department and shall report to the Regulatory Oversight Committee and the CEO.

2. The Compliance Department shall investigate unusual trading activity or other activity that the Compliance Department has reasonable cause to believe could constitute a violation of these Rules, and shall enforce the Rules and prosecute possible Rule violations within the Company's disciplinary jurisdiction.

3. The Compliance Department shall conduct at least annual reviews of all Participants to verify compliance with Company Rules. The Compliance Department may conduct periodic reviews of all persons and firms subject to the Company's Rules to verify compliance with the Company Rules. Such reviews may include, but are not limited to, reviews of randomly selected samples of audit trail data, reviews of the process by which User ID records are maintained, reviews of usage patterns associated with User IDs, and reviews of account numbers and Customer Type Indicator codes.

D. The Company, through the Compliance Department, Disciplinary Panel and Appeals Committee, shall conduct inquiries, investigations, disciplinary proceedings and appeals from disciplinary proceedings, summary impositions of fines, summary suspensions or other summary actions in accordance with this Chapter 9. Any Person subject to the Company's jurisdiction under Rule 3.1 is subject to the Company's disciplinary authority set forth in this Chapter 9.

E. The Company, through the Compliance Department, will commence an investigation upon (i) the discovery or receipt of information that indicates a reasonable basis for finding that a violation may have occurred or will occur, or (ii) the receipt of a request from Commission staff.

F. No Company Official shall interfere with or attempt to influence the process or resolution of any Disciplinary Action, except to the extent provided under these Rules with respect to a proceeding in which a Person is a member of the relevant Disciplinary Panel or Appeals Committee.

G. Representation by Counsel

1. A Respondent, upon being served with a Notice of Charges, has the right to retain and be represented by legal counsel or any other representation of its choosing, except any Director or a member of the Disciplinary Panel or person substantially related to the underlying investigations, such as material witnesses or respondents during such proceedings.

2. In the event of any appeal that requires the Company to retain legal counsel, the Respondent shall be responsible for the reasonable attorney's fees incurred by the Company if the Respondent does not prevail in the dispute.

H. The Company may hold a Participant liable for, and impose sanctions against such Participant, for such Participant's own acts and omissions that constitute a violation as well as for the acts and omissions of each Authorized User, Authorized Representative or other Person using a User ID of such Participant, or other agent or representative of such Participant (other than an Executing Participant acting as agent for such Participant), in each case, that constitute a violation as if such violation were that of the Participant.

I. *Ex Parte* Communications

1. A Respondent (and any counsel or representative of such Respondent) and the Compliance Department (and any counsel or representative of the Compliance Department) shall not knowingly make or cause to be made an *ex parte* communication relevant to the merits of a disciplinary proceeding or an appeal from a disciplinary proceeding to any member of the Disciplinary Panel or the Appeals Committee that hears such proceeding.

2. Members of a Disciplinary Panel or Appeals Committee shall not knowingly make or cause to be made an *ex parte* communication relevant to the merits of a disciplinary proceeding or an appeal from a disciplinary proceeding to any Respondent (and any counsel or representative of such Respondent) or the Compliance Department (and any counsel or representative of the Compliance Department).

3. Any Person who receives, makes or learns of any communication that is prohibited by this Rule 9.1I shall promptly give notice of such communication and any response thereto to the Compliance Department and all parties to the proceeding to which the communication relates.

4. A Person shall not be deemed to have violated this Rule 9.1I if the Person refuses an attempted communication concerning the merits of a proceeding as soon as it becomes apparent that the communication concerns the merits.

Rule 9.2 Investigations

A. The Compliance Department will endeavor to complete any investigation within 12 months of the time unusual trading activity or a potential Rule violation is suspected, unless there exists significant reason to extend the investigation beyond such period. Upon the conclusion of any investigation, the Compliance Department shall draft a report detailing the facts that led to the opening of the investigation, the facts that were found during the investigation, and the Compliance Department's analysis and conclusion. Such internal report shall be maintained in accordance with Rule 2.14.

B. The Compliance Department has the authority to:

1. initiate and conduct inquiries and investigations;

2. examine books and records of any Person subject to the Company's jurisdiction under Rule 3.1;

3. prepare investigative reports and make recommendations concerning initiating disciplinary proceedings;

4. issue a Notice of Charges to a Respondent;

5. prosecute alleged violations within the Company's disciplinary jurisdiction; and

6. represent the Company on appeal from any disciplinary proceeding, summary imposition of fines, summary suspension or other summary action.

C. Each Person subject to the jurisdiction of the Company:

1. is obligated to appear and testify and respond in writing to interrogatories within the time period required by the Compliance Department in connection with:

a. any Rule;
b. any inquiry or investigation; or
c. any preparation by and presentation during a Disciplinary Action;

2. is obligated to produce books, records, papers, documents or other tangible evidence in its possession, custody or control within the time period required by the Compliance Department in connection with:

a. any Rule;
b. any inquiry or investigation; or
c. any preparation by and presentation during a Disciplinary Action; and

3. may not impede or delay any Disciplinary Action.

Rule 9.3 Disciplinary Panel

A. The Respondent disputes the Compliance Department's findings with respect to a Disciplinary Action, the Company shall convene the Disciplinary Panel to adjudicate the findings by the Compliance Department that are under dispute. The Chief Compliance Officer or an individual designated by the Chief Compliance Officer may be appointed to argue the matter on behalf of the Company.

1. Members of the Disciplinary Panel shall be individuals that do not have a direct interest (financial, personal or otherwise) in the matter, but in no event

may be members of the Compliance Department or any Persons involved in adjudicating any other stage of the same proceeding.

2. In the event that members of the Disciplinary Panel do not satisfy the requirements of this Rule 9.3A.2, then the Regulatory Oversight Committee may substitute a new member for the Disciplinary Panel or act as the Disciplinary Panel, to the extent that the substituted member or the Regulatory Oversight Committee, as the case may be, does not have a direct interest (financial, personal or otherwise) in the matter.

B. Members of the Disciplinary Panel and the Compliance Department may not communicate regarding the merits of a matter brought before the Disciplinary Panel without informing the Respondent who is the subject of the communication of the substance of such communication and allowing the Respondent an opportunity to respond. The Compliance Department may compel testimony, subpoena documents, and require statements under oath from any Respondent or, to the extent the Respondent is a Participant, any of its Authorized Users, Authorized Representatives or other employees or agents.

C. The Compliance Department and other Company Representatives working under the supervision of the Compliance Department may not operate under the direction or control of any Participant, Authorized User, Authorized Representative or any other representative of a Participant, or trade, directly or indirectly, in any commodity interest traded on or subject to the rules of any Designated Contract Market or Swap Execution Facility.

Rule 9.4 Notice of Charges

A. The Compliance Department shall issue a Notice of Charges to a Respondent by electronic mail and the U.S. Postal Service to that Respondent's last known address if the Compliance Department determines that there is reasonable cause to believe that a Respondent has violated these Rules or Applicable Law. The Notice of Charges shall include:

1. the reason the investigation was initiated;
2. the Rule or Rules alleged to have been violated;
3. the Respondent's response, if any, or a summary of the response;
4. a summary of the investigation conducted;
5. findings of fact and the Compliance Department's conclusions as to each charge, including which of these Rules the Respondent violated, if any;
6. a summary of the Respondent's, and any relevant Authorized User's or Authorized Representative's, disciplinary history, if any;
7. the penalty, if any, proposed by the Compliance Department; and
8. the Respondent's right to a hearing.

B. If the Compliance Department institutes an investigation of any Affiliate of the Company, the Chief Compliance Officer shall notify the Commission's Division of Market Oversight, or its successor division, of that fact. At the conclusion of any such investigation, the Chief Compliance Officer shall provide the Commission's Division of Market Oversight, or its successor division, with a copy of the report or other documentation specified in Rule 9.2.

Rule 9.5 Contesting and Appeals

A. The Respondent subject to the investigation may contest the Notice of Charges by submitting an answer to the Notice of Charges by electronic mail to the Compliance Department within 15 days of receipt of the Notice of Charges. The Respondent's answer must contain a detailed response to the findings and conclusions as to each charge and any other information the Respondent believes is relevant.

B. The Respondent has a right to examine all relevant books, documents, or other evidence in the possession or under the control of the Compliance Department, except that the Compliance Department may withhold from inspection any documents that:

1. are privileged or that constitute attorney work product;
2. were prepared by any Company Representative but which will not be offered in evidence in the disciplinary proceedings;
3. may disclose a technique or guideline used in examinations, investigations, or enforcement proceedings; or
4. disclose the identity of a confidential source.

C. If the Respondent fails to answer a Notice of Charges, then such failure shall be deemed an admission to the findings in the Notice of Charges, and the Compliance Department's findings and conclusions shall become final and the Compliance Department shall impose the penalty (if any) that it proposes. The Compliance De-

partment shall notify the Respondent of the imposition of any penalty and send a copy of the Notice of Charges by electronic mail and the U.S. Postal Service to that Respondent's last known address.

D. If the findings of the Compliance Department are contested, the Compliance Department's report and the Respondent's response will be submitted to a Disciplinary Panel.

E. The Disciplinary Panel will conduct a fair hearing with the Compliance Department or other Company Representative and the Respondent within 15 calendar days of receipt of the Participant's answer to the Notice of Charges contesting such Notice of Charges. Parties may attend telephonically. The formal rules of evidence shall not apply, but the hearing procedures must not deny a fair hearing.

1. The hearing shall be recorded, and all information submitted by the parties and the recording of the hearing shall be preserved by the Compliance Department, along with the Disciplinary Panel's findings, as the record of the proceedings (the "hearing record") in accordance with Rule 2.14.

2. The hearing record shall be transcribed if requested by the Commission or Respondent, if the decision is appealed pursuant to these Rules, or if the Commission reviews the decision pursuant to Section 8c of the CEA or Part 9 of CFTC Regulations.

F. Prior to the Disciplinary Panel's hearing, the parties may (but need not) submit proposed findings, briefs, and exhibits (including affidavits), and during the hearing the parties may present witnesses. The Respondent is entitled to cross-examine witnesses. Persons within the Company's jurisdiction who are called as witnesses must participate in the hearing and produce evidence. The Compliance Department shall use reasonable efforts to secure the presence of all other witnesses whose testimony would be relevant.

G. Within 15 days after the Disciplinary Panel's hearing, the Disciplinary Panel shall issue a decision, which shall be delivered to the Respondent by electronic mail and the U.S. Postal Service to the Respondent's last known address. The findings of the Disciplinary Panel shall contain the following information:

1. the Notice of Charges or a summary thereof, and any answer to the charges or a summary thereof;

2. a summary of the evidence received;

3. findings and conclusions with respect to each charge, and a complete explanation of the evidence and other basis for such findings and conclusions;

4. an indication of each specific rule that the Respondent was found to have violated;

5. a declaration of any penalty to be imposed on the Respondent as the result of the findings and conclusions, including the basis for such penalty;

6. the effective date and duration of that penalty; and

7. a statement that the Respondent has the right to appeal any adverse decision by the Disciplinary Panel to the Appeals Committee within 15 calendar days of receipt of the Disciplinary Panel's decision.

H. The Disciplinary Panel's decision shall be final on the date it is signed by the members of the Disciplinary Panel, the finality of which shall be effective on the day after the last day of the appeal period.

I. Either the Participant or the Compliance Department or the Company Representative may appeal the decision of the Disciplinary Panel within 15 calendar days by filing an appeal by electronic mail with the Appeals Committee and forwarding a copy to the other parties to the appeal. The Appeals Committee may review a decision on its own initiative. Any penalties shall be stayed pending appeal unless the Regulatory Oversight Committee determines that a stay pending appeal would likely be detrimental to the Company, other Participants, or the public. The Appeals Committee shall review the hearing record and any information submitted by the Compliance Department or the Company Representative and the Respondent on appeal and issue a decision, which shall be final on the date of such issuance. The Respondent shall be notified of the Appeals Committee's decision by electronic mail and by the U.S. Postal Service to the Respondent's last known address. The hearing record, any information submitted on appeal, and the Appeals Committee's decision shall be preserved as the record on appeal in accordance with Rule 2.14. The decision shall contain the information listed in Rule 9.5 except for 9.5(G)(7), and will also contain:

1. a statement that any Person aggrieved by the action may have a right to appeal the action pursuant to Part 9 of the Commission's Regulations, within 30 calendar days of service; and

2. a statement that any Person aggrieved by the action may petition the Commission for a stay pursuant to Part 9 of the Commission's Regulations, within 10 calendar days of service.

Rule 9.6 Settlements

A. The Company may enter into settlements with any Respondent any time following the issuance of a Notice of Charges and prior to any final decision by the Appeals Committee. The Respondent may initiate a settlement offer. Any settlement offer shall be forwarded to the Disciplinary Panel with a recommendation by the Compliance Department that the proposed settlement be accepted, rejected, or modified. A settlement offer may be withdrawn at any time before it is accepted by the Disciplinary Panel.

B. The Disciplinary Panel may accept or reject a proposed settlement, and the decision of the Disciplinary Panel shall be final. In addition, the Disciplinary Panel may propose a modification to the proposed settlement for consideration by the Respondent and the Compliance Department.

C. Any settlement under this Rule shall be in writing and shall state:

1. the Notice of Charges or a summary thereof;
2. the Respondent's answer, if any, or a summary thereof;
3. a summary of the investigation conducted;
4. findings and conclusions as to each charge, including each act the Respondent was found to have committed or omitted, be committing or omitting, or be about to commit or omit, and each of these Rules or Applicable Law that such act or practice violated, is violating, or is about to violate;
5. any penalty imposed and the penalty's effective date; and
6. where customer harm is found to exist, full customer restitution where it can be reasonably determined.

D. Failed settlement negotiations, or withdrawn settlement offers, will not prejudice a Respondent or otherwise affect subsequent procedures in the Rule enforcement process.

Rule 9.7 Notice of Decision

A. The Compliance Department shall provide to the Respondent notice of the Disciplinary Action, decision of the Disciplinary Panel or Appeals Committee, or settlement in which sanctions are imposed, no later than two Settlement Bank Business Days after it becomes final.

B. The Compliance Department shall provide to the NFA for inclusion in its Internet-accessible database of disciplinary matters within two Settlement Bank Business Days after a decision becomes final, notice of any decision providing that a Respondent is suspended, expelled, disciplined or denied access to the Company.

C. The Compliance Department shall make public notice of the Disciplinary Action when the Disciplinary Action becomes final by posting on its Website the information required by CFTC Regulation 9.11, for a period of 5 consecutive Settlement Bank Business Days in accordance with CFTC Regulation 9.13.

Rule 9.8 Penalties

As a result of a Disciplinary Action or as part of a settlement, the Compliance Department may impose one or more of the following penalties, commensurate with the violation committed, in consideration with the Respondent's disciplinary history, and including full customer restitution where customer harm is found and where such restitution can be reasonably determined:

A. a letter of warning, censure, or reprimand (although no more than one such letter may be issued to the same Person found to have committed the same Rule violation within a rolling 12 month period);

B. a fine or penalty for each Rule or Applicable Law violation sufficient to deter recidivism plus the monetary value of any benefit received as a result of the violation or the cost of damages to the unoffending counterparty;

C. suspension of Participant or Authorized User status or privileges for a specified period, including partial suspension of such privileges (for example, suspension of Trading Privileges or Clearing Privileges in particular types of Company Contracts or of placement of certain types of orders);

D. a prohibition against FCM Participants and/or Executing Participants from entering Transactions on behalf of a Customer who has violated these Rules, the CEA or CFTC Regulation or other Applicable Law; and

E. revocation of Participant or Authorized User status or privileges, including partial revocation of such privileges (for example, revocation of Trading Privi-

leges or Clearing Privileges in particular types of Company Contracts or of placement of certain types of orders).

Rule 9.9 Summary Suspension

A. The Compliance Department may summarily suspend or restrict a Participant's or an Authorized User's privileges if the Chief Compliance Officer believes suspension or restriction is necessary to protect the swaps, commodity futures or options markets, the Company, the public, or other Participants.

B. All access denials, suspensions, expulsions and other restrictions imposed upon a Participant or Authorized User by the Compliance Department pursuant to these Rules shall restrict with equal force and effect, access to, and use of, the Company.

C. The Compliance Department may deny or terminate the status of a Participant, including an FCM Participant, Executing Participant or Liquidity Provider, and any Authorized User if (i) such Person is unable to demonstrate its ability to satisfy the applicable criteria set forth in Chapter 3 of these Rules; (ii) such Person is unable to demonstrate its compliance with all other applicable Rules; (iii) such Person's inability to demonstrate compliance with such criteria or Rules would, in the Company's sole discretion, bring the Company into disrepute or cause the Company to fail to be in compliance with the CEA or CFTC Regulations or other laws and regulations; (iv) such Person or any of its Authorized Users, as applicable, has committed a violation of the Rules; or (v) other good cause is shown as the Company may reasonably determine in its discretion.

D. Upon any suspension or revocation of an FCM Participant, any open Order on the Platform for such FCM Participant's Customer(s) shall be canceled by the Company.

E. Whenever practicable the Compliance Department shall notify the Participant or Authorized User whose privileges are to be summarily suspended by electronic mail before the action is taken. If prior notice is not practicable, the Participant or Authorized User shall be served with notice by electronic mail at the earliest opportunity. This notice shall:

1. state the action taken or to be taken;
2. briefly state the reasons for the action;
3. state the time and date when the action became or becomes effective and its duration; and
4. state that any Person aggrieved by the action may petition the Commission for a stay of the effective date of the action pending a hearing pursuant to Part 9 of CFTC Regulations, within 10 calendar days of service.

F. The Participant or Authorized User whose privileges are to be summarily suspended shall be given an opportunity for appeal under the procedures outlined inRule 9.5I. The decision affirming, modifying, or reversing the summary suspension shall be furnished by electronic mail to the suspended Participant or Authorized User, and to the Commission no later than one Settlement Bank Business Day after it is issued. The decision shall contain:

1. a description of the action taken and the reasons for the action;
2. a brief summary of the evidence received during the appeal process;
3. findings and conclusions;
4. a determination as to whether the summary action that was taken should be affirmed, modified, or reversed;
5. a declaration of any action to be taken against the suspended Participant or Authorized User as the result of that determination;
6. the effective date and duration of that action;
7. a determination of the appropriate relief based on the findings and conclusions;
8. a statement that any Person aggrieved by the action may have a right to appeal the action pursuant to Part 9 of the Commission's Regulations, within 30 calendar days of service; and
9. a statement that any Person aggrieved by the action may petition the Commission for a stay pursuant to Part 9 of the Commission's Regulations, within 10 calendar days of service.

Rule 9.10 Reporting Violations to the Commission

A. Whenever the Company suspends, expels, fines or otherwise disciplines or denies any Person access to the Platform, the Company will make the disclosures required by Commission Regulations. Without limiting the generality of the foregoing, upon rendering a final decision regarding a disciplinary or access denial action, the Company shall provide notice to the Commission by filing with NFA's BASIC.

B. The Company will submit to the Commission a schedule listing all those Company Rule violations which constitute disciplinary offenses as defined in paragraph (a)(6)(i) of CFTC Regulation 1.63 and, to the extent necessary to reflect revisions, will submit an amended schedule within thirty days of the end of each calendar year. The Company will maintain the schedule required by this section, and post the schedule on the Company's website.

C. The Company will submit to the Commission within thirty days of the end of each calendar year a certified list of any Participants or Persons who have been removed from any Disciplinary Panel, the Board or any Company committee pursuant to these Rule or Applicable Law during the prior year.

D. Whenever the Company finds by final decision that a Participant or Person has violated a Rule or otherwise committed a disciplinary offense and such finding makes such person ineligible to serve on the Company's Disciplinary Panels, Company committees, or the Board, the Company shall inform the Commission of such finding and the length of the ineligibility in a notice it is required to provide to the Commission pursuant to either CEA Section 17(h)(1) or CFTC Regulation 9.11.

Chapter 10 **Arbitration**

Rule 10.1 In General

A. If so elected by a Customer, any Claim by the Customer against a Participant (including any related counterclaims) shall be settled by arbitration in accordance with this Chapter 10.

B. Any Claim by a Participant against another Participant (including any related counterclaims) shall be settled by arbitration in accordance with this Chapter 10. Arbitration proceedings invoked pursuant to this paragraph shall be independent of, and shall not interfere with or delay the resolution of Customers' Claims submitted for arbitration pursuant to paragraph A.

C. Notwithstanding paragraph B, the arbitration panel, in its sole and absolute discretion, may decline to take jurisdiction of, or, having taken jurisdiction may at any time decline to proceed further with, any Claim or any other dispute, controversy or counterclaim, other than such as may be asserted under paragraph A.

D. A Claim brought pursuant to this Rule 10.1 shall be adjudicated by qualified arbitrators appointed in accordance with Rule 10.5 below.

E. Persons to a dispute resolved in accordance with this Chapter 10 shall have the right to retain and be represented by legal counsel or any other representation of its choosing, except any Director or a member of the Disciplinary Panel or person substantially related to the underlying investigations, such as material witnesses or respondents during such proceedings. Persons to a dispute resolved in accordance with this Chapter 10 shall be responsible for their own costs, expenses and attorneys' fees incurred in connection with the dispute. Notwithstanding the foregoing, the Person that prevails shall be entitled to recover from the other party all costs, expenses and reasonable attorneys' fees incurred in any arbitration arising out of or relating to this Chapter 10, and in any legal action or administrative proceeding to enforce any arbitration award or relief.

F. Any award or relief granted by the arbitrators hereunder shall be final and binding on the parties hereto and may be enforced by any court of competent jurisdiction.

G. Notwithstanding the foregoing, this Chapter 10 does not apply to disputes between Participants where:

1. such Persons are required by the rules of a non-Company Self-Regulatory Organization to submit to the dispute resolution procedures of that Self-Regulatory Organization; or

2. such Persons have, by valid and binding agreement, committed to arbitrate or litigate in a forum other than the Company.

H. For purposes of this Chapter 10, the term "Claim" means any dispute which arises out of any Transaction, which dispute does not require for adjudication the presence of essential witnesses or third parties over whom the Company does not have jurisdiction or who are otherwise not available. The term "Claim" does not include disputes arising from underlying commodity transactions which are not a part of, or directly connected with, any Transaction.

Rule 10.2 Fair and Equitable Arbitration Procedures

A. A Person desiring to initiate an arbitration as provided in Rule 10.1 shall file a notice of arbitration (a "Notice") within two years from the time the Claim arose. The Notice must set forth the name and address of the party or parties against whom the Claim is being asserted, the nature and substance of the Claim, the relief requested and the factual and legal bases alleged to underlie such relief.

B. The Notice shall be accompanied by a non-refundable check payable to the Company in payment of the arbitration fee. The amount of the fee shall be (i) $500 for a Claim requesting relief totaling less than $25,000 in the aggregate or (ii) $1,000 for a Claim requesting relief totaling $25,000 or more in the aggregate.

C. Upon receipt, the Company shall promptly convene an arbitration panel in accordance with Rule 10.5. The Company shall deliver a copy of the Notice to each other party and to the arbitration panel.

D. Within 20 days following the delivery of the Notice, each respondent shall file a written response (a "Response") with the Company, with a copy to the claimant, setting forth its or his position and any counterclaims, as applicable. If the Response sets forth one or more counterclaims, the claimant shall file within 20 days a written reply to such counterclaims with the Company, with a copy to the claimant.

E. Once each party has had an opportunity to respond to the Claim and all counterclaims, the arbitration panel shall promptly schedule a hearing. Notwithstanding, Claims requesting relief totaling less than $5,000 in the aggregate may, in the interests of efficiency and economy, be resolved without hearing.

F. The chairman of the arbitration panel shall preside over the hearing and shall make such determinations on the relevancy and procedure as will promote a fair and expeditious adjudication.

G. The arbitration panel shall consider all relevant, probative testimony and documents submitted by the parties. The arbitration panel shall not be bound by the formal rules of evidence.

H. The final decision of the panel shall be by majority vote of the arbitrators, as applicable.

I. Within 60 days after the termination of the hearing, the arbitration panel shall render its final decision in writing and deliver a copy thereof either in person or by first-class mail to each of the parties. The arbitration panel may grant any remedy or relief which it deems just and equitable, including, without limitation, the awarding of interest and the arbitration fee.

J. The final decision of the arbitration panel shall not be subject to appeal within the Company.

K. No verbatim record shall be made of the proceedings, unless requested by a party who shall bear the cost of such record.

Rule 10.3 Withdrawal of Arbitration Claim

Any Notice may be withdrawn at any time before the Response is filed in accordance with this Chapter 10. If a Response has been filed, any withdrawal shall require consent of the party against which the Claim is asserted.

Rule 10.4 Penalties

A. Any failure on the part of a Person to arbitrate a dispute subject to this Chapter 10, or the commencement by any such Person of a suit in any court prior to arbitrating a case that is required to be arbitrated pursuant to this Chapter 10, violates these Rules and shall subject such Person to disciplinary proceedings pursuant to Chapter 9. Any Person that does not arbitrate a dispute pursuant to Rule 10.1G shall not be deemed to have violated these Rules.

B. The Chief Compliance Officer, in consultation with the Regulatory Oversight Committee, may summarily suspend, pursuant to Rule 9.9, a Participant that fails to timely satisfy an arbitration award rendered in any arbitration pursuant to this Chapter 10.

Rule 10.5 Arbitration Panel

A. On an as-needed basis, the Company shall convene an arbitration panel to adjudicate an arbitration claim under this Chapter 10. For a Claim requesting relief totaling less than $25,000 in the aggregate, the arbitration panel shall consist of one individual. For a Claim requesting relief totaling $25,000 or more in the aggregate, the arbitration panel shall consist of three individuals.

B. Members of the arbitration panel shall be individuals that do not have a direct interest (financial, personal or otherwise) in the matter.

C. Any member of the arbitration panel may disqualify himself for any reason he deems appropriate.

D. Each member of the arbitration panel shall conduct himself in a manner consistent with the American Bar Association/American Arbitration Association's "Code of Ethics for Arbitrators in Commercial Disputes," which the Company hereby adopts as its own code of ethics for arbitrators.

E. Each member of the arbitration panel must have no less than 5 years' experience in the financial services industry, and no less than one arbitrator must have no less than 5 years' experience in the commodity futures or swap industry.

F. In the event that members of the arbitration panel do not satisfy the requirements of this Rule 10.5, then the Regulatory Oversight Committee may substitute a new member for the arbitration panel or act as the arbitration panel, to the extent that the substituted member or the Regulatory Oversight Committee, as the case may be, does not have a direct interest (financial, personal or otherwise) in the matter.

Chapter 11 **Miscellaneous**

Rule 11.1 Adjustments Necessitated by Material Changes in the Underlying

In the event that, prior to or during the term of a Series, changes beyond the control of the Company occur in the availability of the Underlying or in the way the Underlying is calculated, or a value for the Underlying is unavailable or undefined in light of intervening events, the Company may delay listing Series or adjust the terms of outstanding Series as it deems appropriate in its discretion to achieve fairness to holders of Company Contracts of the affected Series.

Rule 11.2 Prohibition on Trading by Company Personnel; Misuse of Material, Non-Public Information

A. Terms used in this Rule 11.2 and not otherwise defined in these Rules shall have the meanings set forth in CFTC Regulations 1.3 and 1.59.

B. Company Personnel may not trade, directly or indirectly any Company Contract or any related financial instrument.

C. Company Representatives may not trade, directly or indirectly any Company Contract or financial instrument where such Company Representative has access to material, non-public information concerning such Company Contract or financial instrument.

D. The Chief Compliance Officer (or, in the case of the Chief Compliance Officer, the Board) may grant exemptions in accordance with the provisions of this Rule 11.2 to Company Personnel on a case-by-case basis under circumstances where the Company Personnel is participating in pooled investment vehicles and the Company Personnel has no direct or indirect control over Transactions effected by or for the account of the pool.

E. For the avoidance of doubt, participation by Company Personnel in a retirement plan sponsored by the Company shall not be deemed to constitute trading directly or indirectly in a Company Contract or financial instrument, notwithstanding such plan's trading of Company Contracts or financial instruments.

F. Any exempt Company Personnel that has received an exemption under Rule 11.2D must:

1. furnish to the Company (or, in the case of the Chief Compliance Officer, to the Board) account statements and other documents relevant to the trading activities that are so exempted; and

2. inform the Chief Compliance Officer (or, in the case of the Chief Compliance Officer, the Board) within one Settlement Bank Business Day of any material change of information that may affect such Company Personnel's qualification for such exemption.

G. Company Representatives are prohibited from disclosing material, non-public information obtained as a result of their employment, agency relationship or engagement with the Company for any purpose inconsistent with such Person's duties or responsibilities as an employee, agent, independent contractor, Director or Committee member.

Rule 11.3 Property Rights

A. Each Participant on behalf of itself and each of its Affiliates, Authorized Users and other Persons affiliated with any of the foregoing, hereby acknowledges and agrees that LedgerX LLC owns and shall retain all right, title and interest in and to the Company, all components thereof, including, without limitation, all related applications, all application programming interfaces, user interface designs, software and source code and any and all intellectual property rights therein, including, without limitation, all registered or unregistered, as applicable, (a) copyright, (b) trademark, (c) service mark, (d) trade secret, (e) trade name, (f) data or database rights, (g) design rights, (h) moral rights, (i) inventions, whether or not capable of protection by patent or registration, (j) rights in commercial information or technical information, including know-how, research and development data and manufacturing methods, (k) patent, and (l) other intellectual property and ownership rights, including applications for the grant of any of the same, in or to LedgerX LLC and all other related proprietary rights of LedgerX LLC and/or any of its Affiliates (together, with any and all enhancements, corrections, bug fixes, updates and other

modifications to any of the foregoing and any and all data or information of any kind, other than Proprietary Data and Personal Information, transmitted by means of any of the foregoing, including, without limitation, market data, the "Proprietary Information"). Each Participant on behalf of itself and each of its Affiliates, Authorized Users and other Persons affiliated with any of the foregoing, further acknowledges and agrees that the Proprietary Information is the exclusive, valuable and confidential property of LedgerX LLC. Each Participant acknowledges and agrees that it shall not and shall not permit its Affiliates, Authorized Users and other Persons affiliated with any of the foregoing to reverse engineer, copy, bug fix, correct, update, transfer, reproduce, republish, broadcast, create derivative works based on or otherwise modify, in any manner, all or any part of the Company or the Proprietary Information. Each Participant further agrees to and to cause each of its Affiliates, Authorized Users and other Persons affiliated with any of the foregoing to keep the Proprietary Information confidential and not to transfer, rent, lease, copy, loan, sell or distribute, directly or indirectly, all or any portion of the Company or any Proprietary Information.

B. Subject to the provisions of this Rule 11.3, each Participant on behalf of itself and each of its Affiliates, Authorized Users, and other Persons affiliated with any of the foregoing hereby acknowledges and agrees that LedgerX LLC is the owner of all rights, title and interest in and to all intellectual property and other proprietary rights (including all copyright, patent, trademark or trade secret rights) in market data, and all derivative works based thereon, and further agree not to distribute, create derivative works based on, or otherwise use or commercially exploit market data and any such derivative works, provided that Participants, Affiliates, Authorized Users, and such other Persons may use market data for their own internal business purposes. Without limiting the generality of the foregoing, Participants, Affiliates, Authorized Users, and other Persons affiliated with any of the foregoing may not distribute, sell or retransmit market data exchange to any third party.

C. Notwithstanding any other provision of this Rule 11.3, each Participant and Authorized User retains such rights as it may enjoy under applicable law with respect to market data solely in the form such market data was submitted to the Company by such Participant or Authorized User.

D. Transaction Data shall not be disclosed publicly other than on an aggregated or anonymous basis, or in a manner that does not directly or indirectly identify any market participant who has submitted such data.

E. LedgerX LLC shall not condition access to the Company upon a Participant's consent to the use of Proprietary Data and Personal Information for business or marketing purposes. Proprietary Data and Personal Information may not be used by the Company for business and marketing purposes unless the market participant has clearly consented to the use of Proprietary Data and Personal Information in such manner. LedgerX LLC, where necessary, for regulatory purposes, may share Proprietary Data and Personal Information with one or more Designated Contract Markets or Swap Execution Facilities. Nothing in this Rule shall preclude LedgerX LLC from disclosing Proprietary Data and Personal Information: (1) as required by Applicable Law or legal process; (2) as the Company may deem necessary or appropriate in connection with any litigation affecting the Company; (3) to any Company Representative authorized to receive such information within the scope of his or her duties; (4) to a third party performing regulatory or operational services for the Company, provided that such party has executed a confidentiality and non-disclosure agreement in a form approved by the Company; (5) to a duly authorized representative of the CFTC lawfully requesting Proprietary Data and Personal Information; (6) in a manner in which a market participant consents to such disclosure; (7) pursuant to the terms of an information-sharing agreement; or (8) as permitted by CFTC Regulations.

Rule 11.4 Signatures

Rather than rely on an original signature, the Company may elect to rely on a signature that is transmitted, recorded or stored by any electronic, optical, or similar means (including but not limited to telecopy, imaging, photocopying, electronic mail, electronic data interchange, telegram, or telex) as if it were (and the signature shall be considered and have the same effect as) a valid and binding original.

Rule 11.5 Governing Law

The Rules, and the rights and Obligations of the Company and Participants under the Rules, shall be governed by, and construed in accordance with, the laws of the State of New York without regard to any provisions of New York law that would apply the substantive law of a different jurisdiction. The State of New York is the

"securities intermediary's jurisdiction" within the meaning of Section 8–110(e) of the UCC for all purposes of the UCC.

Rule 11.6 Legal Proceedings

A. Any action, suit or proceeding against the Company, its Officers, Directors, limited liability company members, employees, agents, or any member of any committee must be brought within one year from the time that a cause of action has accrued. Any such action, suit or proceeding shall be brought in the state or Federal courts located within the City of New York, New York. Each Participant and Authorized User expressly consents to the jurisdiction of any such court, waives any objection to venue therein, and waives any right it may have to a trial by jury.

B. In the event that a Participant or Authorized User or an Affiliate of such Person who fails to prevail in a lawsuit or other legal proceeding instituted by such Participant or such Affiliate against (i) the Company or (ii) any Affiliate of the Company or any of its respective officers, directors, equity holders, employees, agents, or any member of any committee, and related to the business of the Company, such Participant or Authorized User shall pay to the Company all reasonable costs and expenses, including attorneys' fees, incurred by the Company in the defense of such proceeding. This Rule 11.7 shall not apply to Company disciplinary actions, appeals thereof, or an instance in which the Board has granted a waiver of the provisions hereof.

C. The Company will provide to the Commission copies of documents pertaining to Company-related pending legal proceedings as required under CFTC Regulation 1.60.

Rule 11.7 **Limitation of Liability; No Warranties**

A. **Except as otherwise set forth in the rules, or due to company obligations arising from the act or CFTC regulations, including parts 37, 38 and 39 of the CFTC regulations, or otherwise under applicable law, neither the company nor any of its company representatives, affiliates or affiliates' representatives shall be liable to any person, or any partner, director, officer, agent, employee, authorized user or authorized representative thereof, for any loss, damage, injury, delay, cost, expense, or other liability or claim, whether in contract, tort or restitution, or under any other cause of action, suffered by or made against them as a result of their use of some or all of the platform and by making use of the platform, such persons expressly agree to accept all liability arising from their use of same.**

B. **Except as otherwise set forth in these rules or due to company obligations arising from the act or CFTC regulations, including parts 37, 38 and 39 of the CFTC regulations, or otherwise under applicable law, neither the company nor any of its company representatives, affiliates or affiliates' representatives shall be liable to any person, or any partner, director, officer, agent, employee, authorized user or authorized representative thereof, for any loss, damage, injury, delay, cost, expense, or other liability or claim, whether in contract, tort or restitution, or under any other cause of action, suffered by or made against them, arising from (a) any failure or non-availability of the platform; (b) any act or omission on the part of the company, company representatives, affiliates or affiliates' representatives including without limitation a decision of the company to suspend, halt, or terminate trading or to void, nullify or cancel orders or trades in whole or in part; (c) any errors or inaccuracies in information provided by the company, affiliates or the platform; (d) unauthorized access to or unauthorized use of the platform by any person; (e) any force majeure event, including, but not limited to, the unavailability of the blockchain as reasonably determined by the company, affecting the company or a company contract; or (f) any loss to any participant resulting from a participant's own security or the integrity of a participant's technology or technology systems. This limitation of liability will apply regardless of whether or not the company, any company representatives, any company affiliates or affiliates' representatives (or any designee thereof) was advised of or otherwise might have anticipated the possibility of such damages.**

C. **A person's use of the platform, company property and any other information and materials provided by the company is at the person's own risk, and the platform, the company property and any other information and materials provided by the company hereunder are provided on an "as is" and "as available" basis, without warranties or representations of any kind, express or implied, by statute, common law or otherwise, including all implied warranties of merchantability, fitness for a particular purpose and**

non-infringement, and any warranties arising from a course of dealing, usage or trade practice. The company does not guarantee that (a) the company property or the platform will operate in an error-free, secure or uninterrupted manner; (b) any information or materials provided by the company or accessible through the company property or the platform will be accurate, complete, reliable, or timely; or (c) the company property or any aspects of the platform will be free from viruses or other harmful components. The company shall have no liability for the creditworthiness of any person or for the acts or omissions of any person utilizing the platform or any aspect of the company or platform. A person accessing the company is solely responsible for the security and integrity of the person's technology. A person's access to the company may be internet-based and the company has no control over the internet or a person's connections thereto. Any person accessing the company acknowledges that the internet, computer networks, and communications links and devices necessary to enable a person to access and use the platform are inherently insecure and vulnerable to attempts at unauthorized entry and that no form of protection can ensure that a participant's data, hardware, or software or the platform or other company property will be fully secure. Furthermore, the company shall have no obligation to monitor or verify any information displayed through the platform.

D. **A participant that deposits collateral for its benefit with the company pursuant to these rules shall hold the company harmless from all liability, losses and damages which may result from or arise with respect to the care and sale of such collateral provided that the company has acted reasonably and in accordance with applicable law under the circumstances. Furthermore, the company has no responsibility for any act or omission of any third party service provider that the company has chosen with reasonable care. The company has no responsibility or liability for any loss of collateral that results, directly or indirectly, from a breach to a participant's security or electronic systems, including but not limited to cyber attacks, or from a participant's negligence with respect to a wallet, address or the receipt of collateral upon the request of a withdrawal, or from a participant's deposit, mistake, error, negligence, or misconduct with respect to any collateral transfers a participant makes or attempts to make to the company.**

E. **No participant, authorized user, authorized representative or any other person shall be entitled to commence or carry on any proceeding against the company, any of its company representatives, affiliates or affiliates' representatives, in respect of any act, omission, penalty or remedy imposed pursuant to the rules of the company. This section shall not restrict the right of such persons to apply for a review of a direction, order or decision of the company by a competent regulatory authority.**

F. **notwithstanding anything to the contrary herein, in no event shall the company or any of its company representatives, affiliates or affiliates' representatives be liable for any indirect, incidental, consequential, punitive or special damages (whether or not the company or any such person had been informed or notified or was aware of the possibility of such damages).**

G. **Any claim for redress or damages hereunder shall be filed in a court of competent jurisdiction within one year of the date on which such claim allegedly arose. Failure to institute litigation within such time period shall be deemed to be a waiver of such claim and the claim shall be of no further force or effect. The allocations of liability in this *Rule 11.7* represent the agreed and bargained for understanding of the parties, and each party acknowledges that the other party's rights and obligations hereunder reflect such allocations. The parties agree that they will not allege that this remedy fails its essential purpose.**

H. **The limitations on liability in this *Rule 11.7* shall not protect any party for which there has been a final determination (including exhaustion of any appeals) by a court or arbitrator to have engaged in willful or wanton misconduct or fraud. Additionally, the foregoing limitations on liability of this rule shall be subject to the CEA and the regulations promulgated thereunder, each as in effect from time to time.**

Rule 11.8 Error Trade Policy

The Company shall have the discretion to delete Orders, adjust prices, cancel trades or suspend the market in the interest of maintaining a fair and orderly market, in accordance with this Rule 11.8.

A. In normal circumstances, the Company will only adjust prices or cancel trades on the basis that the price traded is not representative of market value. The Company will make the final decision on whether a trade price is adjusted, or a trade is canceled or is allowed to stand. In determining whether a trade has taken place at an unrepresentative price, certain factors will be taken into account. They may include, but not be limited to:

1. price movements in other expiration months of the same Company Contract;
2. current market conditions, including levels of activity and volatility;
3. time period between different quotes and between quoted and traded prices;
4. information regarding price movement in related contracts, the release of economic data or other relevant news just before or during electronic Trading Hours, as applicable;
5. manifest error;
6. whether there is any indication that the trade in question triggered stops or resulted in the execution of spread trades;
7. whether another market user or client relied on the price;
8. whether a transaction cancellation or price adjustment will adversely impact market integrity, facilitate market manipulation or other illegitimate activity, or otherwise violate applicable rules or regulations;
9. whether any Participants to the trade in question request that any action be taken; and
10. any other factor which the Company, in its sole discretion, may deem relevant.

B. The Company, when applicable, may establish price and/or volume reasonability levels ("Reasonability Levels") within the system for each Company Contract. The Company may also establish alert levels ("Alert Levels") as applicable, beyond which the Company will send an alert ("Alert") to the relevant Participants via the Participant Portal or API. These Reasonability Levels and Alert Levels necessarily are flexible to take account of prevailing market conditions. The Company incorporates Reasonability Levels in determining Alert Levels for issuing Alerts for items such as "fat finger" type errors. Reasonability Levels and Alert Levels are set by the Company and may be varied from time to time according to market conditions. The Company will notify Participants of any modifications to the Reasonability Levels. Upon receipt of any Alert, Participant can choose whether or not to proceed with entry and execution of the applicable Order. If the applicable Participants approve the volume and/or price following receipt of the Alert, the Company will attempt to execute the Order and the trade will be finalized.

C. Any trade executed at a price outside of the No Cancellation Range (as defined below), if identified to the Company within the designated time period, may be considered an alleged error trade.

D. The Reasonability Levels applicable to each Company Contract will be listed on the Company's website.

E. Any trade which is alleged to be an error trade and subsequently is canceled due to the determination that it has been executed at an unrepresentative price may be investigated by the Company.

F. There is a defined "no cancellation range" ("No Cancellation Range") for each Company Contract. Trades executed within this price range will not be canceled or price adjusted. A component of market integrity is the assurance that once executed, except in exceptional circumstances, a trade will stand and not be subject to cancellation or price adjustment. Any trades that do not have an adverse effect on the market should not be able to be canceled or price adjusted, even if executed in error.

G. In applying the No Cancellation Range, the Company shall determine the fair market price for the Company Contract. The Company may consider any relevant information including, but not limited to, the bid, the ask, the bid size, the ask size, and the spot price.

H. The No Cancellation Range will be determined per Company Contract and will be available on the Company's website.

I. If a trade takes place within the No Cancellation Range and is alleged to be an error, the trade will not be canceled.

J. Trades executed outside of the No Cancellation Range may be reported to or considered by the Company as an error.

K. Market users have ten (10) minutes from the time of the original trade in which to allege a trade has been executed in error.

L. The Company will notify the market immediately through its website that an error has been alleged, giving details of the trade, including Company Contract month, price and volume. The Company also will notify the Participants involved via e-mail. The Company will then notify all Participants through a Participant Notice whether the price is adjusted or the trade is canceled or stands. The Company will then contact those parties involved in the trade to explain the Company's decision.

M. In order to assist the Company in determining whether the trade alleged to be an error has taken place at an unrepresentative price, the Company may contact/consult Participants and other market Participants. The Company will not disclose to the parties to the alleged error trade the identity of their counterparty. In addition, the identities of the counterparties to the alleged error trade will not be disclosed to any Participant or other Person the Company may consult with. The Company will take into account a variety of market factors in its determination. Each error situation will be assessed on its individual circumstances.

N. If the Company determines that a trade price is outside the No Cancellation Range for a Company Contract, the trade price may be adjusted to a price that equals the fair value market price for that Company Contract at the time the trade under review occurred. The Company may consult and obtain the consent of the parties to the price adjustment or may determine a price adjustment is appropriate regardless of any party's consent or lack thereof. The Company, at its discretion, may allow the trades to stand or cancel the trades rather than adjusting the price. The decision of the Company is final.

O. If the Company determines that the price differential of a spread trade is not representative of the market for that spread trade at the time of execution, then the differential of such spread trade may be adjusted to the price differential for that spread trade at the time the trade under review occurred. The Company, at its discretion, may allow the trades to stand or cancel the trades rather than adjusting the price differential. The decision of the Company is final.

P. The Company will make every attempt to ensure that a decision on whether an alleged error trade will have its price adjusted, will stand or be canceled will be communicated to the market as soon as reasonably possible after the time of the original trade.

Q. The Company has the unilateral right to cancel any Order, adjust the price of a trade and cancel any trade which it considers to be at an unrepresentative price, even where there has been no referral or request from a Participant or other Person, in the interest of maintaining a fair and orderly market. The Company aims to exercise this right within thirty (30) minutes after the trade has been identified. The Company also reserves its right to cancel any Order, adjust the price of a trade and cancel any trade due to any market disrupting event caused by (i) an error in Orders submitted to the Platform or (ii) a technology failure or system malfunction, even where there has been no referral or request from a Participant or other Person, in the interest of maintaining a fair and orderly market and aims to exercise this right within thirty (30) minutes after the system or technology failure has been identified. The Company reserves its right to consider each alleged error trade situation on its individual merits and may therefore amend these policies in light of the circumstances of each individual case. The decision of the Company is final.

R. Canceled trades and prices that have been adjusted will be noted as such in the Company's official record of time and sales. A special marker will indicate trades that have been priced adjusted in the official record of time and sales at the adjusted trade price.

S. **Neither the company nor any of its representatives, its affiliates or its affiliates' representatives shall be liable to any person, or any partner, director, officer, agent, employee, authorized user or authorized representative thereof, for any loss, damage, injury, delay, cost, expense, or other liability or claim, whether in contract, tort or restitution, or under any other cause of action, suffered by or made against them arising from any act or omission on the part of the company, its representatives, its affiliates or its affiliates' representatives relating to any decision by the company to, or to not, void, nullify or cancel orders or trades or adjust the prices of any trades in whole or in part. This limitation of liability will apply regardless of whether or not the company, its representatives, its affiliates or its affiliates' representatives (or any designee thereof) were advised of or otherwise might have anticipated the possibility of such damages.**

Rule 11.9 Company Contacts

All requests to cancel Orders or trades must be directed to the Company via the Participant Portal or the Company telephone number posted on the website. Any such request for the removal of Orders will be acted upon on a best-efforts basis by the relevant Company Personnel.

Rule 11.10 Reasonability Levels

The Error Trade Policy includes Reasonability Levels and No Cancellation Ranges for all Company Contracts on the Platform.

A. Benchmark:

1. If there exists a last price in the applicable Company Contract in the last 48 hours, then such price will be used as the benchmark; or
2. If there exists no last price but there is a bid AND an ask in the last 48 hours, then the Company will use the midpoint of the most recent bid & most recent ask as the benchmark.

B. Reasonability Levels:

1. If Benchmark 1 or 2 is applicable, then the Reasonability Level = 50% of the Benchmark; or

a. If neither Benchmark 1 nor 2 apply, then there will be no alerts generated for this Company Contract and error trades are subject to the No Cancellation Range and Company discretion with respect to adjusting or canceling trades.

Rule 11.11 No Cancellation Ranges

A. Benchmark:

1. If there exists a last price in the applicable Company Contract in the last 48 hours, then such price will be used as the benchmark; or
2. If there exists no last price but there is a bid AND an ask in the last 48 hours, then the Company will use the midpoint of the most recent bid and most recent ask as the benchmark.

B. No Cancellation Range:

1. If Benchmark 1 or 2 is applicable, then the No Cancellation Range = 20% of the Benchmark; or
2. If neither Benchmark 1 nor 2 apply, then there is not a No Cancellation Range for that Company Contract at that time and the Company will evaluate each error alleged error trade situation on its individual merits and the facts and circumstances of each individual case.

Rule 11.12 Amendments to the Rules

These Rules may be amended or repealed, or new Rules may be adopted. An amendment to a Rule, repeal of a Rule or adoption of a new Rule shall be effective on a date set forth by the Company, and set forth in a Participant Notice and on the Website.

Rule 11.13 Transfer of Trades

A. The Chief Compliance Officer or his or her designee may, upon request by the Participant(s), approve a transfer of existing trades and collateral either on the books of the same Participant, or from the books of one Participant to the books of another Participant if the transfer is (i) between accounts with identical beneficial ownership or (ii) in connection with, or as a result of, an asset purchase, corporate restructuring, consolidation or similar non-recurring transaction between two or more entities. Such a transfer must meet each of the following conditions:

1. The transfer must result in the transfer of all existing open positions and collateral in the transferor account;
2. Immediately prior to the transfer, the transferee account must not have any existing open positions or collateral; and
3. All trades involved in the transfer must remain fully collateralized upon completion of the transfer.

B. Provided that the transfer is permitted pursuant to paragraph (A) above, the transactions must be recorded and carried on the books of the receiving Participant at the original trade dates with the original trade prices.

C. All transfers shall be reported to the Company in a form acceptable to the Company for the type of transactions involved. The Participant(s) involved shall

maintain a full and complete record of all transactions together with all pertinent memoranda.

Rule 11.14 Digital Currency Fork Policy

At some point in the future, there may be a change, or anticipated change, to the relevant operating rules, protocols, processes, or standards applicable to a Digital Currency underlying a Company Contract, including without limitation a hard fork, a user activated soft fork, or other events resulting in a split, division, alteration, conversion, replacement, of substitution of a Digital Currency into another form, a restriction on the transfer of the Digital Currency (such as a lockup or freeze), or a distribution of another asset to existing holders of the Digital Currency (such as an airdrop). Such an event may result in the creation of an asset that is subject to the Securities Act of 1933, as amended, and is subject to the jurisdiction of the U.S. Securities and Exchange Commission

In the event of such change, or anticipated change, LedgerX shall have the sole discretion to take such action, including (without limitation) emergency action under Rule 2.12, that it deems appropriate. Such action may include (without limitation) revising delivery obligations under the Company Contract (such as providing for the delivery of one or more assets resulting from such an event), revising other terms of the Company Contract, determining who should receive a newly created digital assets, assigning newly listed Company Contracts to Participants whose positions have been, or are anticipated to be affected, or refusing to transfer a newly created asset that is or may be subject to the Securities Act of 1933 or the jurisdiction of the U.S. Securities and Exchange Commission. LedgerX shall endeavor to provide reasonable notice to market participants and take action in consultation with market participants, where reasonably possible and appropriate, and shall endeavor to align the exposures of Participants holding positions in open Company Contracts with exposures in the spot market.

Chapter 12 Company Contract Specifications

Rule 12.1 USD/BTC Options

A. **Contract Description.** Generally speaking, an option is an agreement that grants the option purchaser, in exchange for a premium, the right, but not the obligation, to purchase from (in the case of a call option) or to sell to (in the case of a put option) the option writer, at a specified exercise or "strike" price, and at specified time(s) or within a specified period, a specified underlying interest. This Rule 12.1 pertains to options on bitcoin (as described further herein) (the "USDBTC Options") and contains general terms and conditions. Participants may enter into USDBTC Options as buyers or sellers of calls and/or puts.

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to USDBTC Options will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to USDBTC Options will be United States dollars, expressed as dollars and cents per bitcoin.

E. **Underlying.** The USDBTC Option underlying will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Option contract size will be one bitcoin.

G. **Position Limits.** No person will own or control positions in excess of:

a. 100,000 USDBTC Options net long or net short in any single Company Contract month; or

b. 250,000 USDBTC Option net long or net short in all Company Contract months combined.

H. **Collateral.** All Company Contracts will be fully collateralized. Each Participant must post the maximum potential loss on a USDBTC Option prior to executing a USDBTC Option.

I. **Option Conventions.**

a. *Traded Price.* The traded price on the Trade Date.

b. *Strike Price.* As of any Trade Date, (i) a range of approximately 15% up and 15% down from the approximate prevailing spot market price as of such

date, with increments of $100.00, (ii) a smaller number of additional strikes in increments ranging from $250.00 to $1,000.00 for prices between 20% and 300% of the approximate prevailing spot market price as of such date, and (iii) any previously-listed strikes with remaining open interest, in each case as may be determined and listed from time to time by the Company in its sole discretion.

c. *Daily Settlement Price.* None. Because all Company Contracts are fully collateralized and physically settled, it is not necessary for the Company to publish a settlement price. Each Participant determines whether the intrinsic value of the underlying is greater than the relevant Strike Price as of the Last Trading Date and makes a corresponding decision as to exercise.

d. *Business Day Convention.* Previous.

e. *Exercise Type.* European.

f. *Contract Series.* Consecutive months up to and including 60 months from the month including the Trade Date, or as otherwise determined and listed from time to time by the Company in its sole discretion.

g. *Last Trading Date.* The last Friday of each USDBTC Option month.

h. *Expiration Time.* With respect to any USDBTC Option, 4:00 p.m. New York time on the Last Trading Date applicable thereto.

i. *Settlement.* Physical delivery upon exercise. With respect to any USDBTC Option, physical delivery will occur on the Business Day next succeeding the Last Trading Day in respect of such Company Contract.

j. *Final Payment Date.* With respect to any USDBTC Option, the Business Day next succeeding the Last Trading Day in respect of such Company Contract.

J. **Exercise.** On the Last Trading Date, Participants submit or update exercise instructions for any long USDBTC Option positions. All exercise instructions are processed on the Last Trading Date not earlier than 5:00 p.m.

Because the Company does not publish a settlement price, there is no provision for automatic exercise of Company Contracts.

K. **Block Trading.** Each USDBTC Option Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Option is equal to the contract size set forth in Section F above. All parties to a USDBTC Option Block Trade must be Eligible Contract Participants.

Rule 12.2 Day-Ahead USD/BTC Swaps

A. **Contract Description.** The term "swap" is a generic one that covers many types of instruments, including (among other things) any agreement, contract or transaction that is for the purchase or sale of any one or more currencies or commodities. This Rule 12.2 pertains to swaps on bitcoin (as described further herein) (the "Day-ahead Swaps") and contains general terms and conditions. A Participant may enter into a Day-ahead Swap as a buyer, whereby such Participant will pay USD and receive BTC, or as a seller, whereby such Participant will pay BTC and receive USD. The Day-ahead Swap requires that a buyer pay USD on the Initial Payment Date, and that the seller pay BTC on the Final Payment Date.

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the Day-ahead Swap will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to Day-ahead Swaps will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to Day-ahead Swaps will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each Day-ahead Swap will be for a single Underlying (*i.e.,* one bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 100,000 Day-ahead Swaps.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company will accept a buy order for one or more Day-ahead Swaps from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company will accept a sell order for one or more Day-ahead Swaps from a Participant,

such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Swap Tenor. One Business Day.**

J. **Swap Conventions.**

a. *Trade Date.* With respect to any Day-ahead Swap, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any Day-ahead Swap, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any Day-ahead Swap, $0.25.

d. *Initial Payment Date.* With respect to any Day-ahead Swap, the Trade Date applicable thereto. The buyer of a Day-ahead Swap will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any Day-ahead Swap, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a Day-ahead Swap, the bid amount is equal to the Premium.

f. *Final Payment Date.* With respect to any Day-ahead Swap, the Business Day next succeeding the Trade Date applicable thereto.

g. *Expiration Time.* With respect to any Day-ahead Swap, 4:00 p.m. New York time (EDT/EST) on the Trade Date applicable thereto.

h. *Business Day Convention.* Previous.

i. *Settlement.* Physical delivery. With respect to any Day-ahead Swap, physical delivery will occur on the Final Payment Date applicable thereto.

K. **Block Trading.** Each Day-ahead Swap Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the Day-ahead Swap is equal to the contract size set forth in Section F above. All parties to a Day-ahead Swap Block Trade must be Eligible Contract Participants.

Rule 12.3 USD/BTC Weekly Options

A. **Contract Description.** Generally speaking, an option is an agreement that grants the option purchaser, in exchange for a premium, the right, but not the obligation, to purchase from (in the case of a call option) or to sell to (in the case of a put option) the option writer, at a specified exercise or "strike" price, and at specified time(s) or within a specified period, a specified underlying interest. This Rule 12.3 pertains to options on bitcoin (as described further herein) (the "USDBTC Weekly Options") and contains general terms and conditions. Participants may enter into USDBTC Weekly Options as buyers or sellers of calls and/or puts.

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The Trading Hours that are applicable to the USDBTC Weekly Option will be as stated in Rule 5.6 above; provided, that, with respect to a USDBTC Weekly Option with any given tenor and/or strike, the Company may establish different Trading Hours by providing notice to participants on its Website and by Participant Notice.

D. **Currency.** The currency applicable to USDBTC Weekly Options will be United States dollars, expressed as dollars and cents per bitcoin.

E. **Underlying.** The USDBTC Weekly Option underlying will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Weekly Option will be one bitcoin.

G. **Position Limits.** No person will own or control positions in excess of:

a. 100,000 USDBTC Weekly Options net long or net short in any single Company Contract month; or

b. 250,000 USDBTC Weekly Options net long or net short in all Company Contract months combined.

H. **Collateral.** All Company Contracts will be fully collateralized. Each Participant must post the maximum potential loss on a USDBTC Weekly Option prior to executing a USDBTC Weekly Option.

I. **Option Conventions.**

a. *Traded Price.* The traded price on the Trade Date.

b. *Strike Price.* As of any Trade Date, (i) a range of approximately 15% up and 15% down from the approximate prevailing spot market price as of such

date, with increments of $100.00, (ii) a smaller number of additional strikes in increments ranging from $250.00 to $1,000.00 for prices between 20% and 300% of the approximate prevailing spot market price as of such date, and (iii) any previously-listed strikes with remaining open interest, in each case as may be determined and listed from time to time by the Company in its sole discretion.

c. *Daily Settlement Price.* None. Because all Company Contracts are fully collateralized and physically settled, it is not necessary for the Company to publish a settlement price. Each Participant determines whether the intrinsic value of the underlying is greater than the relevant Strike Price as of the Last Trading Date and makes a corresponding decision as to exercise.

d. *Business Day Convention.* Previous.

e. *Exercise Type.* European.

f. *Contract Series.* Consecutive weeks up to and including 4 weeks from the week including the Trade Date, or as otherwise determined and listed from time to time by the Company in its sole discretion.

g. *Last Trading Date.* Friday of each calendar week.

h. *Last Trading Time.* 4:00 p.m. ET on the Last Trading Date.

i. *Settlement.* Physical delivery upon exercise. With respect to any USDBTC Weekly Option, physical delivery will occur on the Business Day next succeeding the Last Trading Day in respect of such Company Contract.

j. *Final Payment Date.* With respect to any USDBTC Weekly Option, the Business Day next succeeding the Last Trading Day in respect of such Company Contract.

J. **Exercise.** On the Last Trading Date, Participants submit or update exercise instructions for any long USDBTC Weekly Option positions. All exercise instructions are processed on the Last Trading Date not earlier than 5:00 p.m. ET.

Because the Company does not publish a settlement price, there is no provision for automatic exercise of Company Contracts.

K. **Block Trading.** Each USDBTC Weekly Option Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Weekly Option is equal to the contract size set forth in Section F above. All parties to a USDBTC Weekly Option Block Trade must be Eligible Contract Participants.

Rule 12.4 Day-Ahead USD/BTC Options

A. **Contract Description.** Generally speaking, an option is an agreement that grants the option purchaser, in exchange for a premium, the right, but not the obligation, to purchase from (in the case of a call option) or to sell to (in the case of a put option) the option writer, at a specified exercise or "strike" price, and at specified time(s) or within a specified period, a specified underlying interest. This Rule 12.4 pertains to options on bitcoin (as described further herein) (the "USDBTC Day-ahead Options") and contains general terms and conditions. Participants may enter into USDBTC Day-ahead Options as buyers or sellers of calls and/or puts.

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The Trading Hours that are applicable to the USDBTC Day-ahead Option will be as stated in Rule 5.6 above; provided, that, with respect to a USBTC Day-ahead Option with any given tenor and/or strike, the Company may establish different Trading Hours by providing notice to participants on its Website and by Participant Notice.

D. **Currency.** The currency applicable to USDBTC Day-ahead Options will be United States dollars, expressed as dollars and cents per bitcoin.

E. **Underlying.** The USDBTC Day-ahead Option underlying will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Day-ahead Option will be one bitcoin.

G. **Position Limits.** No person will own or control positions in excess of: 100,000 USDBTC Day-ahead Options net long or net short.

H. **Collateral.** All Company Contracts will be fully collateralized. Each Participant must post the maximum potential loss on a USDBTC Day-ahead Option prior to executing a USDBTC Day-ahead Option.

I. **Option Conventions.**

a. *Traded Price.* The traded price on the Trade Date.

b. *Strike Price.* As of any Trade Date, (i) a range of approximately 15% up and 15% down from the approximate prevailing spot market price as of such date, with increments of $50.00, (ii) a smaller number of additional strikes in increments ranging from $100.00 to $1,000.00 for prices between 20% and 300% of the approximate prevailing spot market price as of such date, and (iii) any previously-listed strikes with remaining open interest, in each case as may be determined and listed from time to time by the Company in its sole discretion.

c. *Daily Settlement Price.* None. Because all Company Contracts are fully collateralized and physically settled, it is not necessary for the Company to publish a settlement price. Each Participant determines whether the intrinsic value of the underlying is greater than the relevant Strike Price as of the Last Trading Date and makes a corresponding decision as to exercise.

d. *Business Day Convention.* Previous.

e. *Exercise Type.* European.

f. *Last Trading Time.* With respect to any USDBTC Day-ahead Option, 4:00 p.m. New York time (EDT/EST) on the Trade Date applicable thereto.

g. *Settlement.* With respect to any USDBTC Day-ahead Option, physical delivery will occur on the Final Payment Date applicable thereto.

h. *Final Payment Date.* With respect to any USDBTC Day-ahead Option, the Business Day next succeeding the Trade Date applicable thereto.

J. **Exercise.** On the Last Trading Date, Participants submit or update exercise instructions for any long USDBTC Day-ahead Option positions. All exercise instructions are processed on the Last Trading Date not earlier than 5:00 p.m. ET.

Because the Company does not publish a settlement price, there is no provision for automatic exercise of Company Contracts.

K. **Block Trading.** Each USDBTC Day-ahead Option Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Day-ahead Option is equal to the contract size set forth in Section F above. All parties to a USDBTC Day-ahead Option Block Trade must be Eligible Contract Participants.

Rule 12.5 BTC Block Height Options

A. **Contract Description.** This Rule 12.5 pertains to an options contract (as described further herein) (the "Block Height Options") and contains general terms and conditions. The Block Height Options contract is a binary options contract on whether bitcoin has reached a particular Bitcoin Block Height (as defined below) before a specific date and time. A purchaser of a Block Height Options contract will receive the Payout Value (as defined below) if the bitcoin blockchain has reached the Bitcoin Block Height before the expiration of the contract. In contrast, the purchaser will not receive the Payout Value if the bitcoin blockchain has not reached the Bitcoin Block Height before the expiration of the contract.

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Bitcoin Block Height.** The block number as part of the bitcoin blockchain. The Bitcoin Block Height shall be specified by the Company for the Company Contract.

D. **Trading Hours.** The trading hours that are applicable to the BTC Block Height Options will be as stated in Rule 5.6 above.

E. **Currency.** The currency applicable to BTC Block Height Options will be United States dollars, expressed as dollars and cents per bitcoin.

F. **Underlying.** The BTC Block Height Options underlying will be Bitcoin Block Height.

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 100,000 options.

H. **Collateral.** All Company Contracts will be fully collateralized. Each Participant must post the maximum potential loss on a Company Contract prior to executing a Company Contract.

I. **Expiration Date.** The Expiration Date shall be the date specified by the Company for the Company Contract.

J. **Expiration Time.** The Expiration Time shall be the time specified by the Company for the Company Contract.

K. **Settlement Date.** The Settlement Date shall be the earlier of the date on which the Bitcoin Block Height is reached, or the Expiration Date.

L. **Payout Criterion.** If the Bitcoin Block Height has been reached prior to the Expiration Time on the Expiration Date, the Company Contract shall payout the Payout Value at such time that the Block Height has reached 6 confirmations.

M. **Payout Value.** $100.00.

N. **Block Trading.** The BTC Block Height Option is not eligible for Block Trading.

Rule 12.6 Monthly USD/BTC Mini Options

A. **Contract Description.** Generally speaking, an option is an agreement that grants the option purchaser, in exchange for a premium, the right, but not the obligation, to purchase from (in the case of a call option) or to sell to (in the case of a put option) the option writer, at a specified exercise or "strike" price, and at specified time(s) or within a specified period, a specified underlying interest. This Rule 12.6 pertains to options on bitcoin (as described further herein) (the "USDBTC Monthly Mini Options") and contains general terms and conditions. Participants may enter into USDBTC Monthly Mini Options as buyers or sellers of calls and/or puts.

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the USDBTC Monthly Mini Options will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to USDBTC Monthly Mini Options will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to USDBTC Monthly Mini Options will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Monthly Mini Option will be for 1/100 Underlying (*i.e.,* one-one hundredth bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 2,000,000 USDBTC Monthly Mini Options.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company DCM will accept a buy order for one or more USDBTC Monthly Mini Options from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company DCM will accept a sell order for one or more USDBTC Monthly Mini Options from a Participant, such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Conventions.**

a. *Trade Date.* With respect to any USDBTC Monthly Mini Option, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any USDBTC Monthly Mini Option, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any USDBTC Monthly Mini Option, $0.01.

d. *Initial Payment Date.* With respect to any USDBTC Monthly Mini Option, the Trade Date applicable thereto. The buyer of a USDBTC Monthly Mini Option will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any USDBTC Monthly Mini Option, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a USDBTC Monthly Mini Option, the bid amount is equal to the Premium.

f. *Last Trading Date*. Friday of the calendar month, or as otherwise determined by the Company in its sole discretion.

g. *Business Day Convention.* Previous.

h. *Final Payment Date.* With respect to any USDBTC Monthly Mini Option, the Business Day next succeeding the Last Trading Date.

i. *Settlement.* Physical delivery on the Final Payment Date.

J. **Block Trading.** Each USDBTC Monthly Mini Option Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Monthly Mini Option is equal to 100 contracts. All parties to a USDBTC Monthly Mini Option Block Trade must be Eligible Contract Participants.

Rule 12.7 Day-Ahead USD/BTC Mini Swaps

A. **Contract Description.** The term "swap" is a generic one that covers many types of instruments, including (among other things) any agreement, contract or transaction that is for the purchase or sale of any one or more currencies or commodities. A Participant may enter into a Company Contract as a buyer, whereby such Participant will pay USD and receive BTC, or as a seller, whereby such Participant will pay BTC and receive USD. This Rule 12.7 pertains to swaps on bitcoin (as described further herein) (the "Day-ahead Mini Swaps") and contains general terms and conditions. The Day-ahead Mini Swap requires that a buyer pay USD on the Initial Payment Date, and that the seller pay BTC on the Final Payment Date.

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the USDBTC Day-ahead Mini Swap will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to USDBTC Day-ahead Mini Swap will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to USDBTC Day-ahead Mini Swaps will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Day-ahead Mini Swap will be for 1/100 Underlying (*i.e.,* one-one hundredth bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 2,000,000 USDBTC Day-ahead Mini Swaps.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company DCM will accept a buy order for one or more USDBTC Day-ahead Mini Swaps from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company DCM will accept a sell order for one or more USDBTC Day-ahead Mini Swaps from a Participant, such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Conventions.**

a. *Trade Date.* With respect to any USDBTC Day-ahead Mini Swap, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any USDBTC Day-ahead Mini Swap, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any USDBTC Day-ahead Mini Swap, $0.01.

d. *Initial Payment Date.* With respect to any USDBTC Day-ahead Mini Swap, the Trade Date applicable thereto. The buyer of a USDBTC Day-ahead Mini Swap will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any USDBTC Day-ahead Mini Swap, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a USDBTC Day-ahead Mini Swap, the bid amount is equal to the Premium.

f. *Last Trading Date.* With respect to any Day-ahead Mini Swap, the Business Day next succeeding the Trade Date applicable thereto.

g. *Business Day Convention.* Previous.

h. *Final Payment Date.* With respect to any USDBTC Day-ahead Mini Swap, the Business Day next succeeding the Last Trading Date.

i. *Settlement.* Physical delivery on the Final Payment Date.

J. **Block Trading.** Each USDBTC Day-ahead Mini Swap Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Day-ahead Mini Swap is equal to 100 contracts. All parties to a USDBTC Day-ahead Mini Swap Block Trade must be Eligible Contract Participants.

Rule 12.8 Weekly USD/BTC Mini Options

A. **Contract Description.** Generally speaking, an option is an agreement that grants the option purchaser, in exchange for a premium, the right, but not the obligation, to purchase from (in the case of a call option) or to sell to (in the case of a put option) the option writer, at a specified exercise or "strike" price, and at specified time(s) or within a specified period, a specified underlying interest. This Rule 12.8 pertains to options on bitcoin (as described further herein) (the ["]USDBTC Weekly Mini Options") and contains general terms and conditions. Participants may enter into USDBTC Weekly Mini Options as buyers or sellers of calls and/or puts.

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the USDBTC Weekly Mini Options will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to USDBTC Weekly Mini Options will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to USDBTC Weekly Mini Options will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Weekly Mini Option will be for 1/100 Underlying (*i.e.,* one-one hundredth bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 2,000,000 USDBTC Weekly Mini Options.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company DCM will accept a buy order for one or more USDBTC Weekly Mini Options from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company DCM will accept a sell order for one or more USDBTC Weekly Mini Options from a Participant, such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Conventions.**

a. *Trade Date.* With respect to any USDBTC Weekly Mini Option, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any USDBTC Weekly Mini Option, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any USDBTC Weekly Mini Option, $0.01.

d. *Initial Payment Date.* With respect to any USDBTC Weekly Mini Option, the Trade Date applicable thereto. The buyer of a USDBTC Weekly Mini Option will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any USDBTC Weekly Mini Option, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a USDBTC Weekly Mini Option, the bid amount is equal to the Premium.

f. *Last Trading Date.* Friday of the calendar week, or as otherwise determined by the Company in its sole discretion.

g. *Business Day Convention.* Previous.

h. *Final Payment Date.* With respect to any USDBTC Weekly Mini Option, the Business Day next succeeding the Last Trading Date.

i. *Settlement.* Physical delivery on the Final Payment Date.

J. **Block Trading.** Each USDBTC Weekly Mini Option Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Weekly Mini Option is equal to 100 contracts. All parties to a USDBTC Weekly Mini Option Block Trade must be Eligible Contract Participants.

Rule 12.9 Day-Ahead USD/BTC Futures

A. **Contract Description.** In general, a futures contract is a legally binding agreement to buy or sell a standardized asset at a specified time in the future. This Rule 12.9 pertains to futures on bitcoin (as described further herein) (the "Day-ahead Futures") and contains general terms and conditions. The Day-ahead Futures

contract requires that a buyer pay USD on the Initial Payment Date (as defined below), and that the seller pay BTC on the Final Payment Date (as defined below).

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the Day-ahead Futures contract will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to Day-ahead Futures will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to Day-ahead Futures will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each Day-ahead Futures contract will be for a single Underlying (*i.e.,* one bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 20,000 Day-ahead Futures.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company DCM will accept a buy order for one or more Day-ahead Futures from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company DCM will accept a sell order for one or more Day-ahead Futures from a Participant, such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Tenor.** One Business Day.

J. **Conventions.**

a. *Trade Date.* With respect to any Day-ahead Futures contract, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any Day-ahead Futures contract, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any Day-ahead Futures contract, $0.25.

d. *Initial Payment Date.* With respect to any Day-ahead Futures contract, the Trade Date applicable thereto. The buyer of a Day-ahead Futures contract will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any Day-ahead Futures contract, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a Day-ahead Futures contract, the bid amount is equal to the Premium.

f. *Final Payment Date.* With respect to any Day-ahead Futures contract, the Business Day next succeeding the Trade Date applicable thereto.

g. *Business Day Convention.* Previous.

h. *Settlement.* Physical delivery. With respect to any Day-ahead Futures contract, physical delivery will occur on the Final Payment Date applicable thereto.

K. **Block Trading.** Each Day-ahead Futures Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the Day-ahead Futures contract is equal to the contract size set forth in Section F above. All parties to a Day-ahead Futures Block Trade must be Eligible Contract Participants.

Rule 12.10 Weekly USD/BTC Futures

A. **Contract Description.** In general, a futures contract is a legally binding agreement to buy or sell a standardized asset at a specified time in the future. This Rule 12.10 pertains to futures on bitcoin (as described further herein) (the "USDBTC Weekly Futures") and contains general terms and conditions. The USDBTC Weekly Futures contract requires that a buyer pay USD on the Initial Payment Date (as defined below), and that the seller pay BTC on the Final Payment Date (as defined below).

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time

and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the USDBTC Weekly Futures contract will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to USDBTC Weekly Futures will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to USDBTC Weekly Futures will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Weekly Futures contract will be for a single Underlying (*i.e.,* one bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 20,000 USDBTC Weekly Futures.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company DCM will accept a buy order for one or more USDBTC Weekly Futures from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company DCM will accept a sell order for one or more USDBTC Weekly Futures from a Participant, such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Conventions.**

a. *Trade Date.* With respect to any USDBTC Weekly Futures contract, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any USDBTC Weekly Futures contract, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any USDBTC Weekly Futures contract, $0.25.

d. *Initial Payment Date.* With respect to any USDBTC Weekly Futures contract, the Trade Date applicable thereto. The buyer of a USDBTC Weekly Futures contract will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any USDBTC Weekly Futures contract, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a USDBTC Weekly Futures contract, the bid amount is equal to the Premium.

f. *Last Trading Date.* Friday of the calendar week, or as otherwise determined by the Company in its sole discretion.

g. *Business Day Convention.* Previous.

h. *Final Payment Date.* With respect to any USDBTC Weekly Futures contract, the Business Day next succeeding the Last Trading Date.

i. *Settlement.* Physical delivery on the Final Payment Date.

J. **Block Trading.** Each USDBTC Weekly Futures Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Weekly Futures contract is equal to the contract size set forth in Section F above. All parties to a USDBTC Weekly Futures Block Trade must be Eligible Contract Participants.

Rule 12.11 Monthly USD/BTC Futures

A. **Contract Description.** In general, a futures contract is a legally binding agreement to buy or sell a standardized asset at a specified time in the future. This Rule 12.11 pertains to futures on bitcoin (as described further herein) (the "USDBTC Monthly Futures") and contains general terms and conditions. The USDBTC Monthly Futures contract requires that a buyer pay USD on the Initial Payment Date (as defined below), and that the seller pay BTC on the Final Payment Date (as defined below).

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the USDBTC Monthly Futures contract will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to USDBTC Monthly Futures will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to USDBTC Monthly Futures will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Monthly Futures contract will be for a single Underlying (*i.e.,* one bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 20,000 USDBTC Monthly Futures.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company DCM will accept a buy order for one or more USDBTC Monthly Futures from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company DCM will accept a sell order for one or more USDBTC Weekly Futures from a Participant, such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Conventions.**

a. *Trade Date.* With respect to any USDBTC Monthly Futures contract, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any USDBTC Monthly Futures contract, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any USDBTC Monthly Futures contract, $0.25.

d. *Initial Payment Date.* With respect to any USDBTC Monthly Futures contract, the Trade Date applicable thereto. The buyer of a USDBTC Monthly Futures contract will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any USDBTC Monthly Futures contract, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a USDBTC Monthly Futures contract, the bid amount is equal to the Premium.

f. *Last Trading Date.* Friday of the calendar week, or as otherwise determined by the Company in its sole discretion.

g. *Business Day Convention.* Previous.

h. *Final Payment Date.* With respect to any USDBTC Monthly Futures contract, the Business Day next succeeding the Last Trading Date.

i. *Settlement.* Physical delivery on the Final Payment Date.

J. **Block Trading.** Each USDBTC Monthly Futures Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Monthly Futures contract is equal to the contract size set forth in Section F above. All parties to a USDBTC Monthly Futures Block Trade must be Eligible Contract Participants.

Rule 12.12 Day-Ahead USD/BTC Mini Futures

A. **Contract Description.** In general, a futures contract is a legally binding agreement to buy or sell a standardized asset at a specified time in the future. This Rule 12.12 pertains to futures on bitcoin (as described further herein) (the "Day-ahead Mini Futures") and contains general terms and conditions. The Day-ahead Mini Futures contract requires that a buyer pay USD on the Initial Payment Date (as defined below), and that the seller pay BTC on the Final Payment Date (as defined below).

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the Day-ahead Mini Futures contract will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to Day-ahead Mini Futures will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to Day-ahead Mini Futures will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each Day-ahead Futures contract will be for a 1/100 Underlying (*i.e.,* one-one hundredth bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 2,000,000 Day-ahead Futures.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company DCM will accept a buy order for one or more Day-ahead Mini Futures from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company DCM will accept a sell order for one or more Day-ahead Futures from a Participant, such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Tenor.** One Business Day.

J. **Conventions.**

a. *Trade Date.* With respect to any Day-ahead Mini Futures contract, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any Day-ahead Mini Futures contract, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any Day-ahead Mini Futures contract, $0.01.

d. *Initial Payment Date.* With respect to any Day-ahead Mini Futures contract, the Trade Date applicable thereto. The buyer of a Day-ahead Futures contract will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any Day-ahead Mini Futures contract, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a Day-ahead Mini Futures contract, the bid amount is equal to the Premium.

f. *Final Payment Date.* With respect to any Day-ahead Mini Futures contract, the Business Day next succeeding the Trade Date applicable thereto.

g. *Business Day Convention.* Previous.

h. *Settlement*. Physical delivery. With respect to any Day-ahead Mini Futures contract, physical delivery will occur on the Final Payment Date applicable thereto.

K. **Block Trading.** Each Day-ahead Mini Futures Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the Day-ahead Mini Futures contract is equal to 100 contracts. All parties to a Day-ahead Mini Futures Block Trade must be Eligible Contract Participants.

Rule 12.13 Weekly USD/BTC Mini Futures

A. **Contract Description.** In general, a futures contract is a legally binding agreement to buy or sell a standardized asset at a specified time in the future. This Rule 12.13 pertains to futures on bitcoin (as described further herein) (the "USDBTC Weekly Mini Futures") and contains general terms and conditions. The USDBTC Weekly Mini Futures contract requires that a buyer pay USD on the Initial Payment Date (as defined below), and that the seller pay BTC on the Final Payment Date (as defined below).

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the USDBTC Weekly Mini Futures contract will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to USDBTC Weekly Mini Futures will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to USDBTC Weekly Mini Futures will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Weekly Mini Futures contract will be for a 1/100 Underlying (*i.e.,* one-one hundredth bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 2,000,000 USDBTC Weekly Mini Futures.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company DCM will accept a buy order for one or more USDBTC Weekly Mini Fu-

tures from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company DCM will accept a sell order for one or more USDBTC Weekly Mini Futures from a Participant, such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Conventions.**

a. *Trade Date.* With respect to any USDBTC Weekly Mini Futures contract, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any USDBTC Weekly Mini Futures contract, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any USDBTC Weekly Mini Futures contract, $0.01.

d. *Initial Payment Date.* With respect to any USDBTC Weekly Mini Futures contract, the Trade Date applicable thereto. The buyer of a USDBTC Weekly Mini Futures contract will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any USDBTC Weekly Mini Futures contract, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a USDBTC Weekly Mini Futures contract, the bid amount is equal to the Premium.

f. *Last Trading Date.* Friday of the calendar week, or as otherwise determined by the Company in its sole discretion.

g. *Business Day Convention.* Previous.

h. *Final Payment Date.* With respect to any USDBTC Weekly Mini Futures contract, the Business Day next succeeding the Last Trading Date.

i. *Settlement.* Physical delivery on the Final Payment Date.

J. **Block Trading.** Each USDBTC Weekly Mini Futures Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Weekly Mini Futures contract is equal to 100 contracts. All parties to a USDBTC Weekly Mini Futures Block Trade must be Eligible Contract Participants.

Rule 12.14 Monthly USD/BTC Mini Futures

A. **Contract Description.** In general, a futures contract is a legally binding agreement to buy or sell a standardized asset at a specified time in the future. This Rule 12.14 pertains to futures on bitcoin (as described further herein) (the "USDBTC Monthly Mini Futures") and contains general terms and conditions. The USDBTC Monthly Mini Futures contract requires that a buyer pay USD on the Initial Payment Date (as defined below), and that the seller pay BTC on the Final Payment Date (as defined below).

B. **Bitcoin.** Bitcoin is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Bitcoin network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual bitcoin transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours that are applicable to the USDBTC Monthly Mini Futures contract will be as stated in Rule 5.6 above.

D. **Currency.** The currency applicable to USDBTC Monthly Mini Futures will be United States dollars, which will be expressed in dollars and cents per bitcoin.

E. **Underlying.** The underlying applicable to USDBTC Monthly Mini Futures will be bitcoin (sometimes referred to as "BTC").

F. **Contract Size.** Each USDBTC Monthly Mini Futures contract will be for $\frac{1}{100}$ Underlying (*i.e.,* one-one hundredth bitcoin).

G. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 2,000,000 USDBTC Monthly Mini Futures.

H. **Collateral.** All Company Contracts will be fully collateralized. Before the Company DCM will accept a buy order for one or more USDBTC Monthly Mini Futures from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its settlement obligations on such Company Contract(s). Before the Company DCM will accept a sell order for one or more USDBTC Monthly Mini Futures from a Participant, such Participant must have sufficient bitcoin available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

I. **Conventions.**

a. *Trade Date.* With respect to any USDBTC Monthly Mini Futures contract, the date on which the Company, in its sole discretion, accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any USDBTC Monthly Mini Futures contract, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any USDBTC Monthly Mini Futures contract, $0.01.

d. *Initial Payment Date.* With respect to any USDBTC Monthly Mini Futures contract, the Trade Date applicable thereto. The buyer of a USDBTC Monthly Mini Futures contract will pay the bid amount of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any USDBTC Monthly Mini Futures contract, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a USDBTC Monthly Mini Futures contract, the bid amount is equal to the Premium.

f. *Last Trading Date.* Friday of the calendar month, or as otherwise determined by the Company in its sole discretion.

g. *Business Day Convention.* Previous.

h. *Final Payment Date.* With respect to any USDBTC Monthly Mini Futures contract, the Business Day next succeeding the Last Trading Date.

i. *Settlement.* Physical delivery on the Final Payment Date.

J. **Block Trading.** Each USDBTC Monthly Mini Futures Block Trade must be effectuated in accordance with Rule 5.7. The minimum block size for the USDBTC Monthly Mini Futures contract is equal to 100 contracts. All parties to a USDBTC Monthly Mini Futures Block Trade must be Eligible Contract Participants.

Rule 12.15 USD/ETH Deci Options

A. **Contract Description.** A Participant may enter into a Company Contract as the buyer or the seller of a call or put option contract on ETH. For both call and put options, on the Initial Payment Date the buyer must pay the Premium in USD and the seller's Participant Account will be credited with the Premium in USD. On the Final Payment Date, the buyer may elect to exercise the contract, at which point the Company Contract will be settled as described in Rule 6.2. All Company Contracts referencing Underlying Digital Currency, are subject to the LedgerX Digital Currency Fork Policy found in Rule 11.14.

B. **Ethereum.** Ethereum is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Ethereum network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual Ethereum transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours of the Exchange that are applicable to the Company Contract described in this Rule 12.15 will be 24 hours a day, 7 days a week or as otherwise determined by the Exchange from time to time as disclosed on the Website and through Participant Notice.

D. **Currency.** The currency applicable to USDETH Deci Options will be United States dollars, which will be expressed in dollars and cents per ETH.

E. **Underlying.** The underlying applicable to USDETH Deci Options will be Ethereum (sometimes referred to as "ETH").

F. **Contract Size.** Each USDETH Deci Option will be for 1/10 Underlying (*i.e.,* one-tenth ETH).

G. **Listing Cycle.** LedgerX shall post in a location on its website available to Participants a list of Company Contracts that are available for trading. At a minimum, that list shall include Company Contracts expiring on each of the four nearest Fridays, plus Company Contracts that expire on the last Friday of each of the following three calendar quarters.

H. **Strike Prices and Intervals.** For each expiration date on which Company Contracts are listed, LedgerX shall list strike prices denominated in U.S. dollars as follows:

For the nearest 4 weeks, LedgerX shall list Company Contracts with at least five strike prices at each expiry. Those strike prices shall be separated by equal intervals of at least $10, or such other greater amount determined by LedgerX that is at least 20% above and below the spot market trading range over the prior 4 week period.

For Company Contracts with later expiries, LedgerX shall list at least three strike prices at each expiry in intervals determined at the discretion of LedgerX based on its assessment of the movements of the ETH spot market.

I. **Exercise Style.** European (Exercise available only on the day of expiration per the terms of this contract specification).

J. **Exercise Instructions and Procedures.** For the buyer of a USDETH Deci Option contract to exercise that contract, the buyer must submit exercise instructions to the Exchange prior to the Final Payment Day/Time, and have sufficient collateral available for trading in buyer's account at that time to satisfy buyer's Settlement obligation. See Rules 7.1 and 7.2. USDETH Deci Option contracts will not be exercised automatically. See Rule 6.2.E.

K. **Expiration.** If a buyer of a USDETH Deci Option does not exercise that option timely, or lacks sufficient collateral available for trading to satisfy buyer's Settlement obligation, then the option shall expire valueless.

L. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 1,000,000 USDETH Deci Options.

M. **Collateral.** All Company Contracts will be fully collateralized. Before the Exchange will accept a buy order for an USDETH Deci Option from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its obligation to pay the Premium on such Company Contract(s). Additional collateral is required from buyer to exercise the option, as described above. Before the Exchange will accept a sell order for one or more USDETH Deci Options from a Participant, such Participant must have the following: (i) for call options, the seller must have sufficient ETH available for trading in its account to satisfy its delivery obligations on such Company Contract at Settlement; or (ii) for put options, the seller must have sufficient USD available for trading it its account to satisfy its payment obligations at Settlement.

N. **Conventions.**

a. *Trade Date.* With respect to any USDETH Deci Option, the date on which the Exchange, in its sole discretion accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any USDETH Deci Option, the Trade Date applicable thereto.

c. *Strike Price.* As of any Trade Date, the agreed price in U.S. dollars to be paid at expiration for ETH.

d. *Minimum Price Fluctuation.* With respect to any USDETH Deci Option, $0.01.

e. *Initial Payment Date.* With respect to any USDETH Deci Option, the Trade Date applicable thereto. The buyer of a USDETH Deci Option will pay the agreed amount of such Company Contract on the Trade Date thereof.

f. *Premium.* With respect to any USDETH Deci Option, the Buyer thereof will pay the premium thereon on the Initial Payment Date.

g. *Last Trading Day/Time.* Up to but not including 5:00 p.m. New York time (adjusted for daylight savings) on the Friday of the week and month of expiry for that contract, or as otherwise determined by the Exchange in its sole discretion.

h. *Settlement.* Physical delivery on the Final Payment Day/Time.

O. **Block Trading.** Each Block Trade of as USDETH Deci Options must be effectuated in accordance with Rule 5.7. The minimum block size for the USDETH Deci Options is equal to 10 contracts. All parties to a USDETH Deci Option Block Trade must be Eligible Contract Participants.

Rule 12.16 USD/ETH Deci Futures

A. **Contract Description.** A Participant may enter into a Company Contract as a buyer, whereby such Participant will pay USD and receive ETH, or as a seller, whereby such Participant will pay ETH and receive USD. The Company Contract requires that a buyer pay USD on the Initial Payment Date, and that the seller pay ETH on the Final Payment Date. This Rule 12.16 pertains to Futures on ETH (as described further herein) and contains general Company Contract terms and conditions.

B. **Ethereum.** Ethereum is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for a central intermediary. The Ethereum network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual Ethereum transaction is validated by the network of decentralized parties, or nodes, over a period

of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours of the Exchange's Designated Contract Market that are applicable to the Company Contract described in this Rule 12.16 will be 24 hours a day, 7 days a week or as otherwise determined by the Exchange from time to time as disclosed on the Website and through Participant Notice.

D. **Currency.** The currency applicable to USDETH Deci Futures will be United States dollars, which will be expressed in dollars and cents per ETH.

E. **Underlying.** The underlying applicable to USDETH Deci Futures will be Ether.

F. **Contract Size.** Each USDETH Deci Future will be for 1/10 Underlying (*i.e.,* one-tenth ETH).

G. **Listing Cycle.** LedgerX shall post in a location on its website available to Participants a list of Company Contracts that are available for trading. At a minimum, that list shall include Company Contracts maturing on each of the four nearest Fridays, plus Company Contracts that mature on the last Friday of each of the following three calendar quarters.

H. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 1,000,000 USDETH Deci Futures.

I. **Collateral.** All Company Contracts will be fully collateralized. Before the Exchange's Designated Contract Market will accept a buy order for one or more USDETH Deci Futures from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its payment obligations on such Company Contract(s). Before the Exchange's Designated Contract Market will accept a sell order for one or more USDETH Deci Futures from a Participant, such Participant must have sufficient ETH available for trading in its account to satisfy its delivery obligations on such Company Contract(s).

J. **Conventions.**

a. *Trade Date.* With respect to any USDETH Deci Future, the date on which the Exchange, in its sole discretion accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any USDETH Deci Future, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any USDETH Deci Future, $0.01.

d. *Initial Payment Date.* With respect to any USDETH Deci Future, date on which the buyer of a USDETH Deci Future will pay the Purchase Price shall be the Trade Date applicable thereto.

e. *Purchase Price.* With respect to any USDETH Deci Future, the total U.S. Dollar denominated amount that a Buyer agreed to pay for a USDETH Deci Future is the Purchase Price.

f. *Last Trading Day/Time.* Up to but not including 5:00 p.m. New York time (adjusted for daylight savings) on the Friday of the week and month of expiry for that contract, or as otherwise determined by the Exchange in its sole discretion.

g. *Final Payment Day/Time.* 5:00 p.m. New York time (adjusted for daylight savings) on the Friday of the week and month of expiry for that contract.

h. *Settlement.* Physical delivery on the Final Payment Day/Time.

K. **Block Trading.** Each Block Trade of as USDETH Deci Future must be effectuated in accordance with Rule 5.7. The minimum block size for the USDETH Deci Future is equal to 10 contracts. All parties to a USDETH Deci Future Block Trade must be Eligible Contract Participants.

Rule 12.17 Day-Ahead USD/ETH Deci Swaps

A. **Contract Description.** The term "swap" is a generic one that covers many types of instruments, including (among other things) any agreement, contract or transaction that is for the purchase or sale of any one or more currencies or commodities. A Participant may enter into a Company Contract as a buyer, whereby such Participant will pay USD and receive ETH, or as a seller, whereby such Participant will pay ETH and receive USD. This Rule 12.17 pertains to swaps on Ether (as described further herein) (the "Day-ahead USD/ETH Deci Swaps") and contains general terms and conditions. The Day-ahead USD/ETH Deci-Swap requires that a buyer pay USD on the Initial Payment Date, and that the seller pay ETH on the Final Payment Date. All Company Contracts referencing Underlying Digital Currency, are subject to the LedgerX Digital Currency Fork Policy found in Rule 11.14.

B. **Ethereum.** Ethereum is a computer network and protocol that allows digital currency to be stored and transferred in a distributed manner without the need for

a central intermediary. The Ethereum network is a form of blockchain, which allows consensus to be built and maintained on a distributed, decentralized basis by parties with no inherent reason to trust one another. Each individual Ethereum transaction is validated by the network of decentralized parties, or nodes, over a period of time and then added to a "block", which is then cryptographically linked to the immediately preceding block (over time, creating a chain, or a "blockchain").

C. **Trading Hours.** The trading hours of that are applicable to the Company Contract described in this Rule 12.17 will be 24 hours a day, 7 days a week or as otherwise determined by the Exchange from time to time as disclosed on the Website and through Participant Notice.

D. **Currency.** The currency applicable to Day-Ahead USD/ETH Deci Swaps will be United States dollars, which will be expressed in dollars and cents per ETH.

E. **Underlying.** The underlying applicable to Day-Ahead USD/ETH Deci Swaps will be Ethereum (sometimes referred to as "ETH").

F. **Contract Size.** Each Day-Ahead USD/ETH Deci Swap will be for 1/10 Underlying (*i.e.,* one-tenth ETH).

G. **Listing Cycle.** LedgerX shall list the Company Contract on a daily basis as available for trading.

H. **Prices and Intervals.** LedgerX shall list prices denominated in U.S. dollars. Those prices shall be separated by equal intervals of at least $10, or such other greater amount determined by LedgerX that is at least 20% above and below the spot market trading range over the prior 1 week period.

I. **Position Limits.** As of any date of determination, no person will own or control positions in excess of 1,000,000 Day-Ahead USD/ETH Deci Swaps.

J. **Collateral.** All Company Contracts will be fully collateralized. Before the Exchange will accept a buy order for a Day-Ahead USD/ETH Deci Swap from a Participant, such Participant must have sufficient USD available for trading in its account to satisfy its obligation to pay the Premium on such Company Contract(s). Before the Exchange will accept a sell order for one or more Day-Ahead USD/ETH Deci Swaps from a Participant, such Participant must have sufficient ETH available for trading in its account to satisfy its delivery obligations on such Company Contract at Settlement.

K. **Conventions.**

a. *Trade Date.* With respect to any Day-Ahead USD/ETH Deci Swap, the date on which the Exchange, in its sole discretion accepts a buy or sell order, as the case may be.

b. *Effective Date.* With respect to any Day-Ahead USD/ETH Deci Swap, the Trade Date applicable thereto.

c. *Minimum Price Fluctuation.* With respect to any Day-Ahead USD/ETH Deci Swap, $0.01.

d. *Initial Payment Date.* With respect to any Day-Ahead USD/ETH Deci Swap, the Trade Date applicable thereto. The buyer of a Day-Ahead USD/ETH Deci Swap will pay the agreed Premium of such Company Contract on the Trade Date thereof.

e. *Premium.* With respect to any Day-Ahead USD/ETH Deci Swap, the Buyer thereof will pay the premium thereon on the Initial Payment Date. In the context of a Day-Ahead USD/ETH Deci Swap, the agreed amount is equal to the Premium.

f. *Last Trading Day/Time.* Up to but not including 5:00 p.m. New York time (adjusted for daylight savings) on the Business Day immediately preceding Settlement.

g. *Final Payment Day/Time.* 5:00 p.m. New York time (adjusted for daylight savings) on the Business Day immediately after the Last Trading Day/Time.

h. *Settlement.* Physical delivery on the Final Payment Day/Time.

L. **Block Trading.** Each Block Trade of as Day-Ahead USD/ETH Deci Swaps must be effectuated in accordance with Rule 5.7. The minimum block size for the Day-Ahead USD/ETH Deci Swaps is equal to 10 contracts. All parties to a Day-Ahead USD/ETH Deci Swap Block Trade must be Eligible Contract Participants.

Chapter 13 Clearing Services for Kalshi

Rule 13.1 Clearing Services for Kalshi

A. **Rules Applicable to Clearing Services.**

This Chapter 13 applies to the Clearing Services the Clearing House will provide to Kalshi Participants for Kalshi Binary Contracts.

B. **Application of Rules[.]**

Except as provided elsewhere in the Rules, only this Chapter 13 will apply to Clearing Services.

C. **The Clearing Services.**

The Clearing House shall provide the Clearing Services in a timely, accurate and complete manner for all Kalshi Binary Contracts that have been approved for clearing by the Clearing House in accordance with this Chapter 13.

Rule 13.2 Clearance and Substitution of Kalshi Binary Contracts

Rule 13.2.1 Clearance and Substitution

A. Upon submission of a Kalshi Binary Contract for clearing, the Clearing House will conduct a review of the Participant's Collateral Account to ensure that the Participant can fully collateralize the Kalshi Binary Contract prior to providing Clearing Services. If the Participant's Collateral Account does not have the necessary funds and/or collateral, the Clearing House will not accept the Kalshi Binary Contract for clearing.

B. Upon the successful acceptance of the Kalshi Binary Contract, the Clearing House shall immediately, through the process of Novation, be substituted as and assume the position of seller to the Participant buying and buyer to the Participant selling the relevant Kalshi Binary Contract. Upon such substitution, the buying and selling Participants shall be released from their Obligations to each other, and such Participants shall be deemed to have bought the Kalshi Binary Contract from or sold the Kalshi Binary Contract to the Clearing House, as the case may be, and the Clearing House shall have all the rights and be subject to all the liabilities of such Participants with respect to such Kalshi Binary Contracts. Such substitution shall be effective in law for all purposes. The Participants of the Kalshi Binary Contract are deemed to consent to the Novation by submitting the Kalshi Binary Contracts through KalshiEX, LLC to the Clearing House and the Clearing House consents to the Novation by accepting the Kalshi Binary Contract and performing the Clearing Services.

C. Kalshi Binary Contracts with the same terms and conditions, as defined by the specifications of the Kalshi Binary Contracts, submitted to the Clearing House for clearing, are economically equivalent within the Clearing House and may be offset with each other within the Clearing House.

D. Upon acceptance of a Kalshi Binary Contract by the Clearing House for clearing:

1. The original Kalshi Binary Contract is extinguished;
2. The original Kalshi Binary Contract is replaced by an equal and opposite Kalshi Binary Contract between the Clearing House and each Participant; and
3. All terms of a cleared Kalshi Binary Contract must conform to the Kalshi Binary Contract Specifications.

E. If a Kalshi Binary Contract is rejected for clearing by the Clearing House for any reason, such Kalshi Binary Contract is *void ab initio.*

Rule 13.2.2 Settlement of Kalshi Binary Contracts

A. The Company shall maintain, on its system, a record of each Kalshi Participant's account balances and Kalshi Binary Contracts.

B. On the Settlement Date, the Clearing House will notify all Kalshi Participants of the final amount payable.

Rule 13.2.3 Deposit Procedures

A. A Kalshi Participant must submit a deposit notification through the Kalshi Participant Portal before the Kalshi Participant may deposit funds with the Clearing House. A Kalshi Participant must deposit funds on the same day as the Kalshi Participant submits to the Clearing House a deposit notification to the Clearing House.

B. Deposits occur, and funds are available for use with respect to Clearing Privileges, no later than the next Settlement Bank Business Day after a Kalshi Participant submits a deposit notification and deposits funds with the Clearing House in accordance with Rule 13.2.3.A.

C. Kalshi Participants are responsible for all transfers of funds from their Clearing House-approved accounts to the Collateral Account.

D. In the event a Kalshi Participant deposits funds to the Clearing House without submitting a deposit notification, the Kalshi Participant agrees to: (1) cooperate with the Clearing House to resolve any issues that may arise; and (2) agree that the Clearing House will send the funds back to the account or address from which

it was transferred within two (2) Settlement Bank Business Days if there has been no resolution.

Rule 13.2.4 Withdrawal Procedures

A. Only an Authorized Representative may submit a withdrawal notification through the Kalshi Participant Portal before the Clearing House transfers funds to a Kalshi Participant. Upon receipt of a withdrawal notification, the Clearing House no longer permits funds in the amount listed in the withdrawal notification to be used for Clearing Privileges.

B. Kalshi Participants are responsible for providing accurate account numbers to allow the Clearing House to effect transfers to the Kalshi Participants.

C. Withdrawals occur, and funds are available, no later than the next Settlement Bank Business Day after a Kalshi Participant has submitted a withdrawal notification if the Kalshi Participant submits a withdrawal notification during Trading Hours.

D. If a Kalshi Participant fails to adhere to the withdrawal procedures set forth herein or in the Kalshi Binary Contract Specifications, as applicable, the Clearing House will take reasonable measures to effect the withdrawal; however, if unable to effect the withdrawal, the Kalshi Participant's collateral may become the sole property of the Clearing House, to the extent permitted by Applicable Law. The Clearing House may apply the collateral against the Obligations of a Kalshi Participant.

Rule 13.2.5 [**Reserved**]

Rule 13.2.6 Reconciliation

The Clearing House shall reconcile the positions and cash and collateral balances of each Kalshi Participant at the end of each Settlement Bank Business Day. The Clearing House shall make available to each Kalshi Participant through Kalshi the positions and cash and collateral balances of each such Kalshi Participant. All Kalshi Participants shall be responsible for reconciling their records of their positions and cash and collateral balances with the records of positions and cash and collateral balances that the Clearing House makes available to Kalshi Participants through Kalshi.

Rule 13.2.7 Swap Data Reporting

A. With the assistance of Kalshi and to the extent required by Applicable Law, the Clearing House shall report Regulatory Swap Data for Swaps to a single Swap Data Repository for purposes of complying with the CEA and applicable CFTC Regulations governing the regulatory reporting of swaps. The Clearing House shall report all data fields as required by Appendix A to Part 43 of CFTC Regulations and Appendix 1 to Part 45 of CFTC Regulations, as applicable, including, but not limited to, Swap counterparties, Kalshi Binary Contract type, option method, option premium, LEIs, User IDs, buyer, seller, USIs, unique product identifiers, underlying asset description, the Swap price or yield, quantity, maturity or expiration date, the size, settlement method, execution timestamp, timestamp of submission to the SDR, the CTI Code, Kalshi Participant Accounts, and whether a Kalshi Participant is a swap dealer, major swap Kalshi Participant or a financial entity. The Clearing House shall identify each counterparty to any Kalshi Binary Contract in all recordkeeping and all Regulatory Swap Data reporting using a single LEI as prescribed under CFTC Regulation 45.6. As soon as technologically practicable after execution, the Clearing House also shall transmit to both Swap counterparties and the Clearing House, the USI for the Swap created pursuant to CFTC Regulation 45.5 and the identity of the SDR. For Swaps involving allocation, the Clearing House will transmit the USI to the Reporting Counterparty and the agent as required by CFTC Regulation 45.5(d)(1).

B. The Clearing House shall from time to time designate a Swap Data Repository in respect of one or more Swaps and shall notify Kalshi Participants of such designation. Currently, the Clearing House reports all Regulatory Swap Data for all Swaps to ICE Trade Vault.

C. Kalshi Participants that become aware of an error or omission in Regulatory Swap Data for a Kalshi Binary Contract shall promptly submit corrected data to the Clearing House. Kalshi Participant shall not submit or agree to submit a cancellation or correction in order to gain or extend a delay in public dissemination of accurate Kalshi Binary Contract transaction and Pricing Data or to otherwise evade the reporting requirements of Part 43 of CFTC Regulations. Clearing House will report any errors or omissions in Regulatory Swap Data to the same SDR to which it originally submitted the Data, as soon as technologically practicable after discovery of any such error or omission.

D. The Clearing House sends the Regulatory Swap Data as set forth in Rule 13.2.7.A to the Swap Data Repository as soon as technologically practicable after a trade has been cleared, or pursuant to the Clearing House Rules. Following the transmittal of the Data to the Swap Data Repository, the Clearing House will make available the Swap Transaction and Pricing Data to all Kalshi Participants. However, due to transmission and posting timing of the Swap Data Repository, Kalshi Participants should be aware that the Kalshi Binary Contract transaction and Pricing Data may be available on the Clearing House Platform prior to being publicly disseminated by the Swap Data Repository.

Rule 13.3 Margin for Kalshi Binary Contracts

Rule 13.3.1 Full Collateralization of Kalshi Binary Contracts Required

Each Kalshi Participant shall deposit funds required to fully collateralize the Kalshi Binary Contract pursuant to Kalshi Binary Contract Specifications prior to submission of such Orders to Kalshi, and in all cases, prior to the submission of the Kalshi Binary Contract to the Clearing House. Collateral transfers made by a Kalshi Participant to the Clearing House or by the Clearing House to a Kalshi Participant are irrevocable and unconditional when effected.

Rule 13.3.2 Collateral

A. Subject to the terms and conditions of Clearing House-approved margin collateral, the Clearing House will accept from Kalshi Participants the following as margin collateral: U.S. Dollars. The Clearing House will value margin collateral as it deems appropriate.

B. Except as otherwise provided herein, Collateral must be and remain unencumbered. Collateral posted by Kalshi Participants shall be legally and operationally segregated from (i) the property of the Clearing House; (ii) the property of other members of the DCO, and (iii) customer property posted to the Clearing House that is not associated with Kalshi Binary Contracts (*i.e.,* when a Participant has been on-boarded separately both with the Company, acting in its capacity as a DCM and Kalshi, the DCO shall legally and operationally segregate the property posted by that participant at each separate DCM, as between the two DCMs).

C. Each Kalshi Participant posting collateral hereby grants to the Clearing House a continuing first priority security interest in, lien on, right of setoff against and collateral assignment of all of such Kalshi Participant's right, title and interest in and to any property and collateral deposited with the Clearing House by the Kalshi Participant, whether now owned or existing or hereafter acquired or arising, including without limitation the following: (i) such Kalshi Participant Account and all securities entitlements held therein and all funds held in a Collateral Account and (ii) all proceeds of the foregoing. A Kalshi Participant shall execute any documents required by the Clearing House to create, perfect and enforce such lien.

D. Each Kalshi Participant hereby agrees that with respect to any other financial asset which is or may be credited to the Kalshi Participant's Kalshi Participant Account, the Clearing House shall have control pursuant to Section 9–106(a) and 8–106(e) of the UCC and a perfected security interest pursuant to Section 9–314(a) of the UCC.

E. A Kalshi Participant must transfer the collateral to the Clearing House or to a Collateral Account and the Clearing House will hold collateral transferred to the Clearing House on behalf of the Kalshi Participant. The Clearing House will credit to the Kalshi Participant the collateral that such Kalshi Participant deposits. Collateral shall be held by the Clearing House until a Kalshi Participant submits a withdrawal notification unless otherwise stipulated by these Rules.

F. The Clearing House will not be responsible for any diminution in value of collateral that a Kalshi Participant deposits with the Clearing House. Any fluctuation in markets is the risk of each Kalshi Participant. Any interest earned on Kalshi Participant collateral may be retained by the Settlement Bank or the Clearing House.

G. The Clearing House has the right to liquidate a Person's Kalshi Binary Contracts or non-cash collateral to the extent necessary to close or transfer Kalshi Binary Contracts, fulfill obligations to the Clearing House or other Kalshi Participants, and/or to return collateral in the event that (1) the Person ceases to be a Kalshi Participant; (2) the Clearing House suspends or terminates the Person's Trading Privileges or Clearing Privileges; or (3) the Clearing House determines in its sole discretion that it is necessary to take such measures.

Rule 13.3.3 Segregation of Kalshi Participant Funds

The Clearing House shall separately account for and segregate from the Clearing House's proprietary funds all Kalshi Participant funds used to purchase, margin,

guarantee, secure or settle Kalshi Binary Contracts, and all money accruing to such Kalshi Participant as the result of Kalshi Binary Contracts so carried in a Collateral Account. The Clearing House shall maintain a proprietary account that will be credited with fees or other payments owed to the Clearing House that are debited from the Collateral Account as a result of Kalshi Participant trades and settlements of Kalshi Binary Contracts. The Clearing House shall maintain a record of each Kalshi Participant's account balances and Kalshi Binary Contracts. The Clearing House shall not hold, use or dispose of Kalshi Participant funds except as belonging to Kalshi Participants.

Rule 13.3.4 Concentration Limits

The Clearing House may apply appropriate limitations or charges on the concentration of assets posted as collateral, as necessary, in order to ensure its ability to liquidate such assets quickly with minimal adverse price effects, and may evaluate the appropriateness of any such concentration limits or charges, on a periodic basis. In the event that the Clearing House determines in its sole discretion that the Kalshi Participant's deposit is in material excess of the amount necessary to collateralize the Kalshi Participant's Kalshi Binary Contracts, the Clearing House shall have the right to (1) transfer non-cash collateral, including Digital Currencies, back to a Kalshi Participant, and Kalshi Participant agrees to accept such transfer, or (2) take other action the Clearing House deems to be necessary to safeguard the collateral. The Clearing House shall be entitled to charge fees related to holding non-cash collateral in material excess of the amount necessary to collateralize a Kalshi Participant's Kalshi Binary Contracts.

Rule 13.4 Clearing House Systems and Collateral.

Clearing House shall maintain information systems that track the amount of available collateral held from time to time by Kalshi Participants at Clearing House or Clearing House's settlement bank and make such information available to Kalshi to the same extent it is available to Clearing House so that Kalshi's automated systems can apply such information in the relevant systems to perform its functions.

Rule 13.5 LedgerX API.

In order to provide the Clearing Services, Kalshi shall have and will maintain in effect an operational interface between its systems and the relevant systems of Clearing House. Clearing House shall maintain and support an Application Programming Interface ("Clearing House API"), to enable the transmission of data as necessary to provide Clearing Services.

Rule 13.6 Other Rules That Are Applicable To Kalshi Participants.

All Rules in this Chapter 13 apply to the Clearing Services for Kalshi Binary Contracts.

In addition, the following specific Rules apply to Kalshi Participants, as if they were Participants, and the Kalshi Binary Contracts, provided, however that such Rules are applicable only to the extent that such Rules are related to Clearing Services:

A. Chapter 1 (Definitions)

B. Chapter 2 (Company Governance)

C. Rule 3.1 (Jurisdiction, Applicability of Rules)

D. Rule 3.2 (Participants—Applications, Agreements, Eligibility Criteria, Classifications and Privileges), provided that Kalshi Participants are Participants only with regard to Clearing Services.

E. Rule 3.3 (Participant Obligations), provided that Kalshi Participants have Participant Obligations only with regard to Clearing Services.

F. Rule 8.5 (Acts Detrimental to the Welfare or Reputation of the Company Prohibited) and Rule 8.6 (Misuse of the Platform)

G. Rule 8.19 (Compliance)

H. Chapter 9 (Discipline and Enforcement), but only with regard to Clearing Services.

I. Chapter 11 (Miscellaneous), including Rule 11.2; Rule 11.3; Rule 11.4; Rule 11.5; Rule 11.6; Rule 11.7; Rule 11.9; and Rule 11.13, but only with regard to the Clearing Services.

Rule 13.7 Other Rules That Are Not Applicable To Kalshi Participants.

The following rules do not apply to Kalshi Participants, as such rules or related rules are set forth in the rules of Kalshi:

A. Rule 3.4 (Customer Account Requirements for FCM Participants)

B. Chapter 4 (Liquidity Providers)

C. Chapter 5 (Method for Trading Company Contracts)

D. Chapter 6 (Clearing and Delivery), but see Rules 13.2, *et. seq*.

E. Chapter 7 (Margin), but see Rules 13.3, *et. seq*.

F. Chapter 8 of this Rulebook does not apply to Kalshi Participants, except for Rules 8.5, 8.6, and 8.19 as set forth in Rule 13.6. For the avoidance of doubt, Kalshi is responsible for all trade practice related activity on its exchange; Clearing House is not responsible for trade practice surveillance.

G. Chapter 9, except as to Investigations, Discipline and Enforcement related to Clearing Services.

H. Chapter 10, except as applied to Clearing Services.

I. Rules 11.8 (Error Trade Policy), 11.10 (Reasonability Levels), and 11.11 (No Cancellation Ranges), provided, however, that Clearing House and Kalshi shall coordinate with regard to Error Trade pursuant to the rules of Kalshi.

J. Chapter 12 does not apply to Kalshi Participants.

Rule 13.8 Liability

For the avoidance of doubt, Clearing House shall not have any liability for trading issues on Kalshi, as it is only providing Clearing Services to Kalshi Participants.

Rule 13.9 ***Limitation of Liability; No Warranties for Clearing Services***

A. **Except as otherwise set forth in the rules, or due to clearing house obligations arising from the act or CFTC regulations, including part 39 of the CFTC regulations, or otherwise under applicable law, neither the clearing house nor any of its clearing house representatives, affiliates or affiliates' representatives shall be liable to any person, or any partner, director, officer, agent, employee, authorized user or authorized representative thereof, for any loss, damage, injury, delay, cost, expense, or other liability or claim, whether in contract, tort or restitution, or under any other cause of action, suffered by or made against them as a result of their use of some or all of the clearing services, such persons expressly agree to accept all liability arising from their use of same as well as their use of Kalshi.**

B. **Except as otherwise set forth in these rules or due to clearing house obligations arising from the act or CFTC regulations, including part 39 of the CFTC regulations, or otherwise under applicable law, neither the clearing house nor any of its clearing house representatives, affiliates or affiliates' representatives shall be liable to any person, or any partner, director, officer, agent, employee, authorized user or authorized representative thereof, for any loss, damage, injury, delay, cost, expense, or other liability or claim, whether in contract, tort or restitution, or under any other cause of action, suffered by or made against them, arising from (a) any failure or non-availability of the Kalshi or the platform; (b) any act or omission on the part of the clearing house, clearing house representatives, affiliates or affiliates' representatives including without limitation a decision of the clearing house to suspend, halt, or terminate trading or to void, nullify or cancel orders or trades in whole or in part; (c) any errors or inaccuracies in information provided by the clearing house, affiliates, the platform or Kalshi; (d) unauthorized access to or unauthorized use of the platform or Kalshi by any person; (e) any force majeure event affecting the clearing house or a Kalshi binary contract; or (f) any loss to any Kalshi participant resulting from a Kalshi participant's own security or the integrity of a Kalshi participant's technology or technology systems. This limitation of liability will apply regardless of whether or not the clearing house, any clearing house representatives, any clearing house affiliates or affiliates' representatives (or any designee thereof) was advised of or otherwise might have anticipated the possibility of such damages.**

C. **A person's use of the platform, Kalshi, clearing house property and any other information and materials provided by the clearing house is at the person's own risk, and the platform, the clearing house property and any other information and materials provided by the clearing house hereunder are provided on an "as is" and "as available" basis, without warranties or representations of any kind, express or implied, by statute, common law or otherwise, including all implied warranties of merchantability, fitness for a particular purpose and non-infringement, and any warranties arising from a course of dealing, usage or trade practice. The clearing house does not guarantee that (a) the clearing house property or the platform will operate in an error-free, secure or uninterrupted manner; (b) any information or materials provided by the clearing house or accessible through the clearing house property or the platform will be accurate, complete, reli-**

able, or timely; or (c) the clearing house property or any aspects of the platform will be free from viruses or other harmful components. The clearing house shall have no liability for the creditworthiness of any person or for the acts or omissions of any person utilizing the platform or any aspect of the clearing house or platform. A person accessing the clearing house is solely responsible for the security and integrity of the person's technology. A person's access to the clearing house may be internet-based and the clearing house has no control over the internet or a person's connections thereto. Any person accessing the clearing house acknowledges that the internet, computer networks, and communications links and devices necessary to enable a person to access and use the platform are inherently insecure and vulnerable to attempts at unauthorized entry and that no form of protection can ensure that a Kalshi participant's data, hardware, or software or the platform or other clearing house property will be fully secure. Furthermore, the clearing house shall have no obligation to monitor or verify any information displayed through the platform.

D. **A Kalshi participant that deposits collateral for its benefit with the clearing house pursuant to these rules shall hold the clearing house harmless from all liability, losses and damages which may result from or arise with respect to the care and sale of such collateral provided that the clearing house has acted reasonably and in accordance with applicable law under the circumstances. Furthermore, the clearing house has no responsibility for any act or omission of any third party service provider that the clearing house has chosen with reasonable care. The clearing house has no responsibility or liability for any loss of collateral that results, directly or indirectly, from a breach to a Kalshi participant's security or electronic systems, including but not limited to cyber attacks, or from a Kalshi participant's negligence with respect to a wallet, address or the receipt of collateral upon the request of a withdrawal, or from a Kalshi participant's deposit, mistake, error, negligence, or misconduct with respect to any collateral transfers a Kalshi participant makes or attempts to make to the clearing house.**

E. **No Kalshi participant, authorized user, authorized representative or any other person shall be entitled to commence or carry on any proceeding against the clearing house, any of its clearing house representatives, affiliates or affiliates' representatives, in respect of any act, omission, penalty or remedy imposed pursuant to the rules of the clearing house. This section shall not restrict the right of such persons to apply for a review of a direction, order or decision of the clearing house by a competent regulatory authority.**

F. **Notwithstanding anything to the contrary herein, in no event shall the clearing house or any of its clearing house representatives, affiliates or affiliates' representatives be liable for any indirect, incidental, consequential, punitive or special damages (whether or not the clearing house or any such person had been informed or notified or was aware of the possibility of such damages).**

G. **Any claim for redress or damages hereunder shall be filed in a court of competent jurisdiction within one year of the date on which such claim allegedly arose. Failure to institute litigation within such time period shall be deemed to be a waiver of such claim and the claim shall be of no further force or effect. The allocations of liability in this 13.8 rule represent the agreed and bargained for understanding of the parties, and each party acknowledges that the other party's rights and obligations hereunder reflect such allocations. The parties agree that they will not allege that this remedy fails its essential purpose.**

H. **The limitations on liability in this Rule 13.8 shall not protect any party for which there has been a final determination (including exhaustion of any appeals) by a court or arbitrator to have engaged in willful or wanton misconduct or fraud. Additionally, the foregoing limitations on liability of this rule shall be subject to the CEA and the regulations promulgated thereunder, each as in effect from time to time.**

Rule 13.10 Approved Kalshi Binary Contract Specifications

Chapter 14 Default

Rule 14.1 Defaults

If any of the following events shall occur with respect to any Participant (regardless of whether any such event is cured by any guarantor or other third party on behalf of such Participant or otherwise):

A. If such Participant fails to meet any of its obligations under its Company Contracts with the Company;

B. If such Participant fails to pay any assessments levied upon it by the Company when and as provided in these Rules, including Rule 7.1;

C. If such Participant fails to deposit with, pay to, or maintain with the Company in full any Initial Margin, Variation Margin or other sum (not including any dues, fees, or fines) under or in connection with any Company Contract, when and as required by or pursuant to the Rules, including Rule 7.1;

D. If such Participant fails to maintain with the Company sufficient net assets in the Participant's Company account to satisfy the minimum Maintenance Margin requirements, and the Company is unable to liquidate the Participant's positions on its central limit order book, as set forth in Rule 7.1.D;

E. If the Company shall determine that such Participant is not in compliance with the provisions of Rule 3.2;

F. If such Participant commences a voluntary or a joint case in bankruptcy or files a voluntary petition or an answer seeking liquidation, reorganization, arrangement, readjustment of its debts or any other relief for the benefit of creditors under any bankruptcy or insolvency act or law of any jurisdiction, now or hereafter existing, or if such Participant applies for or consents to the appointment of a custodian, liquidator, conservator, receiver or trustee (or other similar official) for all or a substantial part of its property; or if such Participant makes an assignment for the benefit of creditors; or if such Participant becomes or admits that it is insolvent;

G. If an involuntary case is commenced against such Participant in bankruptcy or an involuntary petition is filed seeking liquidation, reorganization, arrangement, readjustment of its debts or any relief for the benefit of creditors under any bankruptcy or insolvency act or law of any jurisdiction, now or hereafter existing; or if a custodian, liquidator, receiver or trustee (or other similar official) of the Participant is appointed for all or a substantial part of its property;

H. If a warrant of attachment, execution or similar process is issued against any substantial part of the property of the Participant;

I. If the Securities Investor Protection Corporation files an application for a protective decree with respect to such Participant;

J. If such Participant holds a short futures contract position and does not tender a delivery notice on or before expiration, or fails to make delivery by the time specified in these Rules; or

K. If such Participant holds a long futures contract position and does not accept delivery or does not make full payment when due as specified in these Rules;

then, and in any such event, an "**Event of Default**" has occurred and the Company may (but is not required to) determine that such Participant shall be suspended as a Participant.

Rule 14.2 Liquidation or Termination or Suspension of Participant

A. When a Person ceases to be a Participant or is suspended by the Company, all open Company Contracts carried by the Company for such Participant shall be liquidated in the manner set forth in Rule 14.3 as expeditiously as is practicable unless and to the extent that:

a. Such open Company Contracts are transferred by the Participant and accepted by one or more other Participants, with the prior consent of the Company, or transferred by the Company to one or more other Participants pursuant to an auction or other procedure instituted by the Company;

b. The CRO, consistent with the guidance of the Risk Management Committee and in consultation therewith, as appropriate determines that the protection of the financial integrity of the Company does not require such a liquidation; or

c. Such liquidation is delayed because of the cessation or curtailment of trading in such Company Contracts on the Company DCM.

B. If it is determined pursuant to paragraph (a)(ii) of this Rule 14.2 not to liquidate any open Company Contracts of a Person, or if the Company is unable for any reason to liquidate such open Company Contracts in a prompt and orderly fashion, if the Company determines to delay such liquidation, or if the Company otherwise determines it is appropriate to do so for the protection of the Company or its other Participants, the CRO, consistent with the guidance of the Risk Management Committee and in consultation therewith as appropriate, may authorize the execution from time to time for the account of the Company, solely for the purpose of reducing the risk to the Company resulting from the continued maintenance of such open Participant Company Contracts, hedging transactions, including, without limitation, the purchase, grant or sale of Company Contracts or other agreements or instruments (and the modification or termination of such transactions from time to time). Such officers may delegate to one or more persons the authority to determine, within such guidelines as such officers shall prescribe, the nature and timing of such hedging transactions. Any costs or expenses, including losses, sustained by the Company in connection with transactions effected for its account pursuant to this paragraph shall be charged to such Person (which amounts, if such Person is a Defaulting Participant, shall constitute part of the Defaulted Obligation), and any gains, net of any costs and expenses, shall be credited to such Person.

Rule 14.3 Method of Closing Out Open Company Contracts

A. The open Company Contracts of any Participant which, pursuant to (i) Rule 7.1 for failing to deposit or maintain the minimum Initial Margin, Variation Margin, or Maintenance Margin in the Participant's account at any time or failing to satisfy any Maintenance Margin requirement, or (ii) Rule 14.2, are required to be liquidated pursuant to this Rule 14.3, shall be treated in such manner as the Company, in its discretion, may direct. Without limiting the generality of the foregoing:

a. Any such liquidation may be effected by directly entering to the Company DCM's trading platform, limit orders and marketable limit orders for the purchase, grant, exercise, or sale of Company Contracts.

b. Company Contracts on opposite sides of the market, having different expiration months, may be liquidated by spread or straddle transactions (regardless of whether they are held for different accounts or different beneficial owners).

c. The Person whose Company Contracts are liquidated shall be liable to the Company for any commissions, fees, or other expenses incurred in liquidating such Company Contracts.

B. If the Company determines that it is not practicable or advisable under the circumstances in light of liquidity, open interest, market conditions or other relevant factors to liquidate or attempt to liquidate some or all of a Participant's open Company Contracts pursuant to Rule 14.3.A, the Company may, at its discretion, transfer a Participant's Company Contracts to a Backstop Liquidity Provider. The Backstop Liquidity Provider shall take the open positions from the Participant's Company Contracts in such quantity as agreed between the Company and the Backstop Liquidity Providers.

C. Partial Tear-Up ("Secondary BLPs"). If the Company determines that it is not practicable or advisable under the circumstances in light of liquidity, open interest, market conditions or other relevant factors to liquidate or attempt to liquidate some or all of a Participant's net open Company Contracts pursuant to Rule 14.3.A, the Company may, at its discretion, implement the partial tear-up of open positions of Participants not in Default ("Non-Defaulting Tear-Up Positions" of "Secondary BLPs") that offset the positions of Participants in Default that have not yet been liquidated ("Defaulted Positions"). The Company will determine and designate the Non-Defaulting Tear-Up Positions pursuant to the following methodology:

a. The Company will only designate Non-Defaulting Tear-Up Positions in the identical Company Contracts (on the opposite side of the market) and in an aggregate amount equal to that of the remaining open Company Contract positions.

b. The Company will designate Non-Defaulting Tear-Up Positions in a particular Company Contract starting with Participants who hold the largest number of open positions that offset Defaulted Positions (*i.e.,* the Secondary BLPs).

c. Both Defaulted Positions and offsetting Non-Defaulting Tear-Up Positions shall be automatically terminated at the Partial Tear-Up Price, without need for any further stop by any party to such Company contract.

d. The Partial Tear-Up Price shall be deemed to be the price that would set the Defaulted Participant's account value to zero.

D. If the Company determines that it is not practicable or advisable under the circumstances in light of liquidity, open interest, market conditions or other relevant factors to liquidate or attempt to liquidate some or all net open Company Contracts pursuant to Rule 14.3.A, the Company may at its discretion determine to liquidate such net open Company Contracts pursuant to one or more default auctions (each a "Default Auction") to be conducted by the Company pursuant to the default auction procedures of the Company as in effect at the relevant time ("Default Auction Procedures"). The Company may also determine to liquidate some or all net open Company Contracts pursuant to one or more auctions not conducted under Default Auction Procedures in which participation by Participants or others will be voluntary ("Alternative Auctions"), on such other terms and conditions consistent with these Rules as are determined by the Company with the goal of facilitating a successful auction in light of the particular Company Contracts and positions to be auctioned, the prevailing market conditions for such Company Contracts and positions (including the depth, scope and nature of participation in such markets), and such other factors as the Company determines appropriate. The Company shall provide reasonable advance notice to qualifying Participants of an Alternative Auction and the terms and conditions on which it is to be conducted.

E. If the Company determines that it is not practicable or advisable under the circumstances in light of liquidity, open interest, market conditions or other relevant factors to carry out the steps set forth in this Rule 14.3.A through Rule 14.3.D, the Company's automated systems will immediately apply guaranty fund resources (the "Guaranty Fund"), provided by the Company's own capital, via internal ledger transactions whenever to address monetary shortfalls resulting from a default.

F. Only after carrying out the steps set forth in this Rule 14.3.A through Rule 14.3.E, the Company will, in the following order:

a. Variation Margin Haircuts

i. The Company may notify Participants and provide an opportunity for Participants to make voluntary contributions to the DCO.

ii. If the Participant holds excess Variation Margin in its account(s) with respect to remaining open Company Contracts following the last settlement cycle conducted, the DCO shall, in consultation with the Risk Management Committee, apply haircuts in a proportional manner to excess Variation Margin so as to contribute unrealized gains from the Participant's account to the DCO for the current settlement cycle and each successor settlement cycle on the current Business Day.

b. Full Tear-Up

i. The Company may notify Participants and provide an opportunity for Participants to voluntarily agree to have their positions extinguished by the DCO.

ii. If positions in Company Contracts of a defaulted Participant remain open (the "Remaining Open Positions") following the last settlement cycle conducted, the Company shall extinguish the Remaining Open Positions through a full tear-up process ("Full Tear-Up") of all open positions of non-defaulted Participants in Company Contracts.

c. **No persons shall have any claim or right against the company regarding the timing of liquidation or the manner in which or the price at which company contracts have been liquidated pursuant to this Rule 14.3.**

d. References in this Rule 14.3 to the liquidation of Company Contracts shall include liquidation, termination or adjustment of any related hedging transactions entered into pursuant to Rule 14.2 (b).

Rule 14.4 Amounts Payable to the Company

Upon completion of the liquidation or transfer of the positions of a Person pursuant to Rule 14.3, the Company shall be entitled on demand to recover from such Person all amounts due to the Company for all losses, liabilities and expenses (including without limitation legal fees and disbursements and costs and expenses incurred by the Company in liquidity, borrowing or other necessary actions) incurred by the Company in connection with such liquidation or transfer.

Rule 14.5 Insolvency of the Company

If at any time the Company: (i) institutes or has instituted against it a proceeding seeking a judgment of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency law or other similar law affecting creditors' rights, or a petition is presented for its winding up or liquidation, and, in the case of any such pro-

ceeding or petition presented against it, such proceeding or petition results in a judgment of insolvency or bankruptcy or the entry of an Order for Relief or the making of an order for the Company winding-up or liquidation, or (ii) approves resolutions authorizing any proceeding or petition described in clause (i) above (collectively, a "Bankruptcy Event"), all open positions in the Company shall be closed promptly in accordance with Rule 14.8.

Rule 14.6 Default of the Company

If at any time the Company fails to comply with an undisputed obligation to pay money or deliver property to a Participant that is due and owing in connection with a transaction cleared by the Company, for a period of thirty calendar days from the date that the Company receives notice from the Participant of the past due obligation (any such event or a Bankruptcy Event, a "Company Default"), all open positions of the Company shall be closed promptly in accordance with Rule 14.8.

Rule 14.7 Wind-Up of Company Contracts

If at any time the Board determines, by virtue of the number of Withdrawing Participants or otherwise, that a winding up (offset) of all outstanding positions at the Company is prudent or desirable or that the Company's clearing service should be terminated, then all open positions at the Company shall be closed promptly in accordance with Rule 14.8.

Rule 14.8 Netting; Offset

At such time as a Participant's positions are closed, the obligations of the Company to such Participant in respect of the Participant's proprietary positions, accounts, collateral and guaranty fund deposits shall be netted against the obligations of such Participant to the Company and to the Company DCM in respect of its proprietary positions, accounts, collateral, and any obligations to guarantee funds without respect to product category. This netting shall be performed in accordance with the Bankruptcy Code, the CEA and the regulations promulgated thereunder. All positions open immediately before being closed in accordance with this Rule shall be valued in accordance with Rule 14.9.

Rule 14.9 Valuation

A. As promptly as reasonably practicable, but in any event within thirty days of the: (i) Bankruptcy Event, or (ii) if a Participant elects to have its open positions closed in a default as described in Rule 14.6, the date of the election, the Company shall, in a manner that is consistent with the requirements of the CEA and the regulations adopted thereunder (including, without limitation) Part 190 of CFTC Regulations, fix a U.S. dollar amount (the "Close-out Value") to be paid to or received from the Company by each Participant, after taking into account all applicable netting and offsetting pursuant to Rule 14.8.

B. The Company shall value open positions subject to close-out by using the market prices for the relevant market (including without limitation, any over the counter markets) at the moment that the positions were closed-out, assuming the relevant markets were operating normally at such moment. If the relevant markets were not operating normally at such moment, the Company shall exercise its discretion, acting in good faith and in a commercially reasonable manner, in adopting methods of valuation to produce reasonably accurate substitutes for the values that would have been obtained from the relevant market if it had been operating normally at the moment that the positions were closed-out.

C. If a default of a Participant has also occurred, and the Company has not fully liquidated (or transferred) all of the Participant's positions, the Company shall value open positions subject to close-out by using the prices that were determined pursuant to the final settlement cycle that was conducted.

D. In determining a Close-out Value, the Company may consider any information that it deems relevant. Amounts stated in a currency other than U.S. Dollars shall be converted to U.S. Dollars at the current rate of exchange, as determined by the Company. If a Participant has a negative Close-out Value it shall promptly pay that amount to the Company.

Item 08—CFTC Request for Comment on FTX Request for Amended DCO Registration Order

The Commodity Futures Trading Commission (Commission) has received inquiries from derivatives clearing organizations (DCO) or potential DCO applicants seeking to offer clearing of margined products directly to participants, such that participants would not clear through a futures commission merchant (FCM) intermediary (non-intermediated model). LedgerX, LLC d.b.a. FTX US Derivatives (FTX), has submitted a request to amend its order of registration as a DCO to allow it to modify its existing non-intermediated model. FTX currently clears futures and options on futures contracts on a fully collateralized basis. FTX proposes to clear margined products while continuing with a non-intermediated model.

Current DCO clearing models

Fifteen DCOs are currently registered with the Commission. The majority of DCOs operate under a model that includes three characteristics that are significant for present purposes: margined products, intermediated clearing, and mutualized losses.

A margined product is one for which the DCO only collects a portion of the possible losses the counterparty could incur while holding the position. Therefore, a DCO that offers margined products is exposed to the risk that a counterparty will default, leaving the DCO to cover its obligations to the counterparty holding the other side of the position. To ensure it has sufficient resources, a DCO employs a margin model to determine initial margin requirements and maintains financial resources to be used in a predetermined order (default waterfall) to cover any losses from a default. Currently four DCOs, including FTX, clear only non-margined, fully collateralized trades. In a fully collateralized trade, the DCO holds as collateral 100 percent of the potential losses a counterparty could incur and the DCO is thus not exposed to the risk of a counterparty default.

At an intermediated DCO, only FCMs (and potentially some large proprietary traders) are direct clearing members of the DCO. Most market participants are customers of an FCM that is a clearing member and guarantees the customers' obligations to the DCO. This model provides DCOs with additional protections against a customer default and relieves customers of some of the operational and financial costs of being a clearing member. At a non-intermediated DCO, all market participants are clearing members. Currently, the four DCOs clearing fully collateralized products operate a non-intermediated model. Additionally, ICE NGX Canada Inc. (ICE NGX), operates a non-intermediated model for margined products.[1] ICE NGX has minimum financial standards for clearing members that limit membership to individuals or entities with a high net worth or that own substantial assets.[2]

When a DCO mutualizes losses in its default waterfall, the risk of loss from a default is shared by all clearing members. Typically, the default waterfall includes funds from all clearing members in the form of a guaranty fund that can be used to cover default losses that exceed the defaulting clearing member's resources. Guaranty fund contributions are used even when the contributing clearing member is not in default. These funds are usually required to be on deposit at the DCO before a default happens. Some DCOs are able to call for additional funds, through clearing member assessments, to cover losses in excess of the prefunded resources. Of the DCOs that offer margined products,[3] only ICE NGX does not mutualize losses among its clearing members in this way.[4] Instead, ICE NGX covers losses in excess of the margin it collects by holding a portion of its own capital in reserve and maintaining a line of credit backed by a default insurance policy.[5]

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[1] *ICE NGX Clearing and Settlement, https://www.theice.com/ngx/clearing-settlement* (last visited. Feb. 25, 2022)

[2] *ICE NGX New Customer Sign-Up, https://www.theice.com/ngx/new-customer-sign-up,* (last visited Feb. 25, 2022); Specifically, ICE NGX limits its participants to those with a net worth exceeding CAD $5,000,000 or total tangible assets exceeding CAD $25,000,000. This differs from the "Eligible Contract Participant" standard contained in the Commodity Exchange Act, see 7 U.S.C. § 1a(18), but is similarly used to exclude retail participation.

[3] Because fully collateralized DCOs do not face the risk of a clearing member default, there are no losses to mutualize and the concept does not apply.

[4] *ICE NGX Clearing and Settlement, https://www.theice.com/ngx/clearing-settlement.*

[5] *Id.*

FTX proposal

FTX has requested an amended order to permit it to clear non-intermediated, margined products. FTX intends to offer its products to retail participants, and its financial and operational requirements for participants only require that the participant be able to post the margin required for a given position.

FTX's model does not contemplate receiving any funds from a participant not on deposit when the trade is executed. FTX has two margin requirements for its participants, the initial margin requirement and the maintenance margin requirement. The initial margin requirement is the amount of margin the participant must post to open a position. Maintenance margin is a set minimum percentage of the notional value of the portfolio that the margin on deposit must exceed. A participant's margin level is recalculated every 30 seconds as positions are marked to market, and if the collateral on deposit falls below the maintenance margin level, FTX's automated system will begin to liquidate the portfolio. The automated system will liquidate 10 percent of a portfolio at a time by placing offsetting orders on the central limit order book. Once the liquidation process results in collateral on deposit that exceeds the maintenance margin requirement, the liquidation will stop. Because the liquidation is done automatically and positions are marked to market every 30 seconds, these liquidations can occur at any time, on a "24–7" basis.

Below the maintenance margin threshold, FTX will also set a "full liquidation" threshold based on a set percentage of the notional value of the positions. If the margin on deposit falls below that threshold, FTX will liquidate the remainder of the portfolio. To fully liquidate a portfolio, FTX intends to enter into agreements with backstop liquidity providers who agree ahead of time to accept a set amount of positions if a portfolio needs to be completely liquidated, and who will receive the remaining margin for the position once the full liquidation threshold is hit. FTX will also fund a guaranty fund with $250 million of its own capital to cover any losses incurred on positions beyond those accepted by the backstop liquidity providers. FTX will also use its guaranty fund to reimburse the backstop liquidity providers when the participant's margin does not cover the value of the portfolio acquired by the backstop liquidity providers. FTX does not propose to mutualize losses among its participants in its default waterfall.

Questions

DCO rules

(1) The Commission's regulations require a DCO to hold enough financial resources to meet its obligations after a default by the clearing member creating the largest financial exposure for the DCO in extreme but plausible market conditions (Cover-1 standard).[6] The Cover-1 standard was calibrated based on the assumption that the DCO will be intermediated and that the clearing member creating the largest exposure will represent a significant amount of the risk a DCO faces. In a non-intermediated model where retail participants are direct clearing members, the significance of a default by the single participant presenting the largest exposure will likely be much smaller.

(a) What standard, other than Cover-1, would be appropriate to meet the requirement in Core Principle B that a DCO "shall have adequate financial . . . resources, as determined by the Commission," to meet its responsibilities in extreme but plausible market conditions in a non-intermediated model?[7]

(b) In addition to characteristics about the products and specific portfolios, what metrics or market characteristics (such as the distribution of participant exposures and the number and size of market makers) should be taken into consideration when determining whether Core Principle B has been adequately satisfied by the DCO's identified resources?

(c) The Cover-1 standard requires financial resources that will ensure adequate coverage in extreme, but plausible conditions. Are there scenarios or types of market events that could have an extreme effect on a non-intermediated market with near real-time settlement that would not have an extreme effect on intermediated markets?

(d) Are there unique position or risk limits that the Commission should require a DCO to impose on its participants in a non-intermediated model?

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[6] 17 CFR § 39.11(a)(1).
[7] 7 U.S.C. § 7a–1(c)(2)(B).

(2) Are there tools commonly used after a default for intermediated markets (*e.g.,* variation margin gains haircutting or partial tear up) that would not be applicable, or even counterproductive, in the case of a non-intermediated model? Are there tools that would remain applicable in a non-intermediated model, but need adjustments to ensure effectiveness? If so, what are these and what would be the necessary revisions?

(3) FTX has proposed to size its financial resources to cover a default by up to the three clearing members that create the largest exposure for the DCO. FTX will first calculate its financial resources based on a Cover-1 standard. If the Cover-1 clearing member does not represent at least 10% of the initial margin on deposit, FTX will calculate its financial resources based on a Cover-2 standard. If the Cover-2 clearing members do not collectively account for 10% of the initial margin on deposit, then FTX will apply a Cover-3 standard to size its financial resources.

(a) Does FTX's proposal provide an adequate level of financial resources to protect the DCO and its participants in the event of a default?

(b) Does the likelihood of more frequent, but smaller, defaults under FTX's model decrease the effectiveness of a Cover-1 (or -2 or -3) standard?

(c) FTX does not intend to mutualize the risk of loss following a default among all participants, and will fund a default fund with its own capital. Does the non-mutualized aspect of the proposed clearing model present any unique risks to the DCO?

(4) FTX's proposal limits its participants' financial and operational obligations to ensuring adequate initial margin is on deposit prior to entering an order. Does FTX's approach, when considered in light of its proposed methodology for liquidating participant portfolios, adequately protect the integrity of the DCO?

(5) Regulation 39.12(a) also requires a DCO to establish minimum capital requirements for clearing members. Given that FTX participants would have no obligations to FTX other than posting initial margin, does this requirement serve a risk management purpose in this context?

FCM rules

(6) What potential market structure issues may arise from the establishment of a non-intermediated model for retail participants in which transactions are not fully collateralized? What potential impacts, if any, would these issues have on FCMs or on existing markets with FCM intermediation?

(7) Due to the absence of FCMs, the participants' collateral in a non-intermediated model is not required to be segregated under section 4d of the CEA.[8] The orders of registration for DCOs offering a non-intermediated model require the DCO to hold funds of its participants as member property, as that term is defined by the Bankruptcy Code.[9] Is this protection sufficient for participants' funds if a DCO begins to offer margined products?

(8) Commission regulations require FCMs to ensure that customers receive certain protections when they participate in the futures markets. Should participants in a non-intermediated model be afforded the same or similar customer protections? Which customer protections should the DCO be required to provide to participants?

(a) Should a DCO offering a non-intermediated model be required to provide participants with the standard customer risk disclosures statements contained in Regulation 1.55? If so, should the standard customer risk disclosure statement be modified in light of the trading and clearing structure?

(b) For FTX's proposal, are different modifications needed due to its process and rules regarding the liquidation of participant accounts? If so, how should the standard risk disclosure statement be revised?

(c) Should a DCO offering a non-intermediated market be required to make certain financial information publicly available on its website consistent with Regulation 1.55 so that current and prospective participants have information regarding the firm? If so, which information should be publicly available?

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[8] 7 U.S.C. § 6d.
[9] 11 U.S.C. § 761(16).

(d) Should a DCO offering a non-intermediated model be required to provide participants with daily trade confirmations and monthly account statements in the form and manner specified in Regulation 1.33?

(e) Should a DCO offering a non-intermediated model investment of participant funds be subject to the list of permitted investments under Regulation 1.25?

(f) Should a DCO offering a non-intermediated model be subject to limitations on the use of participant funds in a manner consistent with the restrictions that Regulation 1.20 places on FCMs?

(g) Should a DCO offering a non-intermediated model be subject to regulatory notice provisions in a manner similar to Regulation 1.12? If so, what notice provisions should apply to FTX?

(h) Should a DCO offering a non-intermediated model be subject to daily reporting of the holding of participant funds in a manner similar to Regulation 1.32?

(9) Should a DCO offering a non-intermediated model be subject to the capital requirements applied to FCMs in addition to, or as an alternative to, DCO and DCM financial resources requirements?

(a) Would the Commission's risk-based capital requirement for FCMs in Regulation 1.17 be the most appropriate financial resources requirement for a DCO offering a non-intermediated model if it is approved to be a DCO that directly clears margined products for retail participants without an FCM guarantee? [10]

(b) If a DCO offering a non-intermediated model is subject to a risk-based capital requirement based on the risk margin amount of its participants' accounts, should the percentage be higher than eight percent to reflect that the DCO will only hold margin for its listed products and not diverse positions across multiple exchanges?

(c) Regulation 1.17 requires FCMs to maintain a sufficient amount of unencumbered liquid assets (after application of haircuts) that are in the possession or control of the FCM to cover each dollar of the FCM's obligations. If this type of financial resources requirement is applied to a DCO offering a non-intermediated model, should that requirement also consider the composition of the DCO's capital?

(d) For FTX's proposal, if a risk margin amount threshold is applied to FTX's minimum financial resources requirement, should the percentage of risk margin required be set at a higher percentage than eight percent, given that FTX's participants would not be required to contribute financial resources to the DCO beyond their required initial or maintenance margin amounts?

(10) FTX's current order of registration requires it to comply with anti-money laundering laws and regulations as if it were a covered "financial institution" under applicable law.[11] Do FTX's proposed changes present any additional risks that would require additional anti-money laundering requirements?

(11) Are there any FCM requirements not already discussed that a DCO offering a non-intermediated model should be required to meet?

FTX proposals

(12) When a participant's margin on deposit falls below the maintenance margin level, FTX is proposing to have an automated system immediately liquidate the participant's portfolio to the extent necessary to come into compliance with margin requirements. FTX's system will check margin levels, and when necessary liquidate positions, on a 24 hours a day/7 days a week basis.

(a) Does liquidating positions without requesting additional funds from the participant present risks or concerns in a regulated market?

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[10] 17 CFR § 1.17.

[11] Specifically it must comply with the Bank Secrecy Act (31 U.S.C. § 5311 et seq.), the International Emergency Economic Powers Act (50 U.S.C. § 1701 et seq.), the Trading with the Enemy Act (50 U.S.C. § 4301 et seq.), and the executive orders and regulations issued pursuant thereto, including the regulations issued by the U.S. Department of the Treasury and, as applicable, the Commission, as if [FTX] were a covered "financial institution" within the meaning of 31 CFR § 1010 et seq.

(b) Given the real-time liquidation, are participant protections necessary beyond disclosures regarding the rules and liquidation process employed by FTX? If so, what other protections should be required?

(c) Are there risks to a model that is designed to result in more frequent, but smaller, defaults than traditionally occur in cleared markets?

(d) Are there concerns about an automated system's ability to liquidate a portfolio fairly and effectively? Are there additional concerns if multiple participants are liquidated at the same time, or if the automated liquidation results in price moves that result in a cascading effect of participants becoming under-margined and subject to automated liquidation?

(e) Are there concerns about whether there will be adequate liquidity for position liquidation on a 24 hours a day/7 days a week basis?

(f) What metrics or data should the Commission use to evaluate whether there is likely to be sufficient liquidity across a broad set of market conditions?

(13) If a portfolio's initial margin falls below the full liquidation threshold, FTX will liquidate the full portfolio by assigning the positions to predetermined backstop liquidity providers.

(a) How should FTX determine the amount of capacity it needs from its backstop liquidity providers?

(b) How should FTX determine the level of liquidation risk an individual backstop liquidity provider can take on?

(c) What types of standards should FTX have for its backstop liquidity providers?

(d) What risks are associated with a system that is dependent on outside liquidity providers in this way?

Market impact

(14) By reducing the number of people/entities involved in a transaction, does a non-intermediated model have an effect, positive or negative, on price discovery and efficiency?

(15) By potentially expanding the number of people able to participate in derivatives markets, does a non-intermediated model have an effect, positive or negative, on price discovery and efficiency?

SUBMITTED COMMENT LETTER BY HON. DAVID SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA; ON BEHALF OF, AND AUTHORED BY, MICHAEL J. SEYFERT, PRESIDENT AND CHIEF EXECUTIVE OFFICER, NATIONAL GRAIN AND FEED ASSOCIATION

May 11, 2022

CHRISTOPHER KIRKPATRICK,
Secretary of the Commission,
U.S. Commodity Futures Trading Commission,
Washington, D.C.

RE: FTX Request for Amended DCO Registration Order

Dear Mr. Kirkpatrick:

The National Grain and Feed Association (NGFA) submits these comments in response to the Commodity Futures Trading Commission's (CFTC or Commission) request for input on the FTX US Derivatives (FTX) proposal to clear margined products while continuing with a non-intermediated model. Presently, FTX is licensed as a [Derivatives] Clearing Organization (DCO) by CFTC, but with the stipulation that trades under its non-intermediated model are 100 percent collateralized.

The NGFA consists of more than 1,000 grain, feed, processing, exporting and other grain-related companies operating more than 8,000 facilities. Its membership includes grain elevators; feed and feed ingredient manufacturers; biofuels companies; grain and oilseed processors and millers; exporters; livestock and poultry integrators; and associated firms that provide goods and services to the nation's grain, feed, and processing industry.

The NGFA commends the CFTC for undertaking a public comment process and for facilitating a roundtable discussion for a broad group of industry experts to help

in its evaluation of FTX's proposal. Further, the NGFA appreciates the additional 30 days the CFTC provided to review and comment on FTX's proposal.

FTX's proposal is for two cryptocurrency products and the NGFA understands the distinction between the marketplace for cryptocurrency products *versus* agricultural products and that FTX's proposal will not have an immediate impact on agricultural markets. However, if FTX's proposal is approved, NGFA is concerned that a precedent will have been set that could allow other exchanges to expand the higher-risk cryptocurrency trading model to agricultural products, potentially undermining the well-functioning futures markets that our members rely on to manage risk. The portions of the FTX proposal that are concerning to NGFA are the elimination of futures commission merchants (FCM) from the buying and selling process and the automatic liquidation of positions when they become under margined.

FCMs enhance risk management by serving the valuable purpose of monitoring accounts' margin requirements and balances, helping customers to understand complex market regulations, identifying potential problems before they pose a risk to the market and its other participants and by stepping in and paying margin calls when their customers are slow to pay or default. In addition, NGFA believes FTX fails to consider the deep regulatory expertise that would be lost without introducing brokers and FCMs. Further, NGFA is concerned that FTX avoids the important risk management role that FCMs provide of temporarily covering margin calls and instead proposes to automatically liquidate positions that become under margined.

NGFA believes FTX's proposal to auto-liquidate positions has the potential to undermine risk management protection for commercial participants. Commercial participants use futures contracts to hedge against an underlying position and they cannot run the risk of having their hedges automatically liquidated by an exchange because of fast-moving price changes that lead to under margining. To avoid the risk of auto-liquidation, commercial participants would be forced to place inordinately large sums of money in margin accounts, and this would significantly increase their hedging costs. Inevitably these costs would be passed to the customers for whom our members are hedging—largely North American producers of grains and oilseeds.

The NGFA is concerned the FTX proposal would exacerbate market stress during periods of extreme disruption, particularly during systemic events. The NGFA also is not confident market participants could rely on FTX's proposed liquidation-based, operational model to continue functioning and providing hedging protection during prolonged periods of limit up and limit down moves. Furthermore, NGFA is concerned that volatility from auto-liquidations may lead to additional volatility in similar products on different exchanges, *e.g.,* auto-liquidations in an FTX soybean product that could lead to volatility in CBOT soybean products. NGFA also is worried the proposal could allow FTX to tear up trades resulting in unnecessary risk exposure and loss for hedgers.

The robust risk management controls that are required under the current intermediated mode creates necessary costs to offering futures contracts. The NGFA is concerned the FTX's proposal may lead other DCOs to adopt higher-risk models with fewer risk management controls to remain cost competitive. While the NGFA is in favor finding more efficient ways to deliver services, we believe the FTX proposal creates too much risk and we recommend not approving it. If the Commission decides to continue consideration of the FTX proposal, the NGFA recommends a formal notice and comment process. Thank you for considering our comments.

Sincerely,

MICHAEL J. SEYFERT,
President and Chief Executive Officer,
National Grain and Feed Association.
mseyfert@ngfa.org
(202) 289–0873

SUBMITTED ARTICLE BY HON. ANN M. KUSTER, A REPRESENTATIVE IN CONGRESS FROM NEW HAMPSHIRE

Forbes

[*https://www.forbes.com/sites/billybambrough/2022/05/12/1-trillion-crypto-melt-down-huge-crash-wipes-out-the-price-of-bitcoin-ethereum-bnb-xrp-cardano-solana-terras-luna-and-avalanche/?sh=32301e645fd1*]

$1 Trillion Crypto Meltdown-Huge Crash Wipes Out The Price Of Bitcoin, Ethereum, BNB, XRP, Cardano, Solana, Terra's Luna And Avalanche

Forbes Digital Assets [1]

BILLY BAMBROUGH,[2] *Senior Contributor*

May 12, 2022,01:50 a.m. EDT

Bitcoin and cryptocurrencies have crashed further overnight, dropping to levels not seen since the crypto market began surging in late 2020 and wiping away almost $1 trillion worth of value in a month as *a serious "ripple" warning comes into effect.*[3]

The bitcoin price has dropped to around $27,000 per bitcoin, down 12% on the last 24 hours, and dragging down the wider crypto market with other top ten coins ethereum, BNB *BNB*[4] *−1.7%,*[5] XRP *XRP*[6] *−2.1%,*[7] solana, cardano, and avalanche recording even steeper loses. Ethereum has crashed 22% since this time yesterday, with BNB, XRP, solana, cardano and avalanche all [losing] between 25% and 33%.

The sell-off comes after the $18 billion algorithmic stablecoin terraUSD (UST) lost its peg to the U.S. dollar, wiping out the price of its support coin luna which has now lost almost 99% of its value—and *risks dragging the bitcoin and crypto market even lower.*[8]

The bitcoin price has crashed to levels not seen since late 2020 with ethereum, BNB, XRP, solana, cardano, avalanche, and Terra's luna tanking. Getty Images.

"Bitcoin continued to slide and closed below $30,000 for the first time since last July, although the fall did not trigger a large sell off and the price is trying to re-

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[1] *https://www.forbes.com/digital-assets.*

[2] *https://www.forbes.com/sites/billybambrough/.*

[3] *https://www.forbes.com/sites/billybambrough/2022/05/09/serious-ripple-warning-after-massive-400-billion-crypto-crash-suddenly-plunges-bitcoin-ethereum-bnb-xrp-solana-cardano-terras-luna-and-avalanche-into-free-fall/?sh=7a38e38e1359.*

[4] *https://www.forbes.com/digital-assets/assets/binance-coin-bnb/.*

[5] *https://www.forbes.com/digital-assets/assets/binance-coin-bnb/*

[6] *https://www.forbes.com/digital-assets/assets/ripple-xrp/.*

[7] *https://www.forbes.com/digital-assets/assets/ripple-xrp/.*

[8] *https://www.forbes.com/sites/billybambrough/2022/05/11/going-to-zero-panic-is-sweeping-crypto-markets-hitting-the-price-of-bitcoin-ethereum-bnb-xrp-cardano-solana-terras-luna-and-avalanche/*

cover $30,000 in the Thursday Tokyo session," Yuya Hasegawa, a crypto market analyst at Bitbank, wrote in an emailed note.

"The price of bitcoin, however, could still fall due to the UST situation and worsening technical sentiment, but if the U.S. inflation continues to slow down, the macro environment will likely improve and the price will bottom out."

On Wednesday, markets were broadly hit by the latest U.S. inflation data that showed the consumer price index continued to run hot in April.

"U.S. CPI was a mixed result: even though it exceeded market expectations, it showed a sign of slowing down thanks to lower energy prices," wrote Hasegawa.

"The result was not enough to completely wipe out the possibility of faster monetary tightening, but it was also not enough to strengthen that possibility as well. The market inclines to sell on that kind of uncertainty and that is why stocks and crypto fell, but there is also a hope that inflation in the U.S. will continue to alleviate."

The bitcoin price has lost over 30% of its value in a week, crashing alongside the price of ethereum, BNB, XRP, solana, cardano, avalanche and Terra's luna. CoinBase.

The tech-heavy Nasdaq led markets lower on Wednesday, recording a 3.2% decline, with iPhone-maker Apple dethroned as the world's most valuable publicly traded company by oil major Saudi Aramco.

"The past week has seen turmoil has spread across markets globally as the reality of hawkish central bank policy and widespread inflation is realised," Will Hamilton, head of trading and research at asset management and technology company Trovio, said in emailed comments.

"Market drawdowns led by the tech heavy NASDAQ *NDAQ*[9] *−2.1%*[10] spread across digital asset markets as investors continue their withdrawal from risk assets."

[9] *https://www.forbes.com/companies/nasdaq*.
[10] *https://www.forbes.com/companies/nasdaq*.

SUPPLEMENTARY MATERIAL SUBMITTED BY HON. WALTER L. LUKKEN, J.D.,
PRESIDENT AND CHIEF EXECUTIVE OFFICER, FUTURES INDUSTRY ASSOCIATION

May 11, 2022

CHRISTOPHER KIRKPATRICK,
Secretary,
Commodity Futures Trading Commission,
Washington, D.C.

Dear Mr. Kirkpatrick,

The Futures Industry Association ("FIA") welcomes the opportunity afforded by the Commodity Futures Trading Commission ("Commission" or "CFTC") to provide comments on the proposal by FTX US Derivatives ("FTX")[1] to amend its revised order of registration as a derivatives clearing organization dated September 2, 2020 (the "Order") to authorize it to clear margined derivative products for its participants on a non-intermediated basis ("FTX Proposal" or the "Proposal").

FIA has a long history of supporting innovation in the derivatives industry and we believe the FTX Proposal has prompted a healthy dialogue within the industry. However, there remain significant open questions and a lack of critical public information on the model set forth in the FTX Proposal that make it difficult to analyze fully whether the Proposal, if adopted, would negatively impact the customer protections and the clearing process that lie at the heart of our futures markets.

Specifically, we are unclear whether various key principles of the derivatives regulatory oversight structure are adequately addressed by the FTX Proposal. These include principles of segregation of customer funds, conflicts of interest of those entrusted with market operations and customer funds, financial resourcing and capitalization of market operators, appropriately planned and sized default resources, and safeguards of key market operations. We urge the Commission to seek additional clarity from FTX on how these key principles are satisfied and to continue the public dialogue on this important, and possibly transformative, Proposal.

FTX's Proposal draws on existing features employed in the derivatives industry today—including margined futures, as well as frequent, intra-day assessment of clients' margin sufficiency and auto-liquidation of clients with inadequate margin coverage. However, FTX would uniquely combine all these features and deploy them in an integrated designated contract market ("DCM") and derivatives clearing organization ("DCO") without the benefit of futures commission merchants ("FCMs") underwriting the risk of clients in any traditional manner. The combination of these features represents a material change from FTX's current authorization that permits it to only clear futures, options on futures and swaps on a fully collateralized basis. Although the Order does not currently allow intermediation, we note that FTX's rulebook references the participation of FCMs, although how they would participate remains unclear.[2]

Furthermore, although FTX's existing offering is based on digital assets and cryptocurrencies for retail traders, the clearing model as proposed by FTX would permit trading in derivatives on any underlying asset class transacted by any type of customer, including commercial hedgers. This requires us to view this Proposal with an eye towards the potential impact upon the core users of the derivatives markets: farmers, producers, refiners, pension funds, and the range of commercial participants who depend upon futures and related products to hedge price risk in the real economy.

We analyze this unique Proposal recognizing the CFTC's long history of supporting innovation in the derivatives markets. In fact, the Commodity Exchange Act ("CEA") explicitly states in the findings and purpose[3] of the Act that the Commis-

[1] Officially LedgerX, LLC d/b/a FTX.

[2] Under the Order, FTX may "not permit any FCM participant to clear on behalf of any customer." FTX is permitted to accept FCM participants to clear on behalf of customers only if FTX first submits "all rules applicable to customer clearing to the Commission pursuant to Commission Regulation 40.5 or 40.6." In private sessions with members of FIA, FTX has suggested that FCMs could fund their customers' accounts at FTX; however, this Proposal may raise issues under CFTC Rule 1.30 prohibiting the loaning of funds by FCMs to customers on an unsecured basis.

[3] In the Findings and Purpose of the CEA, the statute reads: "It is the purpose of this chapter to serve the public interests described in subsection (a) through a system of effective self-regulation of trading facilities, clearing systems, market participants and market professionals under the oversight of the Commission. To foster these public interests, it is further the purpose of this chapter to deter and prevent price manipulation or any other disruptions to market integrity; to ensure the financial integrity of all transactions subject to this chapter and the avoidance of systemic risk; to protect all market participants from fraudulent or other abusive sales

sion should "promote responsible innovation and fair competition" among market participants. In promulgating the Commission's purpose and mission, Congress was careful to ensure innovation was advanced responsibly and did not jeopardize the integrity or financial stability of the markets or the protections afforded to customers. The CFTC's mission is structured around certain core tenets: In addition to the promotion of responsible and fair competition, the CFTC is charged with the protection of customer assets, ensuring the financial integrity of transactions, avoidance of systemic risk, and the prevention of manipulation.[4] Congress's insistence on promoting "fair competition" also suggests the CFTC needs to create a level playing field for market participants, which imposes a uniform regulatory framework upon similar activity with similar risks. FIA believes that these principles from the CFTC's mission should drive the Commission's analysis of the Proposal before us.

This letter further explores some preliminary issues and questions based upon FIA's review of the material available along with the FTX Proposal. These issues include:

- FTX's proposed elimination of FCMs from the clearing model does not remove the need for the important customer protections and risk management functions that FCM clearing members currently provide. As agents for their customers, FCMs hold various regulatory responsibilities including vetting customers on the appropriateness of these leveraged products, policing clients for money laundering, segregating customer funds, guaranteeing customer trades, holding significant regulatory capital against those trades, contributing their own skin in the game capital to the central counterparty ("CCP") default fund, and agreeing to further assessments should the CCP default fund need replenishment. Many of these responsibilities have been further strengthened post-financial crisis to provide important redundancies and checks in the clearing process to avoid not only a clearinghouse failure, but also losses to the customer asset pool.
- The FTX Proposal indicates that many of these FCM-provided protections could be satisfied through the DCO core principles or may no longer be needed due to the model. However, it is not clear that this hybrid DCO model provides the same level of customer and market protections through a DCO registration, given FTX seeks to take on many of the same functions and activities of FCMs without FCM registration and the detailed regulatory requirements that ensue from registering.
- FIA also believes there needs to be further analysis of the viability and adequacy of FTX capital as the default resource and appropriateness of tools (such as variation margin gains haircutting (VMGH)) proposed in the FTX risk model in extreme but plausible scenarios, especially for large commercial participants in other asset classes beyond retail digital currencies. Given the model relies on continuous liquid markets that are open 24/7/365, questions remain around the market impact of the auto-liquidation feature for the close-out of large positions in less liquid markets that are not continuously traded. Furthermore, more transparency is needed on the Backstop Liquidity Providers ("BLPs"), and how BLPs and other default resources are employed and governed during market distress while avoiding self-dealing.

We understand that the CFTC Request for Information is a first step in gaining more details on this unique market structure proposal that will help address some of the issues we have raised herein. We welcome FTX's openness to engage with the industry on the merits and substance of the Proposal. We support FTX's efforts to advance real-time risk management in clearing and bring greater competition to our markets. However, we do not believe there is sufficient information and analysis on the Proposal at this time to conclude that it should be approved by the Commission and, if so, under what conditions.

I. Relevant Background

A. FIA and its Members

FIA is the leading global trade organization for the futures, options, and centrally cleared derivatives markets. FIA's mission is to support open, transparent, and competitive markets; protect and enhance the integrity of the financial system; and promote high standards of professional conduct. FIA's membership includes clearing firms, exchanges, clearinghouses, trading firms and commodities specialists from more than 48 countries, as well as technology vendors, lawyers and other profes-

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practices and misuses of customer assets; and to promote responsible innovation and fair competition among boards of trade, other markets and market participants." 7 U.S.C. § 5(b).

[4] 7 U.S.C. § 5(b).

sionals serving the industry. FIA's governance consists of firms that operate as clearing members in global derivatives markets, including firms registered with the CFTC as FCMs, and this letter principally represents their views.

Throughout its history, FIA has deployed its collective member expertise to provide comment and feedback on a range of suggestions and improvements to the derivatives clearing system, ensuring that the mission of the CEA is fulfilled. In evaluating innovative offerings, we bring several decades of experience managing well-functioning markets for the important risk management and price discovery purposes for which they were designed. We are pleased to work with the CFTC and with other regulators regularly to strengthen the clearing system, through embracing improvements and evolving rules to yield greater efficiencies for market participants and for customers. We provide these comments in the same spirit.

B. The FTX Proposal

We understand the FTX Proposal expands upon certain elements of existing direct clearing models in innovative ways: specifically, the efforts to incorporate more frequent margin adequacy assessments and to distribute low-cost or no-cost market data could yield enormous benefits to participants in our industry. We seek to better understand how the innovations that FTX has developed for the global cash and derivatives crypto markets could contribute to the evolution of the U.S. cleared derivatives market.

FTX's Proposal seeks modification not only to an existing DCO order, but also to the fundamental paradigm of how the futures industry has historically operated, by relying primarily on the financial strength of FCM clearing members to buttress the financial solvency of clearing organizations who in turn ensure the performance of every cleared futures contract, option on a futures contract, and swap. Although the technical changes sought to the Order may not appear monumental on their face, we strongly believe that the changes could bring lasting effects, creating new sets of rules for certain participants, and therefore deserve detailed and thoughtful review.

Moreover, given the transformative changes that could potentially flow from the proposed amendment to the Order, we believe the CFTC must also carefully consider the public interest in potentially eliminating the traditional and essential buffer provided by FCMs in connection with margined products. This buffer serves not only as an integral part of the DCO waterfall in intermediated markets, but also as a critical front line in evaluating customer sophistication; ensuring customer education and suitability, customer protection, market integrity and operational efficiencies; and supplementing or enhancing the self-regulatory roles of DCMs and swap execution facilities. Additionally, the Commission must carefully assess the adequacy of the current DCO risk management rules if applied in the context of the proposed framework. It also must evaluate whether any of its existing rules should be formally amended prior to approving FTX's proposed margined-products disintermediated model. Indeed, it may be preferred that the CFTC consider FTX's Proposal through a formal rulemaking process that would necessarily include, among other things, a holistic cost-benefit analysis.

We understand that retail disintermediated models already exist under the CEA structure but in a more limited way.[5] We recognize that the FTX Proposal is innovative in its combination of disintermediation and margining of derivative products for retail participants, including how it proposes to substitute an alternative form of waterfall compared to the historic model backstopped by FCMs, relying on a 24/7/365 real-time margining system coupled with automatic liquidation of under-margined accounts, BLPs, and a guaranty fund from FTX's own capital that apparently will be no less than $250 million. Although FTX's Proposal draws on many existing features of the derivatives marketplace,[6] it focuses solely on those offered by a stand-alone DCM/DCO and discards the symbiotic relationship that ensures checks and balances in the clearing system, which would be lost by eliminating FCMs in FTX's proposed margined products disintermediated model.

Thus, because of the potential disruptive impact of FTX's margined, disintermediated model on the traditional clearing and customer protection model,

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[5] For example, Kalshi is also a disintermediated retail model that does not have FCMs, but it offers only fully-collateralized binary options. NGX is also a disintermediated model, but its niche market has requirements that effectively preclude retail participation and is limited to commercial market participants and other institutional counterparties that are required to have the capability to make and take delivery of the underlying energy commodities.

[6] For example. FCMs frequently examine CCP margin sufficiency and also can provide quick identification of clearing house errors and system problems. These functions help keep the entire system in check.

we urge the Commission to carefully consider whether FTX's Proposal, for itself and for likely subsequent adopters of a similar model, adequately ensures:

- the financial stability of cleared derivatives markets;
- the financial integrity of clearinghouses;
- that participants of DCOs receive the same level of customer protection as they currently do as customers at FCMs; and
- market integrity.

We have invested significant time in reviewing this potentially transformative Proposal. We have reviewed the documents made public on the CFTC website in connection with this solicitation of comments and have also had several conversations with the FTX team and other market participants. Particularly from those conversations, we gather that FTX continues to evolve its offering and seeks feedback on how it can be improved. We note that the FTX Rulebook continues to list certain product specifications that would likely be removed upon approval. We have also focused on other discrepancies between the rulebook made available by the CFTC and other documents and conversations detailing the model. We urge the Commission to review the Rulebook carefully to ensure the model is reflected as described. To that end, we highlight in this comment letter certain areas that we believe merit specific focus.

We understand that FTX engaged in conversations with FCMs and others to broaden the offering to institutional and other clients and we expect the platform will seek to list—as its Order currently permits—products outside of the current cryptocurrency and digital asset space. We, therefore, have analyzed both the current Proposal and the implications of expansion beyond the current Proposal. We urge the Commission to also consider the current Proposal with an eye towards a potential expansion into some or all of the markets under its regulatory authority. We believe that important commercial markets may be impacted and those hedging in these markets may be disadvantaged by certain features of the Proposal. Therefore, we suggest that the CFTC should not limit its review at this time to only certain users or participants. We look forward to working with the Commission as it evaluates the Proposal and its implications.

II. Analysis of the FTX Proposal in the Context of the Existing Regulatory Architecture

In considering the role that FTX seeks to fulfill by the FTX Proposal, it is important to note the longstanding regulatory framework in which it seeks to operate.

A. The Function and Role of Regulated FCMs

Some version of what is now known as an FCM has existed for centuries. Factor merchants were originally charged with interacting with customers directly. Since the passage of the Commodity Exchange Act in 1936, FCMs have been required to segregate customer funds, and their interactions with customers have been heavily regulated to ensure various customer and market protections. Although the regulatory structure has evolved significantly, these core protections remain entrusted to FCMs.

Currently, FCMs discharge several key functions independent of those discharged by DCOs. The clearing structure involves different, interdependent entities, each responsible for executing important and sometimes intentionally redundant system protections. Today, heavily regulated FCMs ensure that critical protections are met in the system, including those relating to customer protection, robust disclosures of risks, capital resources, and credit and collateral management. FCMs also provide a valuable buffer to ameliorate operational errors by DCOs on behalf of their customers.

FCMs are registered with the CFTC and are members of the National Futures Association ("NFA"). They assume obligations under the CEA, CFTC and NFA rules, and rules of any exchange or clearinghouse of which they are a member or on which they facilitate trading. If FCMs maintain a presence or an activity in a foreign jurisdiction, they may also incur obligations under other foreign laws and regulations. In the United States, FCMs are regulated principally by the CFTC and their designated self-regulatory organization ("DSRO"), as well as episodically by their other self-regulatory organizations ("SROs"). Moreover, FCMs are obligated through an express rule (CFTC Reg. § 166.3) to ensure all customer accounts are supervised directly and indirectly through a robust oversight system.

These varied oversight sources contribute to a complex regulatory framework, including myriad requirements, designed to protect customers, customer funds, DCOs, and the financial system. We set forth below a number of these requirements, and

highlight certain conceptual issues with the FTX Proposal to which we would direct CFTC's attention:

- *Minimum capital requirements.* The minimum amount of capital that an FCM must have readily available is defined by rule, but constantly fluctuates. Generally, it is the greater of a number of amounts, including: $1 million; 8% of the margin requirement (as defined in CFTC Rule 1.17(b)(8)) for positions carried by the FCMs in customer accounts and noncustomer accounts; or the highest amount required by the SEC (for combined broker-dealers and FCMs) or any self-regulatory organization. Moreover, this defined amount is subject to certain caveats, including capital "haircuts," or reductions, for no or late margin call satisfaction; and ongoing risk-reducing measures to help ensure capital is not impaired. FCMs risk-manage customers tick-by-tick as markets move, and may make margin calls intraday and in excess of DCM margins as a result, which would then impact regulatory capital requirement calculations. Due to regular fluctuations in the capital amounts required and regulatory penalties associated with capital deficits, FCMs typically maintain capital equal to at least 110% of the required amounts. FCMs are required to stand behind and guaranty 100% of customer trading. These capital requirements ensure that funding is available to backstop the trading of FCM customers and house accounts.
    - *Note Regarding FTX Proposal.* As it is not registered as an FCM, FTX is not subject to the same robust capital requirements. Moreover, given the lack of intermediation in its model, the FCMs' capital and calculated buffers are not requirements in the FTX Proposal and, instead, the Proposal intends to liquidate rather than rely upon FCMs to evaluate and ensure adequate margin. We question whether the Proposal is robust enough in this respect.
- *Guaranty fund.* In addition to this capital buffer, the traditional DCO model allows the DCO to require FCM contributions to a guaranty fund and allows the DCO to require additional assessments from FCMs to shore up the guaranty fund if circumstances require.
    - *Note Regarding FTX Proposal.* It is not clear how the $250 million single-source "guaranty fund" that FTX proposes to satisfy capital shortfalls may be increased, or will be replenished if drawn down.
- *Customer funds protection and segregation.* At an FCM, funds belonging to customers must be kept legally segregated from proprietary assets of the FCM. Customer funds are also protected by a robust FCM bankruptcy regime under Part 190 which, broadly speaking, ensures that funds of customers of a bankrupt FCM are directed back to the customer immediately. They do not pass through the bankruptcy estate and are, by statute, not subject to any claim by the FCM's creditors.
    - *Note Regarding FTX Proposal.* Member funds at a DCO are not considered to be customer accounts and are not subject to legal segregation under the CEA or CFTC rules. Therefore, separation of funds by a DCO between clearing members and proprietary funds is not the same as legal segregation. Internal policies may not have the effect of offering the same level of protection imposed by statute and rule.
- *Prohibition of Guaranteeing Against Loss.* FCMs are prohibited by Rule from guaranteeing against or limiting customer loss (or even making such representations). See CFTC Reg. § .56. In approving this rule, the CFTC sought to avoid FCMs becoming undercapitalized and to minimize the opportunity for the misuse of other customers' funds. See 46 FR 62842 (Dec. 29, 1981). This rule then serves to ensure proper capitalization of the FCMs and to make sure customer funds are fully segregated.
    - *Note Regarding the FTX Proposal.* In Questions 4 and 5 of the RFI, the CFTC indicates its understanding that FTX limits its participants' financial obligations and that participants will have no obligations to FTX other than posting initial margin. We read the FTX Rulebook to indicate that participants are obligated for losses beyond posted margin, and consequent attorney fees. *See, e.g.,* LedgerX Rulebook Rules 14.2.B and 14.3.B. However, should FTX continue to maintain that participants have no obligations to FTX other than posting initial margin, and its Rulebook is updated to reflect this, we urge the Commission to consider why the principles of Rule 1.56 would not apply here to prohibit such a practice.

- *"Know Your Customer" obligations.* Among other things, the Bank Secrecy Act ("BSA") requires that "financial institutions" (including FCMs) engage in standardized due diligence procedures to verify customer identity and assess and monitor potential, new, and existing customer risk. These Anti-Money Laundering screening requirements are essential duties performed by FCMs.
  - *Note Regarding FTX Proposal.* FTX has undertaken to adopt and follow certain BSA-related obligations. We note that this undertaking to comply, as required by the CFTC, may not have the same force and effect of being required to comply under the BSA as a regulated "financial institution" thereunder.[7] Already, principals of a firm, charged by the CFTC for allegedly acting as an FCM and not complying with the BSA, challenged a criminal complaint brought by the Department of Justice through a Motion to Dismiss, claiming that its activities were like those of a disintermediated DCO, and thus it had no BSA obligations.[8]
- *FCM customer-related obligations.* Registered FCMs must comply with numerous other obligations designed to protect customers and the markets in which they operate. These include, but are not limited to:
  - ➢ Firm-specific disclosures with ongoing obligations to refresh and update information to enable members of the investing public to select the FCM with which they do business.
  - ➢ Privacy notices that FCMs, as "financial institutions," must provide.
  - ➢ Examination, registration, and disclosure requirements for public-facing FCM associates, including Associated Persons and Branch Office Managers.
  - ➢ Ethics examinations and other obligations for public-facing FCM associates who engage with customers.
  - ➢ As noted previously, significant requirements (which the CFTC has applied broadly) to adequately supervise all persons directly or indirectly handling customer interest accounts, with significant penalties for failure to do so. Adequate supervision includes the robust monitoring of customer accounts to help ensure market integrity, compliance with position limits, and other requirements imposed upon customers.
    - *Note Regarding FTX Proposal.* Arguably, these important protections may not apply to DCMs/DCOs. That is, participants and members of these organizations are not traditionally viewed as "customers" with all the obligations that such a designation entails *vis à vis* an FCM.
- *Other FCM obligations.* FCMs are subject to other requirements that are designed to ensure market integrity. FCMs must comply with significant requirements to prepare, maintain, and retain appropriate books and records concerning their business, including recordings of certain telephone conversations. They are required to file daily segregation reports, periodic financial and risk reports, and a CCO Annual Report and certification.
  - *Note Regarding FTX Proposal.* Attention should be given to ensure that a DCO functioning like an FCM is subject to similar recordkeeping and certification requirements.
- *NFA Membership.* FCMs are required to be members of the NFA, be subject to NFA audit, and comply with numerous NFA rules designed for customer protection. Their public-facing employees must also be members and pass requisite examinations, be fingerprinted and remain subject to background checks.
  - *Note Regarding FTX Proposal.* Disintermediated DCMs and DCOs do not have an entity in their system required to be a member of the NFA. Accordingly, these vetting and diligence requirements are never applied as they are to customer-facing FCM employees. Therefore, attention should be given to the role that NFA plays, and whether adequate assurances otherwise exist in the absence of NFA membership.

In short, this wide array of rules underscores the FCM's important role as "gatekeeper" and one that supports market stability. We review the FTX Proposal with

[7] That is, in addition to the myriad regulatory requirements that FCMs are subject to, their status as a "financial institution" under the BSA requires them to be subject to the BSA regulations, with severe penalties for violations thereof.

[8] *See* Memorandum of Law in Support of Defendants' Motion to Dismiss, *United States of America* v. *Arthur Hayes, Benjamin Delo, Samuel Reed and Gregory Dwyer,* (USDC, SDNY (JGK)), filed December 21, 2021.

the understanding that the role of FCMs, and the consequent protective function entrusted to the FCM by the CEA and its regulations, are key to the proper functioning of the clearing system.

B. The Interdependent Existing Regulatory Framework Applicable to the Derivatives Clearing Business

As previously noted, the CFTC's rules were written around a framework that separates key functions into different entities, or registration categories. Merely collapsing various entities into a single entity does not necessarily mean that the rules applicable to the surviving entity satisfy the wide range of protections embedded throughout the preexisting, multi-entity structure. The existing FTX DCO is certainly subject to numerous regulatory requirements. Having said that, the CFTC rule set governing DCOs and DCMs was written with the understanding that an FCM would inevitably discharge certain key functions within the DCO/DCM framework. This presupposition means that, even if a DCM observes all its requirements, it cannot be said that *all* necessary protections, presumably to be fulfilled by an FCM, will be in place. By way of example, the DCM rules (CFTC Reg. § 38.1101) require that a DCM that is also a DCO have "adequate financial resources." However, this requirement does *not* include a methodology to determine what constitutes "adequate financial resources" for a DCM and a DCO that would also maintain responsibilities typically discharged by an FCM. Moreover, FCMs supplement many protections today provided by DCMs and DCOs; they also act as a buffer for customers if DCMs and DCOs experience certain operational errors (*e.g.,* by recognizing application of an incorrect risk array in computing firm margin requirements).

DCOs and DCMs frequently rely upon customer protection rules applicable to, and discharged by, FCMs. Indeed, a primary purpose of the FCM in the clearing system is to provide critical protections to customers. As the entities licensed to solicit directly from customers, FCMs are best positioned to provide a range of protections that are tailored to the customer in many instances. In addition to governing conduct involving direct interactions with the customers, FCM regulatory requirements are designed to protect the customer further from fraud, systemic failures, and malfeasance. To give just one example, NFA Rule 2–29 addresses FCM communications with the public and FCM promotional materials. The rule provides specific limitations on what FCMs may say about their business, about the future prospects of the business, or what could happen to customer funds designated for trading. These rules enhance customer awareness of the risks of trading and the limits of the markets. Such rules do not apply to a DCM or a DCO. In the absence of an FCM in the model set forth in the FTX Proposal, we urge the Commission to carefully analyze whether all of these important protections can be accommodated.

Today, the CFTC and DCMs expect FCM members to monitor trading and other activity by their customers, and routinely bring disciplinary actions against them when they believe they have not sufficiently safeguarded against improper conduct under certain facts and circumstances.[9] FCMs are also subject to guidance regarding the handling of customer accounts and other financial matters by the Joint Audit Committee ("JAC"). Exchanges, such as CME Group, impose similar supervisory obligations upon their clearing members.[10]

Given the presumed interdependence of entities functioning within the clearing ecosystem, we urge the Commission to review carefully the protections presumed and subsumed within the existing clearing model and to ensure that these protections are also incorporated, where necessary, into the proposed FTX model.

C. Unique DCO Risk Issues Raised by the FTX Proposal

We note that certain existing DCOs already operate without an FCM structure. Having said that, they are different from the FTX Proposal in key respects—most particularly, with regard to FTX's unique combination of retail participation, the auto-liquidation mechanism and leveraged margin trading. Thus, we submit that the FTX Proposal requires a thorough analysis by the Commission, to the extent that the model might lack and thereby do away with certain of the protective elements built into the system. At a minimum, we submit that any approved model should provide *at least* the *status quo* level of customer protections and market integrity protections as exist in the traditional clearing model, and may very well warrant a *heightened* level of protections, given both its unique market design and the

[9] *See, e.g., In the Matter of Advantage Futures LLC, et al.,* CFTC Docket No. 16–29 (2016).

[10] *See, e.g.,* CME Rule 950 (a clearing member must "adopt and enforce written supervisory procedures pursuant to which it will supervise in accordance with the requirements of [CME] Rules and the CEA and CFTC Regulations thereunder, each customer's account(s)").

likely participants in the market.[11] We take this opportunity to consider some of these unique risk management features of the FTX Proposal and the FTX business model, to identify certain issues that we believe merit closer consideration.

1. Rulebook and Other Document Descriptions of FTX Default Procedures

Chapter 14 of the LedgerX Rulebook captures many of the unique features of the FTX model in its description of default procedures. First, Rules 14.1 and 14.2 define a default on the platform and authorize FTX to liquidate, terminate or suspend the open contracts of a participant meeting that definition of default. The Rule provides for liquidation except in certain cases, such as a participant-to-participant transfer, FTX auction, or if the Risk Management Committee determines that liquidation is not required to protect the financial integrity of FTX. It is not clear from the Rulebook or from discussions with FTX under what circumstances a liquidation would be avoided for these reasons. We note that in the event the company decides not to liquidate a position, it is permitted to enter into hedging transactions to reduce the risk to FTX of not liquidating.

Second, should the liquidation determination be made under 14.2, FTX has, at its discretion, several options to close out the position pursuant to Rule 14.3. As a first step, Rule 14.3.A permits the company to liquidate into the central limit order book. However, if the company determines that it is not "practicable or advisable under the circumstances in light of liquidity, open interest, market conditions, or other relevant factors" three options are available for close out:

- transfer of the positions to a BLP (Rule 14.3.B)
- partial tear up of positions of participants not in default, also referred to as the Secondary BLP (Rule 14.3.C)
- auctions pursuant to default auction rules in place at the time, or pursuant to other "alternative auction" rules determined appropriate by FTX.

The choice among these options appears to be entirely up to FTX.

Only if and after these four options (auto-liquidation and then the other three back up choices of transfer, partial tear up or auction) are determined to be "not practicable or advisable under the circumstances in light of liquidity, open interest, market conditions or other relevant factors," can the company turn to the default resource of the FTX guaranty fund. (Rule 14.3.E). After exhausting the guaranty fund, FTX may elect, in the following order, Variation Gains Margin Haircuts and Full Tear Up. Finally, the rules make clear that regardless of which method of closeout is utilized, the company may demand from the closed-out customer full payment for all losses, liabilities and expenses incurred in these steps. (Rule 14.4).[12]

FTX has also filed with the CFTC an "Exhibit G: Default Rules and Procedures." The materials do not appear completely aligned with these Rule 14 steps. For example, Chapter 14 includes the use of auctions in the default process but Exhibit G does not. We assume the Rulebook will be updated to reflect the statements in Exhibit G and until we have clarity on the sequence of default procedures, it is difficult for us to fully assess the adequacy of the default process.

Nevertheless, we provide a few preliminary comments on the Rulebook. First, one of the key purported benefits of the FTX Proposal is that "FTX *does not propose to mutualize losses among its participants* in its default waterfall." (*See* CFTC Request for Comment on FTX Request for Amended DCO Registration Order, March 10, 2022, at 2) (emphasis added). However, Variation Margin Gains Haircutting ("VMGH") is listed as a default resource in both DCO Exhibit G and Rule 14.3.F. This tool conflicts with FTX's assertion that it does not mutualize loss, insofar as VMGH is a form of loss mutualization. Further, we question the appropriateness of a tool like VMGH in the context of clearing for less sophisticated retail customers, who may not comprehend how it operates. Although traditional CCP rulebooks may include these tools, they reserve VMGH as the final step in recovery and there are guard rails around the use of these tools. For example, when VMGH is permitted, it is subject to regulatory oversight and strict limitations upon both the duration it may be used and/or the maximum dollar value of losses that can be imposed.

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[11] As noted by Chair (then-Commissioner) Behnam at the March 11, 2021 GMAC meeting: "But certainly, as a general matter, whether it is clearinghouse risk or margin issues, and certainly today's discussion around retail trading, these are the most ripe and important issues that I think we all care about in our market." *See https://www.cftc.gov/sites/default/files/2021/04/1618338631/gmac_transcript031121.pdf.*

[12] As noted on pages 8–9 above, the CFTC indicates in RFI questions 4 and 5 that it understands FTX to be limiting participant financial obligations to margin posted. The Rulebook indicates, on the contrary, that participants are obligated for losses beyond posted margin, and consequent attorney fees. *See, e.g.,* LedgerX Rulebook Rule 14.2.B and Rule 14.3.B.

Furthermore, the use of Partial Tear Ups in Rule 14.3.C—also a loss mutualization tool—is ahead of the use of the FTX Guaranty Fund in the waterfall.[13] That non-defaulting participants could be subject to Partial Tear Ups does not seem compatible with the FTX assertion that it does not mutualize losses. At the very least, participants should be made aware and rules on application of this tool should be further disclosed. Moreover, it is unclear whether FTX expects retail users to participate in the auctions, and whether such participants would require different procedures for a successful auction.

Given the business model and category of market participants targeted by FTX, we would strongly urge the CFTC to consider whether these tools are appropriately placed in the waterfall and whether they are appropriate at all for this model.

2. Auto-Liquidation

FTX rests its model on the risk management benefits of its auto-liquidation feature. At the outset, we note that the FTX Rulebook makes clear that auto-liquidation is only one of the options available to FTX in dealing with a customer with insufficient margin. As detailed above, Rule 14.2 would permit FTX to decide whether to conduct an auction, or to maintain defaulted accounts on its own book and to enter into additional transactions on its platform to hedge its own risk in those positions. Given that FTX may make its own determination as to whether or not to liquidate, we urge the Commission to seek more information on threshold circumstances that could result in risk being held by FTX itself.

Should FTX decide to proceed with a liquidation, FTX proposes to auto-liquidate the participant if there is insufficient Initial, Maintenance or Variation Margin. As we know, multiple defaults often happen during volatile markets. Although FTX has asserted that its offshore entities has successfully handled multiple defaults on volatile days, the model has not been tested with large institutional market participants.

The notion of auto-liquidation presumes a willing and able counterparty and thereby itself depends on sufficient liquidity. Even if an auto-liquidation model can operate effectively, it is not clear that the ten percent auto-liquidation model would be appropriate in all market liquidity scenarios. Thus, we submit that FTX should justify the decision to liquidate ten percent of a position automatically, as opposed to some other number based on market conditions.

As the Commission is well aware, there are both products and certain time periods when liquidity ebbs, sometimes significantly. Volatility in the markets can also exacerbate liquidity crunches. The 24/7/365 nature of the FTX model only heightens these concerns, as this will increase the probability that auto-liquidation will be triggered at times of low liquidity (such as nights, weekends and extended holiday periods). Amplifying these concerns about liquidity are the potential limitations on the ability to "top up" margin in accounts during off hours. Meeting a margin call in fiat currency requires banks to be open, notwithstanding that the market is open 24/7. This is not the world we live in today.

Furthermore, during market turbulence, immediately liquidating a large participant during cascading markets can be pro-cyclical, add to market volatility and may cause further defaults. In other words, a directional market subject to an auto-liquidation model has a tendency to be very pro-cyclical and, thereby, this model could exacerbate financial instability in a time of heightened market volatility. This impact could very well be worse in the retail context, in which retail participants often move in packs and the effect of liquidating hundreds of retail accounts at once could be enormous. For all these reasons (and others), an FCM and a DCO have a duty to consider market conditions before liquidations. The current clearing model requires establishment of a clearly defined default management strategy with provisions for hedging and portfolio splitting prior to liquidation to ensure that close-out happens at the best possible price. Expert judgment is relied upon with the default management group or DCO risk management staff in some cases implicitly evaluating market conditions prior to taking action to liquidate positions. This second line of defense may be even more important in the context of crypto products, which have shown significant intraday and overnight volatility. This would impact size of losses depending on when positions are closed. In contrast, in an objective, algo-driven automatic liquidating model, no such consideration can be given. Without this

[13] One possible reading of Rule 14.3.C is that only Secondary Backstop Liquidity Providers, presumably parties who have executed Liquidity Provider Agreements, would be eligible non-defaulting participants for partial tear up. We submit that this is not clear in the rules and not referred to in Exhibit G. If this is the way the tool's use is envisioned, the Rulebook and Exhibit G should be updated to reflect that.

subjective requirement, a wholly automated function could in fact exacerbate market turbulence and create systemic risk.

Moreover, FTX's model—which marks-to-market every 30 seconds and uses real-time auto-liquidation if a participant does not maintain sufficient margin—raises additional questions regarding possible unintended consequences. FIA recognizes that maintaining required margin on deposit with FTX along with an auto-liquidation mechanism can limit FTX's exposure to client default risk, but submits that this structure interjects *different* risks that should be fully evaluated to ensure that market integrity is not compromised. For example, does auto-liquidation pose different or additional risks for market manipulation that are not present outside of this proposed model? Given the retail participation in the digital assets markets, we suggest that the CFTC should consider whether market manipulators will be able to trade on directional information affecting such assets and the expected retail reaction. Recognizing that other intermediated exchanges or those that allow only fully collateralized contracts currently list cryptocurrency futures, we suggest further that the CFTC should consider whether approving this disintermediated, margined model might create unwanted arbitrage, information asymmetry, market manipulation or instability scenarios with respect to those other markets.

For all these reasons and others, we submit that the CFTC should consider whether FTX's proposed auto-liquidation feature would potentially cause market disruption not found in other models. SROs have sanctioned members for issues raised by similar auto-liquidation models:

- Saxo Bank: *https://www.cmegroup.com/notices/disciplinary/2017/03/CME-15-0158-BC-SAXO-BANK-AS.html*
- Interactive Brokers: *https://www.cmegroup.com/notices/disciplinary/2020/09/CME-15-0303-BC-INTERACTIVE-BROKERS-LLC.html*

We suggest that FTX explain how its model can be distinguished from these cases, and how it would enforce its own rules prohibiting conduct by participants that constitutes a "disruptive trading practice." *See* Rule 8.3(N).

We also note that the model relies heavily upon the execution of algorithms. From the information provided, we are unclear what controls exist with respect to automated algorithms integral to the risk management program of the FTX Proposal. Given the algorithm's importance, we believe the CFTC should provide guidelines and resources to assess its dependability.[14]

The efficacy of FTX's risk management framework hinges on its ability to automatically liquidate under-margined customer positions. We believe that the CFTC should consider whether the auto-liquidation feature warrants additional disclosures so that participants, particularly retail participants, understand the risks involved with participating at FTX as a member. We submit that, among others, the risks about which member/retail participants should be made clearly aware are:

- Upsetting planned risk management, hedging, or arbitrages if positions are closed out unexpectedly and without warning.
- Effect of delay in providing additional maintenance margin because of banking closures (normal weekend, or even extended holiday period considering the 24/7/365 nature of operations, for example) or delays in transmittal, including those not the fault of the customer.
- Effect of failure to pay maintenance margin.
- Possible adverse results of a forced auto-liquidation, including responsibility for any losses resulting from auto-liquidation, and liability for resultant legal fees.
- Possible irreversible auto-liquidation prompted by an FTX operational error caused either by FTX or due to a fat finger error entered by a market participant.

3. Liquidity Providers

FTX also contemplates the use of a BLP Program to provide flexibility to close out customer positions that are under-margined. The FTX Rulebook defines a Liquidity Provider as one who enters the Liquidity Provider Agreement, a document which is not provided for review with this RFI. Rule 4.3 makes clear that Liquidity

[14] For example, after years of market review and debate on how best to address risks associates with electronic trading, the CFTC adopted CFTC Rule 38.251 as part of its Electronic Trading Risk Principles, which requires DCMs to implement rules to prevent, detect and mitigate market disruptions associated with market participants' electronic trading as well as to subject all electronic orders to the exchange's pre-trade risk controls. This rule, and the intense market discussions leading up to it, did not contemplate where, as proposed by FTX, the electronic trading is being done by the DCO's own auto liquidator.

Providers may receive incentives and benefits, but it is not clear what the Liquidity Provider is obligated to do in exchange for those benefits.

The Close-Out Rules provide further explanation about the Liquidity Providers and divide them into two types: "Backstop Liquidity Providers" and "Secondary Backstop Liquidity Providers." It appears from the Rulebook that both types of Liquidity Providers will enter into a participant agreement. We gather generally from the rules that BLPs are those that accept customer defaulted positions through transfer and Secondary BLPs are those that agree to partial tear up of offsetting positions.[15]

We lack information we consider necessary to an adequate assessment of the effectiveness of the Liquidity Provider program. The terms of the agreements with the BLPs are highly relevant to an effective determination of key matters, including: the conditions under which these back-up providers would act; the volumes that they would be able to support and whether there are explicit limits on size of positions that they would liquidate; and the price at which liquidation will be undertaken, *i.e.,* whether it is a price determined by the BLPs based on their perception of market conditions and positions to be absorbed, or whether it would be a price determined by FTX itself and the incentives in place to ensure the BLPs would act in the best interests of the market.

Furthermore, neither Chapter 4 nor Chapter 14 of the FTX Rulebook seem to adequately address the process for assigning positions to BLPs. At the very least, we would expect transparency on the minimum number of BLPs necessary; the minimum requirements to become a BLP; and whether the BLPs are obligated to accept positions. Furthermore, it is not clear from the public documents how FTX will ensure at all times that BLPs are available and have committed resources sufficient to support the model. Additionally, BLPs are allotted positions based on margin on deposit. What ensures that BLPs won't remove margin or reduce it just during the time the DCOs may need to assign positions of a defaulted member, when liquidity is needed most? Further, while it appears that FTX may require the BLPs to accept trades at a haircut to current market price, this raises the concern that liquidation of large volumes at a discount to the market price could itself lead to a further downward spiral of prices such that the liquidation process would effectively only stop when the participant is fully liquidated.

Finally, we understand that at least one entity owned by FTX would participate in the Liquidity Provider Program. The Commission should carefully consider whether to permit an entity owned by FTX to serve as a BLP, which could create the potential for wrong-way risk and conflicts of interest.

We lack the clarity on the Liquidity Provider Program to evaluate whether it can mitigate the shortcomings of an algorithmically-driven auto-liquidation program. We urge the Commission to seek additional information on the use of the Liquidity Provider Program before it concludes that the close-out procedures envisioned sufficiently protect customers and the market itself.

4. Financial Integrity of the FTX Clearinghouse

As noted above, critical to the functioning of futures markets is the financial integrity of the clearing house. Most DCOs have their own financial requirements and, when a clearinghouse processes margined products, the DCO's capital is "backstopped" in waterfalls by its FCM clearing members. These backstops may include guaranty fund contributions and special assessments levied upon the FCMs. These financial resources are designed to comply with the Principles for Financial Market Infrastructure, ("PFMIs") jointly issued by the Committee on Payments and Market Infrastructure ("CPMI") and the International Organization of Securities Commissions ("IOSCO"), which require (in relevant part) "rules and procedures [ensuring] that FMI's . . . replenish any financial resources that the FMI may employ during a stress event, so that the FMI can continue to operate in a safe and sound manner." *See* Principles for Financial Market Infrastructure, April 2012 at 37, Principle 4, Key Consideration 7.

In its Proposal, FTX submits that its combination of automatic liquidations, BLPs, conservative margin requirements (for the initial referenced products, derivatives based on BTC and ETH), and a $250 million minimum self-funded guaranty fund provides an adequate and appropriate substitute for the financial requirements set forth in the traditional clearing model (*See* CFTC Reg. § 39.11). The CFTC either

[15] However, it is not clear to us from the Rulebook that Partial Tear Ups would be limited to those parties who have signed a Liquidity Provider Agreement. We note that Partial Tear Ups are used in Rule 14.3.C with reference to Secondary Backstop Liquidity Providers, suggesting possibly that only those parties would be eligible for a non-defaulting position tear up; but the rule does not explicitly limit the tool to those parties.

should disclose details about this to the public, or conduct its own analysis to satisfy itself that the relevant math supports this proposition. We submit that the chart and accompanying explanation in the February 8, 2022 FTX letter to DCR Director Clark Hutchison and the April 15, 2022 article posted on FTX's website, *https://www.ftxpolicy.com,* entitled "Understanding FTX's Guaranty Fund Sizing" ("FTX Letter") does *not* provide sufficient quantitative analysis, including assumptions behind such analysis, to verify the proposition.

Although FTX, in the FTX Letter, suggests that it will increase its guaranty fund over time, there is no requirement that it do so, and the formula pursuant to which this would presumably occur is not clear. Thus, while FTX has stated privately it will restore its guaranty fund if it decreases below $250 million, we ask the Commission to consider how FTX's commitments can be mandated, if at all, by the CFTC, whether FTX should be required to maintain segregated resources to support such replenishment, and if so, how large these segregated resources should be. Furthermore, the guaranty fund is placed ahead of VMGH, a loss mutualization tool and, finally, full tear up, in the default waterfall. In light of the representations made by FTX that it has funds sufficient to support a clearing model without loss mutualization tools, we query why the guaranty fund is limited to $250 million. We urge the Commission to carefully consider the appropriate levels of capitalizations for FTX to ensure it has the ability to continue to operate in a safe and sound manner.

We also seek clarity on the capitalization for the higher risk of non-default losses ("NDLs") at FTX. The algorithmic manner in which positions are proposed to be liquidated suggests high technological reliance and potential vulnerability to cyber-attacks. It is therefore imperative that FTX provides greater disclosures around the framework to manage technology and cyber risk and its approach to mitigating risk related to NDLs.[16] More broadly, the framework suggests a need for significantly higher levels of CCP capitalization levels to address default and non-default losses—in the absence of robust capitalization levels, there is a significantly higher risk that FTX may run out of resources. We would urge the CFTC to require a meaningful capital framework that aligns incentives and ensures adequate capitalization to address all aspects of both default and non-default losses.

5. Traditional DCO Default Resources

The proposed model is distinctly different in its scoping of default resources than the current DCO models that exist. Accordingly, analysis of the default resources requires more than just a straightforward calculation, and instead merits close consideration of the size and the purpose of resources available. As compared to currently existing DCO models, the proposed model is more concentrated and built on certain assumptions that are thus far untested in the United States. We urge the Commission to evaluate whether the proposed model includes the necessary protective layers for margined derivatives contracts. More broadly, we note that the PMFIs require that "[a]n FMI should establish explicit rules and procedures that **address fully** any credit losses it may face as a result of any individual or combined default among its participants with respect to any of their obligations to the FMI." Principles for Financial Market Infrastructure, April 2012 at 37, Principle 4, Key Consideration 7 (emphasis added). Therefore, the standard for default resources should not just be to check for a sufficient default fund in comparison to the traditional model, but should holistically evaluate the adequacy of resources to cover tail risk.

Whereas FTX is proposing to fund all of the available default resources itself, existing DCOs rely on several independent and diverse sources. Consistent with the regulatory approach of distributed responsibility, the default resources are also built on a framework of distributed responsibility for loss absorption and deflection. We urge the Commission to fully consider the implications of the concentration risk created by FTX's unique approach.

Traditional DCOs include several layers of resources, namely, contributions to the default fund and limited assessments for replenishment, that appear not to be accounted for in the proposed model.

With respect to the sizing of its default fund, the Proposal raises several questions. First, FTX has proposed to size its default fund to cover a default by up to

[16] FTX is well aware of the potential of crypto trading platforms to be hacked. In August 2021, Liquid Group Inc. ("Liquid"), a crypto trading platform, announced that FTX Trading Ltd. (["]FTX Trading") would provide $120 million in debt financing after Liquid was reported to have sustained a $100 million hack; this deal apparently closed in April 2021: *https://blog.liquid.com/liquid-ftx-dept-financing*. In February 2022, Liquid announced FTX Trading would acquire Liquid and all of its operating subsidiaries: *https://blog.liquid.com/acquisition-liquid-ftx*.

three participants (Cover-3) that create the largest exposure for the DCO if Cover-1 or Cover-2 does not collectively account for 10% of the initial margin on deposit. Its Guaranty Fund will be funded by $250 million of its own capital, and purportedly would cover any losses incurred on positions beyond those accepted by BLPs and to reimburse those providers if necessary. However, the proposed framework does not set a minimum coverage requirement as a percentage of the cleared market share.

We note that in the traditional model, the default resources are not limited to the contributions of the clearinghouse itself. That amount is supplemented by contributions by the clearing members. In fact, the member contributions far outweigh the so-called "skin in the game" money contributed by clearinghouses. For example, CME's "base" service which covers all of its futures and options, has three layers of protections: $100 million in skin in the game, $5.9 billion in member contributions and we estimate $25 billion available through members assessments. Even smaller exchanges with more concentrated product ranges have amounts that dwarf the FTX Proposal: Nodal Clear has $20 million in skin in the game, $204 million in members contributions, and we estimate $838 million via assessment authority.[17]

6. FTX Default Resources

We understand that FTX's proposed model is extrapolated from CFTC Reg. § 39.11(a)(1)'s requirements for sizing obligations, based upon the traditional default scenarios used by DCOs that have clearing members carrying customer business, suggesting a large size for a defaulting "member." To account for the possibility that its members may be smaller in size, FTX would size its resources using a similar scenario that purports to be more conservative. From the materials provided, it is not clear that the derived formula pursuant to which FTX would size its resources is adequate.

Under Rule 39.11, sizing a Cover-1 default includes the largest clearing member including all of its house business and customer business. This proxy of the largest one or two clearing members defaulting in a traditional CCP is not comparable to the largest one or two direct participants failing. The Cover-1 or -2 model was not developed for the failure of single clients or retail participants but is designed for the failure of FCMs (including the required close out of their clients). Effectively, the sizing of the default resources in a non-intermediated retail market based on loss of its largest three participants will be significantly smaller. In contrast, the assumptions around the default of an FCM, generally including its house and its client positions, yields a significantly higher loss that must be absorbed by the resources of the CCP. We therefore worry that covering only one or two defaulting participants in the FTX scenario would be woefully inadequate.

Furthermore, the entities considered in this Cover-1 or Cover-2 default scenario are purposefully well funded and highly regulated. In other words, the current system is built to prevent a default in the first place given the capital requirements imposed on the clearing members. Most FCMs are required to hold capital equal to 8% of the total risk margin requirement for positions it and its customers carry. As of December 2021, FCM capital held amounted to $175 billion.[18] We urge the Commission to consider the embedded protections in the current model that ensure well capitalized participating clearing members in the first place in determining whether the Cover-1, Cover-2 or Cover-3 default arrangements are even relevant to the FTX model which assumes very different direct participants.

In markets where positions are highly correlated, we believe that failures may have a cascading effect that should be assumed in market design. The effect of underestimating this potential cascading effect is that the modeling is neither extreme nor plausible. "Cover-3" is based on an assessment that the default of the three largest clearing members is highly unlikely. What analysis exists to determine how many retail FTX participants are likely to default simultaneously during a catas-

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[17] FIA estimated the assessment amounts based upon a worst-case scenario in which two of the five largest members defaulted at the same time and the losses were so large that the clearinghouses applied the maximum assessments to replenish the default fund. In such a scenario, the assessment powers would be applied only to the surviving members of the clearinghouse, and the amount would be capped at a multiple of the pre-default contributions of those surviving members. That multiple is 5.5 at both CME and Nodal Clear.

[18] This includes FCMs Adjusted New Capital and Excess Net Capital reported on the CFTC's Financial Data for FCMs report for the end of December 2021. *See infra,* discussion of FCM capital requirements at p. 6. CFTC Reg. § 1.17(a)(1) requires the higher of: $1 million (or $20 million for an FCM swap dealer); 8% of its risk margin requirements (plus 2% of its uncleared swap margin, if the FCM is a swap dealer); net capital required by any registered futures association; *or,* for FCMs that are securities broker/dealers, the net capital required by SEC Rule 15c3–1(a).

trophe? We urge the Commission to consider whether the proposed reference to covering up to three participants in the proposed model is really a plausible proxy for the types of losses that could be incurred.

We further invite the Commission to make public several additional pieces of information to help the market understand the appropriateness of the Proposal, including:

- How often will the size of FTX's Guaranty Fund contribution be recalibrated?
- How does FTX intend to replenish its resources in case the Guaranty Fund has been used in part, and according to what schedule?
- Does FTX maintain a reserve fund ensuring additional and dedicated funding, assuming any replenishment would come from FTX's own capital?
- Given the lack of ability to make assessments, what other resources are available in the FTX waterfall should the Cover-3 resources be insufficient?
- How will FTX monitor the use of the Default Resources across closeout providers to ensure the default resources are not exceeded while performing the closeout(s)?

The CFTC has spent years of time, attention, and thought upon CCP resilience, recovery, and resolution since the enactment of the Dodd-Frank Act. So have other U.S. financial regulators, and the international financial regulatory community through the CPMI–IOSCO and FSB. They have established principles and guidance, by which even many non-systemically important U.S. DCOs voluntarily abide. We ask the CFTC to ensure these principles are applied to this Proposal.

Given the interconnectedness of global markets, and the fact that products covered by the FTX Proposal can potentially be extended to other, more traditional asset classes cleared at other CCPs, what happens on one DCO (or CCP) is often not limited to that particular clearinghouse, and can have broader financial stability consequences. *See* Sklar, Federal Reserve Bank of Chicago, *Systemic Implications of Access to Central Bank Accounts for CCP* (found at *https://www.chicagofed.org/~/media/publications/working-papers/2020/wp2020-21-pdf.pdf*). Thus, the underlying principles governing application of law and policy to derivatives clearinghouses are of widespread, fundamental importance to the markets.

7. Margin Calculations and Handling

Although FTX indicates it will use a VAR model with a minimum 1-day margin period of risk (MPOR), there is no modeling available for review. The regulatory minimum for margin requirements is a model that covers risk with a confidence interval of 99% based on a one day MPOR. We note that the information available on the FTX margin framework is fairly limited with no discussion of concentration margin and how it is charged. Furthermore, the Proposal does not state whether FTX would maintain position limits or charge additional margin to prevent positions from becoming outsized, or provide detail on the efficacy of the anti-pro-cyclicality tools used by FTX. Considering the volatility of crypto products, anti-procyclicality tools are critical to ensure the integrity of the marketplace. We therefore submit that the CFTC should carefully consider FTX's margin modeling with these questions in mind.

It is also worth considering that today, FCMs often challenge the adequacy of margin rates assessed by DCOs. When FCM proprietary models indicate that DCO margin rates inadequately cover potential market moves, FCMs may charge premiums to DCO margin rates, protecting themselves from a potential default by their customers and, thereby, also protecting the customer asset pool and the DCO. It is not clear who will similarly evaluate and mitigate against potential under-margining by FTX.

Finally, we note concerns about using customer's margin to fund FTX's business needs. The proposed FTX Rulebook includes a provision in Rule 7.G.5. that permits FTX to use participant initial margin and maintenance margin for meeting the Cover-1 liquidity needs of FTX. It is not clear how this rule is compatible with requirements that the DCO segregate customer funds from its own funds, and it merits closer consideration. Given the lack of margin calls, we expect that participants may want to overfund accounts in order to avoid liquidation. We believe it is crucial for the CFTC to make clear that excess participant funds are to be segregated at all times from the DCO's funds.

8. Event of Bankruptcy

FIA notes that it is also not clear what would happen should FTX go bankrupt. For instance, pursuant to Subpart C of applicable bankruptcy rules (CFTC Reg. § 190.11 *et seq.*), all property in this model is member property. Thus, if there is a

shortfall in the member account, all Kalshi collateral (100% collateralized products cleared by FTX) and all FTX leveraged products will be in the same class. The impact of the single member account class in the Part 190 Regulations is that fully collateralized Kalshi customers would subsidize the losses of FTX margined customers in an FTX bankruptcy.[19]

Given that participants would likely wish to overfund the account to avoid auto-liquidation, we question what would happen to those funds in a bankruptcy. With these apparent gaps and potential issues, we urge the Commission to consider whether the Part 190 Regulations fit and accommodate the proposed expansion of the DCO offering pursuant to the FTX Proposal.

9. Issues in the Proposed Governance Framework

The FTX Proposal raises a fundamental concern about governance. As the CFTC knows, the cleared market is intentionally set up with checks and balances within the system. The DCOs have an oversight function of the FCMs; the FCMs participate in checking the risk management of the DCOs; regulatory authorities take feedback from both on proper risk management of the system as a whole; and a comprehensive, principled regulatory regime emerges and functions. Given the expected initial makeup of its member base (*i.e.,* primarily retail participation), we would recommend greater clarity on how FTX expects to obtain meaningful input on its risk management, legal and operational practices, and governance from its market participants. Further, we query how FTX will avail itself of market expertise which, at intermediated models, is often provided through default management committees represented by FCMs/brokers.

FIA believes that the oversight plans for the proposed model also need more clarity. For example, it is not clear which entity or entities at FTX will act as the Self-Regulatory Organization ("SRO"). The Rulebook defines SRO as "includ[ing] a DCO," but DCOs are not themselves SROs, *see* CFTC Reg. § 1.3. We urge the Commission to further consider whether FTX could effectively and fairly perform all the functions of an SRO, including whether it could audit its own entity, and whether it would adhere to and participate in the Joint Audit Committee and its standards.

A related concern is the frequency of defaults of participants, and FTX's subsequent market activity in its own market. In all likelihood, both the average number of defaults, and the average number of simultaneous defaults, will be higher than under a traditional clearing model. The resulting position liquidations, whether algo-driven or not, will cause FTX itself to become a substantial market player in the market it operates. This level of active market participation by the CCP would be unseen not only with respect to CCPs under the traditional market, but also with respect to any traditional broker/retail aggregator. This raises concerns with regard to the market structure.

One of the primary sources of transparency for CCPs is the PFMI's Public Quantitative and Qualitative Disclosures. We strongly encourage FTX to issue Public Quantitative Disclosures as set forth in IOSCO's PFMIs. This might seem a logical step in ensuring the integrity of the FTX market.

10. Ownership

FTX shares common ownership with large trading firms doing business in the cryptocurrency markets. This is not unique to FTX. In fact, many trading venues are partly owned by market participants that have a direct interest in helping the venue grow. There are, however, some potential conflicts of interest in these arrangements and it is important to establish protections to ensure a level playing field. There is a lack of transparency into how the firms with common ownership with FTX participate in the markets that it operates and what advantages they might receive relative to other trading firms that do not share common ownership. There is also a lack of information into how these firms participate in the liquidation process and the backstop liquidity program.

As the CFTC considers this issue, we urge the Commission to look to the precedents set in the agency's implementation of the Dodd-Frank Act. During that process, the CFTC devoted entire sets of rules to both internal and external risk management with respect to entities that participate within the clearing portion of the business on the one hand, and within the dealing portion of the business on the

[19] The CFTC Bankruptcy Regulations have different subparts for an FCM bankruptcy (Part 190, Subpart B) and a DCO bankruptcy (Part 190, Subpart C). Various parts of the CFTC Bankruptcy Rules have different definitions for FCMs and DCOs. For example, the definition of "non-public customer," "public customer," and "customer" all differ between an FCM and a DCO. Thus, being a customer of an FCM *versus* being a direct member of a DCO may have important implications in a bankruptcy scenario. The Commission should investigate and fully understand these potential implications of the FTX model.

other. At a minimum, we would expect that similar protections be required to ensure that the model does not create embedded advantages for certain participants. Additionally, the CFTC may want to consider conditions that prevent conflicts.

11. Impact on Non-Crypto Markets

As noted above, the FTX model as submitted to the Commission could apply to any type of future, option, or centrally cleared derivatives product. The simultaneous availability of both the existing DCM/DCO model and the proposed model for the same products could create unique issues that we urge the Commission to evaluate. For example, the 24/7/365 nature of the FTX model, compared to the current model of regular trading hours during weekdays, creates the potential for disparities among the exchanges and potential impacts to price formations, trading behaviors, including disruptive trading behaviors. In addition, the FTX model contemplates liquidating positions in a manner different from other models which could have wider market impacts. This could create opportunities for unwanted and possibly disruptive arbitrage between an auto-liquidated market and traditional markets listing the same products. The Commission should consider what consequences the simultaneous running of these different models could have on the system as a whole.

III. Conclusion

We appreciate the opportunity to provide the foregoing comments on the FTX Proposal. We hope it is clear from this letter that FIA strongly believes in the fundamental regulatory principle,: same business, same risks, same rules, used most recently in President Biden's Executive Order on digital assets and cryptocurrencies. FIA believes that that principle is appropriate here and its implementation will lead to ensuring a level playing field to those providing services in the market, and will protect customers by ensuring they receive all the components of a robust regulatory framework.

Thank you again for the opportunity to comment. Please contact Allison Lurton, Senior Vice President and General Counsel, at 202–466–5460, if you have any questions about this letter.

Sincerely,

ALLISON LURTON,
General Counsel and Chief Legal Officer.

SUPPLEMENTARY MATERIAL SUBMITTED BY CHRISTOPHER S. EDMONDS, CHIEF DEVELOPMENT OFFICER, INTERCONTINENTAL EXCHANGE, INC.

Mrs. CAMMACK. Well, thank you. I have only got about 30 seconds left and, Mr. Edmonds, I have a very lengthy question for you, so I am going to have to submit it for the record.

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Mrs. CAMMACK. Well, thank you, Representative Spanberger. I appreciate you yielding your time.

This is a little bit in the weeds so bear with me here, all right? Mr. Edmonds, you noted that, quote, "FTX participants lose their positions when markets move against them, and they are liquidated at adverse prices," end quote. But some market participants in volatile markets, especially agriculture markets, have noted a similar effect occurs with exchange circuit breakers when trading is halted for the day if prices move too much. In traditional markets, significant volatility plus a halt in trading can result in large unaffordable margin calls at the end of the day. If a participant cannot make their margin call, their position is liquidated and their initial margin is taken up to make up the difference, both closing out a potential hedge and costing the participant their initial margin. But the real kicker comes when the market reopens and the volatile price swings back the other way, returning the now liquidated position to profitability. How different is that scenario under traditional markets from the scenario that you laid out in your testimony? In both cases, the hedger is out of a hedge and collateral.

Mr. EDMONDS. Right, but in the——

Mrs. CAMMACK. Sorry, I know that was a mouthful.

Mr. EDMONDS. I will try to be as brief as possible. In the traditional marketplace, you have the FCM in most cases intermediating that relationship. They may be in certain circumstances extending you credit based on their knowledge of your known physical position. And they see that and that is a relationship

of your known physical position. And they see that and that is a relationship you have and that is a credit relationship you have with that intermediary. There is no chance for that in the case here.

I would also say as to the point of volatility, the price in the morning can be very against your position and a few hours later that position before the market session closes can come back into your position. In this case without a liquidation you have already lost that. In the other case you are going to have that position on an overnight when the market closes and the price is set and you are going to determine whether you pay for that or not, and that is going to be between you and the relationship you have with your FCM.

Mrs. CAMMACK. Well, and I know I just ran out of time. I would love to get your rebut to that as well just so that all of us can really understand all sides of this.

Congresswoman Cammack, thank you for your question inquiring between the difference in liquidating an agricultural market participant hedge and liquidating a transaction under the disintermediated model. As I mentioned during the hearing, commercial participants have relationships with FCMs who often provide credit and other services beyond intermediating the position with the clearinghouse. FCMs have discretion to allow, in some cases, commercial participants to maintain positions during times of significant volatility. For example, in the case of intra-day price volatility, there could be significant gains and losses during a trading session, however the position may end up being flat at the close. The FCM has the discretion to maintain the position and call for additional collateral or extend credit to the commercial participant as opposed to automatically closing out the position.

It is also important to note that commercial participants cannot have hedges disappear overnight. There is no automatic liquidation in an intermediated model. The FCM has a relationship with the customer and understands the importance of these positions to the market participants hedging their risk. These hedges are too important for both for the firm and overall ag economy because, ultimately, these hedge transactions can impact consumer price stability. If volatility creates untenable margin calls for participants, they may have options through FCMs which both preserve positions and avoid putting clearinghouses at risk. Under the disintermediated model, a commercial participant is faced with two options in a time of stress: (1) Round the clock monitoring of a position with remaining risk for liquidation depending on capital and speed of price volatility or (2) stranded capital and increased costs (all the way to the consumer) for the type of cushion necessary to prevent harmful liquidations. This is not a positive choice for commercial agriculture hedgers.

If you need further detail, I am happy to discuss with you or your staff personal. I appreciate the question and interest in this important matter.

SUBMITTED QUESTION

Question Submitted by Hon. Jahana Hayes, a Representative in Congress from Connecticut

Response from Hon. Terrence A. Duffy, Chairman and Chief Executive Officer, CME Group

Question. On February 9, 2022, CFTC Chairman Rostin Behnam told the Senate Committee on Agriculture that his agency would need a budget increase of at least $100 million to take on an expanded role overseeing cryptocurrency. Do you believe that the CFTC has adequate resources to properly oversee trades and protect consumers as it is proposed in the FTX model? If this model were to be adopted, and the CFTC *not* receive a significant budget increase, what do you think the outcome would be?

Answer. The FTX model is a proposal to change market structure that would affect the entire industry including the CFTC's duties and its allocation of resources. Because the FTX proposal avoids so many of the regulatory guardrails, capital requirements, risk monitoring, customer protections, and rules against conflicts of interest, it would likely place a much greater burden on the CFTC's resources with regard to the systemic risks that the application injects into markets as well as the customer protection deficiencies in the proposed model. For instance, the proposal's reliance on an algorithm to perform auto-liquidations that functions 24/7, would likely require CFTC staff to monitor markets 24/7 in real-time, have experts prepared to step in at a moment's notice to protect customer interests, and face the impossible task of preventing a nearly instantaneous market event that has the potential to spread into broader capital markets. In addition, the Commission would

lose the efficiencies that the National Futures Association (NFA) and the exchanges provide by serving as front line regulators monitoring FCM activities. The Commission would likely need additional staffing resources to monitor FTX's compliance with any FCM-like conditions the Commission may impose, and the multitude of regulatory exemptions that would be required for FTX to operate in the manner proposed, to assure that FTX is subject to effective oversight of its activities and the conflicts of interest embedded in its model.