Chair Thompson, Ranking Member Scott, and Members of the Committee, thank you for the invitation to appear before you today to discuss managing the risks arising from the recent volatility in the global commodity derivatives markets. I offer you my perspective on the current market volatility after having spent the past twenty-plus years in various regulatory, oversight, and private sector advisory capacities related to the commodity derivative markets. My appearance before you today is in my own personal capacity; I am not representing or speaking on behalf of any other person, governmental agency or private sector entity.

I am particularly pleased to be appearing again before this Committee. The Agriculture Committee’s oversight of, guidance to, and support for the Commodity Futures Trading Commission (CFTC) has been critical to the CFTC’s ability to fulfill its mission to ensure the commodity derivative markets operate in a fair and secure manner to discover prices and manage commodity price risks. This Committee’s jurisdiction over these markets is not only a reminder of the historical origins of the futures markets in the agricultural markets of the 19th and early 20th centuries, but also reflects and emphasizes the continued importance of those agricultural derivative markets—and the people who produce the commodities underlying these markets—to our national well-being and economy.

In my testimony today I will discuss the factors contributing to the recent spike in volatility in the commodity markets, describe the regulatory and market-based tools for managing volatility and price risks in the derivative markets, and offer some suggestions on how some of those market-based tools could be improved.

Summary

Commodity markets and the associated commodity derivative markets have experienced extraordinary price volatility in recent years. In the past year, factors contributing to this price volatility have included increasing demands for commodities as the U.S. and other economies recover from the shutdowns caused by the Covid-19 pandemic, the Russian invasion of Ukraine,
monetary tightening by central banks, China covid policies, and extreme weather. This price volatility has caused financial hardships across many sectors of the economy, including the agricultural sector, as well as for the American families and households who ultimately pay the bill for higher commodity prices.

In addition to the derivatives contracts themselves that are traded on commodity derivative exchanges, these exchanges have a variety of tools to help ensure market prices and volatility reflect the true forces of supply and demand. Margin levels, speculative position limits, daily price limits and trading halts can help ensure that prices are not caused by artificial means, such as manipulation, fraud, disruptive trading practices, and that market participants have a sufficient opportunity to respond to changing market conditions. None of these tools, however, can insulate market participants from price changes due to the basic forces of supply and demand, and each must be carefully calibrated so that they accomplish their intended purpose of limiting excessive speculation, ensuring orderly trading, and avoiding systemic risks, while also not unnecessarily impairing the basic price discovery or risk management functions of the markets.

The mission of the CFTC is to ensure the integrity of the commodity derivative markets, prevent manipulation, avoid systemic risks, protect market participants from fraud and other abuses, and promote innovation and fair competition among market participants and markets. CFTC regulations establish the basic requirements for margin, position limits, and orderly trading. The CFTC also is responsible for conducting market surveillance to ensure that trading is fair, orderly, and not subject to manipulation or other artificial disruptions, and for bringing enforcement actions for violations of its regulations and the Commodity Exchange Act (CEA).

Generally, the types of risks affecting commodity prices in recent years are not unique. Political disputes, general economic fluctuations, war, transportation disruptions, and extreme weather have affected commodity markets throughout history. However, severe weather events are increasing in unprecedented intensity and frequency. There is substantial evidence that climate-related risks now pose a recurring existential threat to many households, businesses, and communities, and threaten the stability of financial markets. It is prudent, therefore, that we improve our tools to manage such risks in the commodity derivative markets. This work includes the development and use of new risk-management products and markets, increased disclosures regarding climate-related risks, and vigorous oversight of these products and markets by the CFTC to ensure the integrity of new markets and products. The CFTC has begun this important work with the assistance of public input, and I look forward to the progress of the agency and market participants in this area.
Recent Commodity Market Volatility

Several factors have contributed to commodity market volatility in 2022 and continuing into 2023. These include:

Post-pandemic economic recovery. As consumer spending increased and the U.S. and other economies recovered from the shutdowns caused by the Covid-19 pandemic, supply-chain bottlenecks contributed to supply shortages, increased storage and transportation costs, increased counterparty risks, and therefore, ultimately, increases in prices.¹

Russian invasion of Ukraine. The Russian invasion of Ukraine in late February 2022 and the resulting U.S. and European Union economic sanctions led to significant increases in prices and volatility in a variety of key commodities, including oil, wheat, and corn. As the notional value of these commodities increased, due both to inflation and the Russian invasion, margin levels increased as well.²

Monetary tightening. Beginning in March 2022, the Federal Reserve began to raise short-term interest rates by increasing its federal funds target interest rate. Overall, in the past year the Federal Reserve has increased short-term interest rates by 4.25%. One effect of the increase in these rates has been the strengthening of the dollar against other major currencies. Over the long term the increased rates and the resulting increase in the cost of credit are anticipated to reduce investment and consumption, thereby lowering inflation and prices.³

China Covid policies. The reopening of the Chinese economy after several years of Covid-related restrictions has contributed to commodity price volatility. As the world's second-largest economy, and largest consumer of a variety of commodities, including soybeans and

---


copper, changes in China's demand for industrial, energy, and agricultural commodities can significantly affect global supply chains and prices.⁴

**Severe weather.** As the National Oceanic and Atmospheric Administration (NOAA) reports, “record drought gripped much of the U.S. in 2022,” “the nation [was] struck with 18 billion-dollar disasters,” and “[t]he year was also marked by numerous severe weather events, devastating hurricanes and deadly flooding across parts of the country.”⁵ The extreme drought conditions in the west, high plains, and several southern states led to the smallest hard red winter wheat crop since 1963, lowest corn yields since possibly 2012, and the smallest U.S. cotton crop in 12 years.⁶ The drought led to historically low levels of the Mississippi River, disrupting barge traffic and increasing transportation and storage costs for agricultural commodities normally transported downriver. Flows along the Colorado River in the western U.S., as well as water levels at the Glen Canyon and Hoover dams also have been significantly reduced, threatening the supply of water and power for communities, industries, and ranching and farming in the Colorado River basin.

Severe weather struck globally in 2022. Extreme heat, drought, and wildfires plagued Europe, reducing electricity generation and affecting agricultural production, leading to increased imports of corn.⁷ “Relentless drought” in Brazil is expected to limit soybean production; in previous years the drought also affected coffee and orange juice supplies.⁸ Devastating floods in Pakistan that submerged one-third of the country, killed thousands of people

---


⁵ NOAA, *Record drought tripped much of the U.S.* in 2022, Jan. 10, 2023, available at: [https://www.noaa.gov/news/record-drought-gripped-much-of-us-in-2022](https://www.noaa.gov/news/record-drought-gripped-much-of-us-in-2022). According to NOAA, Hurricane Ian was the single most costly event of 2022, with a cost of $113 billion. Severe weather events have been recurring in recent years. Over the past seven years, “122 separate billion-dollar disasters have killed at least 5,000 people, with a total cost of more than $1 trillion in damages.” *Id.*

⁶ Source: CFTC.


and displaced millions, damaged or destroyed over 8 million acres of agricultural lands, affecting cotton, rice, and wheat production and exports. A record heatwave in India “is threatening to damage grains and dent the country’s wheat production for the second straight year.” China experienced a record heat wave.

Risk Management in Derivative Markets

Commodity derivative markets enable market participants – such as farmers, ranchers, producers, manufacturers, processors, marketers, and consumers – to discover prices and manage commodity price risks. For example, by selling contracts for future delivery on a futures exchange (a “designated contract market” or “DCM”) a farmer can, in effect, lock in a sales price for a commodity such as wheat to be delivered at a future time, thereby hedging against price changes (decreases or increases) between the time of sale and the time of actual delivery of the commodity. Similarly, a buyer of a futures contract on the exchange, such as a food processor, can lock in a purchase price for wheat to be delivered at a specific time in the future, thereby hedging against any price increases (or decreases) between the time of the purchase of the futures contract and the delivery of the wheat. Because in a commodity market there often is not an exact balance between purchasers and sellers, speculators play an important role in providing liquidity and assuming price risks that physical market participants may be unwilling or unable to assume.

Indeed, futures markets in the United States developed in the mid-18th century – including the use of standardized contracts for future delivery, the development of quality standards and inspections, and the establishment of the Chicago Board of Trade – in order to enable buyers and sellers of agricultural commodities to manage the very same type of price risks prevalent in today’s markets. For example, just as these new types of contracts were being developed to manage prices risks from storage and transportation, the Civil War broke out, leading to substantial volatility, price increases, and trading, including speculative trading, for key agricultural commodities, particularly oats (which the Union army needed to feed its horses), corn, and wheat. By 1875, “trading rules were fairly complete, there was a substantial volume of trading, and merchants used futures to hedge inventories to earn carrying charges . . . ”

---

9 Ijaz Nabi, Brookings, Responding to Pakistan floods, Feb. 10, 2023, available at: https://www.brookings.edu/blog/future-development/2023/02/10/pakistan-floods/; CFTC.


12 Thomas A. Hieronymus, Economics of Futures Trading For Commercial and Personal Profit (Commodity Research Bureau, 1971), at p. 74.
One of the leading authorities on the futures markets described the beginnings of the futures markets as follows:

"Futures trading evolved out of risk financing, inventory, and pricing problems of handlers and processors of cash commodities . . . . The first fifty years of the history of futures trading in the U.S. is the history of feverish speculative activity, of contests among giants, and of attempts to manipulate prices. These contests resulted in the evolution of a set of competitive rules."\(^\text{13}\)

Congress has recognized the price discovery and risk management purposes of the commodity derivative markets, and it has charged the CFTC with the regulation and oversight of those markets. Section 3(a) of the Commodity Exchange Act (CEA) declares: "The transactions subject to this Act are entered into regularly in interstate and international commerce and are affected with a national public interest by providing a means for managing and assuming price risks, discovering prices, or disseminating pricing information through trading in liquid, fair and financially secure trading facilities."\(^\text{14}\) Section 3(b) states that the purpose of the CEA is to serve this national interest "through a system of effective self-regulation of trading facilities, clearing systems, market participants and market professionals under the oversight of the [CFTC]." Section 3(b) states the further purpose of the CEA "to deter and prevent price manipulation or any other disruptions to market integrity," to "ensure the financial integrity of transactions . . . and avoidance of systemic risk," to protect market participants from fraud and abusive practices, and to "promote responsible innovation and fair competition amongst boards of trade, other markets, and market participants."\(^\text{15}\)

The CFTC and the designated contract markets (i.e., exchanges licensed to trade contracts for future delivery, referred to hereinafter as "exchanges") have established a number of requirements for and parameters around the trading of futures contracts to ensure the futures markets continue to perform their intended function of facilitating price discovery and risk management.\(^\text{16}\) These include margin requirements, speculative position limits, price limits and "circuit breakers" or trading halts. Both the CFTC and the exchanges also conduct market surveillance, potentially followed-up with enforcement activity or, in the case of the exchanges, disciplinary action, to detect, deter, and prevent fraud, manipulation, and other disruptive trading activity.

**Margin requirements.** The purpose of margin requirements in the commodity derivative markets is to help ensure that a market participant with a long position (i.e., buyer of a contract for future delivery) or short position (i.e., seller of a contract for future delivery) in a

\(^{13}\) *Id.* at pp. 81-2.

\(^{14}\) 7 U.S.C. Sec. 5(a).

\(^{15}\) 7 U.S.C. Sec. 5(b).

\(^{16}\) Similar requirements and parameters apply in the swaps markets; for ease of reference, I only refer to the futures markets here.
commodity has posted sufficient funds to the clearinghouse so that the participant will not default upon an adverse price movement. CFTC regulations establish minimum margin requirements for futures contracts traded on an exchange; the clearinghouses have flexibility to adopt higher margin requirements, but they cannot establish lower margin requirements.

Futures commission merchants ("FCMs") are critically important intermediaries that execute trades on an exchange on behalf of their customers, post the requisite amount of margin to the clearinghouse, and collect the margin for those trades from their customers. FCMs also guarantee the performance of their customers to the clearinghouse, providing another level of protection to exchange participants if a participant defaults. FCMs also may be called upon to contribute funds in the event of a default of another FCM. FCMs also perform a variety of other critical functions to and for market participants. They provide information, analyses, and advice to their customers, safeguard customer funds, and they are responsible for "know-your-customer" requirements and preventing money-laundering.

In times of significant increases in prices and volatility, margin levels generally will increase. Increases in margin requirements as prices are increasing can place significant financial burdens on market participants at a time when they can least afford it, as well as potentially create systemic risks as many market participants may be seeking additional funding for margin requirements at the same time. Increases in margin levels also can place stresses on FCMs, who must carry larger amounts of funding and capital to temporarily cover the increases in margin requirements for their customers.

One way to potentially avoid sharp increases in margin requirements would be to raise margin requirements generally, so that the increases would not be so sharp when prices and volatility increase. However, this would raise costs generally for end users in the futures markets, as well as increase costs for many of the FCMs that serve these end users, at a time when these end users and intermediaries already are under financial stresses. Margin levels therefore require careful calibration to ensuring that margin requirements continue to mitigate counterparty risk, help prevent systemic risks, yet do not unduly impair market liquidity or the availability of intermediaries to serve end users.

Speculative position limits. Limits on the amount of speculative positions a person may hold or control on an exchange are intended to ensure that prices on the exchange reflect the forces of supply and demand rather than distortions due to excessive speculation in the price of the commodity. Speculative position limits also help prevent price manipulation, particularly squeezes and corners as futures contracts near expiration. In conformance with the requirements of the Dodd-Frank Act, in January 2021, the Commission finalized the most recent revisions to its speculative position limit rules. As provided by the CEA and the Dodd-Frank Act, positions that constitute bona fide hedging are exempt from the speculative position limits. Although the CFTC establishes the overall requirements for position limits, the exchanges are responsible for implementing those limits.
Price limits and circuit breakers. Daily price limits (i.e., limits on how much the price of a contract can increase or decrease in a single day) and circuit breakers (i.e., pauses in trading for limited periods of time following extreme price moves) serve to pause trading during extraordinarily large price movements or periods of extreme volatility, to help ensure the price movements accurately reflect the forces of supply and demand rather than speculative excesses or panic buying and selling, or “fat-finger” or other types of errors in trade execution. These pauses in trading and price movements enable exchanges and the CFTC to review such movements and respond as may be appropriate, provide market participants with a “cooling-off period” to analyze the recent changes in price, adjust their positions accordingly, and meet any additional margin requirements resulting from such movements. As with margin levels, price limits and trading halts must be calibrated so that such limits or halts accomplish their purpose in a manner that does not unduly interfere with the price discovery or risk management functions of the market.

Market surveillance. Both the exchanges and the CFTC have a responsibility to conduct market surveillance to detect fraud, manipulation, or other artificial disruptions to the legitimate forces of supply and demand as expressed through prices on the exchange. The CFTC’s market surveillance program monitors trading activity, large trader positions, and deliverable supplies as physical commodity contracts near expiration to ensure the integrity of settlement prices as contracts near expiration, the relationships between cash markets and futures markets generally, and, working in conjunction with the Securities and Exchange Commission, monitors the arbitrage between the equities markets and the exchanges that trade indexes based on those equities.

The CFTC’s market surveillance program also is responsible for monitoring compliance with CFTC or exchange-set position limits. Although positions that constitute bona fide hedging are exempt from the speculative position limits, the CFTC also monitors hedgers’ compliance with their exemption levels.

During times of unusual market activity or extraordinary price movements, the Commission may conduct detailed investigations or examinations to traders’ positions and market activity to determine whether there has been any artificial disruption to or interference with the normal forces of supply and demand. In addition to detecting potential wrongdoing, these investigations and examinations may reveal issues in contract or market design that can cause disruptions under certain market stresses or conditions, and that can be remedied to improve market operation. Vigorous surveillance of the derivative markets, including detailed examination or investigation of unusual or extreme market conditions, is necessary not just to

---

19 Id.
detecting wrongdoing and improving market design, but also to maintaining public confidence – and thereby liquidity – in these markets.

**Enforcement actions.** Investigations of market disruptions and enforcement actions for violations of the CEA and Commission regulations is critical to preserving market integrity. Punishing violators deters future violations and provides market participants with confidence that the derivative markets reflect legitimate forces of supply and demand and are not determined by manipulation, fraud, or other disruptive activity. Traders that engage is disruptive, fraudulent, or manipulative behavior on an exchange may also be subject to disciplinary action by the exchange, which has the front-line responsibility to monitor trading on the exchange to ensure it is conducted in accordance with the rules of the exchange.

**Need for Improvements in Risk Management for Climate-Related Events**

Although the particular way in which the particular risks leading to price increases and volatility over the past several years have become manifest may have been idiosyncratic, the general nature of these risks is new or unique. War, bad weather, disease, political strife, and economic ups and downs have been prevalent for as long as civilization has existed. Over the past century and a half our derivative markets and the regulatory system overseeing those markets have developed a variety of tools, as described above, to enable producers, marketers and consumers of commodities to manage these risks. Further, as described above, these tools need continuous oversight and calibration to ensure that they continue to serve their intended function.

Of these general risks, however, there is one significant qualitative and quantitative difference: the severity and frequency of weather-related disruptions has increased significantly in recent years and is anticipated by many to continue to increase in severity and frequency in the future. There are a number of ways existing risk management tools potentially could be improved to enable market participants to better to manage these increasingly severe weather or climate-related risks. These include the development of new products and markets to manage climate-related risks, and improved disclosures of climate-related risk data. In light of the potential magnitude of the threat posed by these climate-related risks to individual businesses and overall financial stability, it is critical that work continue towards these improvements in our risk management capabilities.

There is substantial evidence that climate change poses significant risks to communities across the United States, including “growing challenges to human health and safety, quality of life, and the rate of economic growth.” With respect to agriculture, in 2019 the Fourth National Climate Assessment reported, “Rising temperatures, extreme heat, drought, wildfire on rangelands, and heavy downpours are expected to increasingly disrupt agricultural productivity in the United States. Expected increases in challenges to livestock health, declines in crop yields

---

and quality, and changes in extreme events in the United States and abroad threaten rural livelihoods sustainable food security, and price stability.”

In September 2021, the CFTC’s Market Risk Advisory Committee (MRAC) issued a Report titled “Managing Climate Risk in the U.S. Financial System,” which concluded that “Climate change poses a major risk to the stability of the U.S. financial system and to its ability to sustain the American economy.” The MRAC noted that derivative markets “can be part of the solution,” and suggested new derivative contracts could be developed to manage these new climate-related risks. The MRAC also recommended that “[f]inancial regulators, in coordination with the private sector, should support the availability of consistent, comparable, and reliable climate risk data and analysis to advance the effective measurement and management of climate risk.”

In October 2021, the Financial Stability Oversight Council (FSOC) identified climate-related financial risks as an emerging threat to the financial stability of the United States. The FSOC assessed the actions-to-date of the council members to incorporate climate-related financial risk into their regulatory or supervisory activities, and recommended a variety of additional measures for the council members to take, either individually or in coordination with other members, to improve the identification, consideration and management of these risks. Public disclosure of climate-related financial risks was one of the key measures identified by the FSOC as integral to sound risk management practices for climate-related risks. The FSOC stated:

The resiliency of the financial system is, in part, dependent upon the resiliency of the firms that comprise it. In general, an individual firm is more resilient when it has sound processes for assessing risks and applies appropriate risk management practices. The disclosure of risks, and plans for managing them, can help foster the resilience of the financial system by allowing investors and market participants to factor that risk into their decision-making. This, in turn, facilitates better pricing of that risk information into financial markets. This pricing of climate-related risk can help reduce the likelihood of a financial shock associated with a sudden repricing of assets exposed to climate-related risks.

---

21 Id., at p. 29.
23 Id., at p. 70.
25 Id., at p. 68. See also, The Task Force on Climate Related Financial Disclosures, Final Report, Recommendations of the Task Force on Climate-related Financial Disclosures (June 2017).
During my tenure as a Commissioner of the CFTC, I had the privilege of sponsoring the Energy and Environmental Markets Advisory Committee (EEMAC). In 2021, during my sponsorship, the EEMAC held several meetings to explore how new derivative products and new derivative markets can help manage climate-related financial risks. At the time, I recommended three principal ways for the CFTC to improve the management of climate-related risks. First, the Commission must ensure the integrity of the markets it regulates, including any markets associated with climate-related derivatives. Second, the CFTC should work with exchanges and market participants in the development of new products that will help companies manage climate-related risks. And third, the CFTC should “ensure appropriate management and disclosure of climate-related risks.”

I am pleased that the Commission is continuing to make progress in these areas. In June 2022, the CFTC issued a Request for Information (RFI) to better inform the agency’s understanding and oversight of climate-related financial risk related to the commodity derivatives markets. The Commission stated the responses to the RFI will help to inform the Commission’s next steps in this area and its response to the FSOC’s recommendations. The RFI asked questions and sought information in a variety of areas, including with respect to risk management regulations and industry practices as they relate to climate-related financial risks, disclosure requirements regarding climate-related financial risks, and risk management product innovation. I understand that the Commission staff is currently reviewing the public responses to the RFI, and I look forward to the Commission’s next steps in this area. It is imperative for our commodity derivative markets and our financial system in general that we continue to make progress in the development of these mechanisms for managing climate-related financial risks.

Thank you again for providing me with the opportunity to appear before the House Agriculture Committee.