April 24, 2024

Christopher Kirkpatrick
Secretary of the Commission
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, N.W.
Washington, DC 20581

Re: Request for Comment on the Use of Artificial Intelligence in CFTC-Regulated Markets

Dear Mr. Kirkpatrick:

Better Markets[1] appreciates the opportunity to comment on the request for comment on the use of artificial intelligence ("AI") in CFTC-regulated markets ("Request") issued by staff of the Commodity Futures Trading Commission ("CFTC" or "Commission").[2] The purpose of this comment letter is to provide CFTC staff insights on the benefits and risks of AI use within CFTC-regulated markets.

As CFTC staff has noted, the increasing exploration and adoption of AI technologies by regulated entities, registrants, and other market participants offer significant potential benefits for derivatives markets. These include enhanced analytical capabilities, improved decision-making processes, and increased operational efficiencies. However, the deployment of AI also introduces substantial risks that must be meticulously managed. Key concerns include the safeguarding of market safety, the protection of customer interests, adherence to robust governance practices, assurance of data privacy, effective mitigation of biases, and strengthening of cybersecurity measures.

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[1]   Better Markets is a non-profit, non-partisan, and independent organization founded in the wake of the 2008 financial crisis to promote the public interest in the financial markets, support the financial reform of Wall Street, and make our financial system work for all Americans again. Better Markets works with allies—including many in finance—to promote pro-market, pro-business, and pro-growth policies that help build a stronger, safer financial system that protects and promotes Americans' jobs, savings, retirements, and more.

[2]   See CFTC Staff Releases Request for Comment on the Use of Artificial Intelligence in CFTC-Regulated Markets (January 25, 2024), available at https://www.cftc.gov/PressRoom/PressReleases/8853-24.

The Request specifically seeks input on the use of AI within the confines of CFTC-regulated frameworks, rather than addressing broader AI issues. The request focuses on AI as defined by President Biden's Executive Order,[3] and with that frame of reference, it aims to gather information that can help refine the Commission's supervisory strategies and evaluate the necessity for future regulatory guidelines or rulemaking. This comment letter seeks to contribute constructively to that process, advocating for a balanced approach that leverages AI's advantages while rigorously addressing its potential drawbacks.

Background

The field of artificial intelligence is exploding. As the headlines proclaim, the race is on in the private sector to be the most successful AI company, with huge amounts of money driving the rush to be the leader in the field. The push to incorporate AI into the financial markets is equally intense. Spending by financial services companies on AI now exceeds spending on AI in all other industries, even tech.[4] Wall Street megabanks are the drivers of this growth. For example, the five largest investment banks filed 94 percent of AI-related patents between 2017 and 2021, published two-thirds of the AI research papers, and accounted for half of AI investments.[5] Experts expect that financial institutions' spending on AI will continue to expand, doubling from 2023 to 2027 and topping $400 billion.[6]

Sophisticated computer programs are increasingly influential in the derivatives markets. Some technologies, such as high-frequency trading algorithms, are now well-established. These algorithms enable large trading firms to capitalize on split-second opportunities in futures and options markets, often gaining an edge over competitors who do not have the same speed of trade execution or depth of market access. Furthermore, automated trading systems, which dominate this sector, provide algorithmic strategies designed to manage complex portfolios of derivatives, minimizing human error and maximizing efficiency. As these AI technologies advance and new ones are introduced, advocates point out significant potential benefits for the derivatives markets, including heightened market efficiency, reduced trading costs, and improved liquidity management.[7] These improvements are critical in supporting the robustness and stability of the financial markets, ultimately benefiting institutional investors and the broader financial ecosystem.

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[3]   Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (Oct. 30, 2023), https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/.

[4]   *See* Justin Kloczko, *Hallucinating Risk*, CONSUMER WATCHDOG 2 (Jan. 2024), https://consumerwatchdog.org/wp-content/uploads/2024/01/Hallucinating-Risk.pdf.

[5]   *See The Evident AI Innovation Report*, EVIDENT INSIGHTS 2 (July 2023), https://evidentinsights.com/reports/evident_ai_innovation_report?id=eae8795d70.

[6]   Jeff Kearns, *AI's Reverberations Across Finance*, INTERNATIONAL MONETARY FUND (Dec. 2023), https://www.imf.org/en/Publications/fandd/issues/2023/12/AI-reverberations-across-finance-Kearns.

[7]   *See generally Mihir A. Desai, What the Finance Industry Tells Us About the Future of AI*, HARV. BUS. REV. (Aug. 9, 2023), https://hbr.org/2023/08/what-the-finance-industry-tells-us-about-the-future-of-ai; William

However, along with utopian promises of faster, more efficient, and lower cost processes that will supposedly benefit consumers, companies, and the entire economy loom the increasingly intense risks of fraud, discrimination, market crashes, and illegal activity that is increasingly difficult to identify and control given the nature of AI. AI applications in finance present serious risks to investors, markets, and financial stability by exacerbating existing channels of instability and creating new ones.[8] They are powerful tools for predatory exploitation, fraud, and other illegal conduct. Moreover, the ability of AI to augment or replace advisers and other fiduciaries who are seeking to serve the best interests of clients remains unclear. And among the most threatening scenarios are market crashes and data breaches on a massive scale.

The dangers promise to intensify. The industry's goal now is to improve the power, sophistication, and speed of AI systems to the point that they can, in essence, think for themselves. This, in turn, has generated concerns that AI may ultimately, unless carefully controlled and regulated, pose existential threats to a wide range of human activities and institutions, including those in finance. As SEC Chair Gensler recently warned, with this new generation of technology, if widely shared across markets and jurisdictions, comes the threat of a massive financial crisis in the years ahead.[9] In fact, given the extraordinary power that AI is rapidly gaining, there's no question that its risks will increase; the open question is whether its benefits will increase as well and outweigh the enormous risks. One thing is certain: The old Silicon Valley motto of "move fast and break things" simply cannot apply here. The stakes are simply far too high, especially as AI proliferates in the financial sector and the financial markets.

Better Markets commends the CFTC for assessing the role of artificial intelligence within its regulated markets to determine if future rulemaking is necessary. While regulatory bodies, including the Securities and Exchange Commission (SEC), have begun to establish some foundational measures through policy statements, guidance, and consumer advisories, it is clear that comprehensive standards are only just beginning to take shape, as seen in the SEC's proposals regarding predictive data analytics. However, given AI's rapid evolution and its deepening integration across all facets of the financial sector—from securities to banking and derivatives—there is a pressing need for a more dynamic regulatory approach. This approach should not only keep pace with technological advancements but also prioritize consumer protection, ethics,

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Magnuson, *Artificial Financial Intelligence*, 10 HARV. BUS. L. REV. 337, 341 (2020); Tom C.W. Lin, *The New Financial Industry*, 65 ALA. L. REV. 567, 567 (2014).

[8] *See, e.g.*, Jon Danielsson & Andreas Uthemann, *How AI Can Undermine Financial Stability*, CENTRE FOR ECONOMIC AND POLICY RESEARCH (Jan. 22, 2024), https://cepr.org/voxeu/columns/how-ai-can-undermine-financial-stability; Alena Brynjolfsson & Erik Brynjolfsson, *The Intelligence Paradox: AI May Make Markets Less Rational*, WALL ST. J. (Jan. 31, 2024), https://www.wsj.com/articles/the-intelligence-paradox-ai-may-make-markets-less-rational-8fadffeb; *Ghiath Shabsigh & El Bachir Boukherouaa, Generative Artificial Intelligence in Finance: Risk Considerations*, International Monetary Fund (Aug. 2023), https://www.imf.org/en/Publications/fintech-notes/Issues/2023/08/18/Generative-Artificial-Intelligence-in-Finance-Risk-Considerations-537570.

[9] Declan Harty & Steven Overly, *Gensler's warning: Unchecked AI could spark future financial meltdown*, POL. PRO (Mar. 19, 2024).

transparency, accountability, and the overall stability of the financial system.[10] Better Markets recognizes the CFTC's efforts in this area and the need for agile, forward-looking regulatory frameworks to adequately address the challenges and opportunities presented by AI.

Summary of Comments.

The integration of AI into CFTC-regulated markets brings transformative potential, significantly enhancing market efficiency and oversight. AI's rapid data processing capabilities improve decision-making, facilitate real-time analysis of market conditions, and can detect and reduce occurrences of market manipulation. Furthermore, AI's application in risk management through predictive analytics allows firms to quickly adapt strategies in response to evolving market dynamics, enhancing compliance and market integrity.

However, the use of AI also introduces risks that need careful management. Systems using similar AI strategies can create systemic vulnerabilities, potentially triggering and intensifying market instabilities that can lead to full-blown crises. Additionally, the opaque nature of AI decision-making processes complicates CFTC's regulatory oversight, as it is difficult to trace the origins of harmful behaviors or embedded biases.

To fully realize AI's benefits while mitigating its risks, robust regulatory frameworks are essential. These frameworks must ensure AI's deployment promotes market stability, transparency, and fairness. Managing these challenges effectively will be key to harnessing AI's potential in maintaining the integrity of financial markets.

The Essential Attributes of Effective AI Oversight Include Stronger Regulation, Enhanced Accountability, and Additional Resources.

Without robust, forward-thinking regulation, the potential hazards and misuse of AI could overshadow the benefits it promises. In the context of finance, the necessary measures to mitigate AI risks likely deviate significantly from traditional regulatory actions.[11] It is essential that there be explicit standards and requirements, including mandatory pre-launch testing, ongoing evaluation, and vigilant monitoring of these technologies by firms. Additionally, there must be transparency with both regulators and clients when issues or incidents occur. Relying solely on disclosures about AI risks is insufficient; history has shown that disclosure does not adequately protect investors, particularly in areas involving complex technical matters, as is certainly the case with AI. Such proactive and detailed regulatory frameworks are crucial to maintaining the integrity and stability of financial markets in the face of rapidly advancing AI technologies.

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[10]   *See, e.g.*, Jeff Pedowitz, *AI In Financial Services Will Require Robust, Transparent Regulation*, AM. BANKER (Dec. 12, 2023), https://www.americanbanker.com/opinion/ai-in-financial-services-will-require-robust-transparent-regulation; Barry Quinn, Fearghal Kearney & Abhishek Pramanick, *How Will Artificial Intelligence Affect Financial Regulation?*, ECONOMICS OBSERVATORY (Oct. 18, 2023), https://www.economicsobservatory.com/how-will-artificial-intelligence-affect-financial-regulation.

[11]   Magnuson, 10 HARV. BUS. L. REV. at 377.

To deter abuses of AI technology by bad actors, enforcement capabilities, tools, and sanctions must be dramatically increased throughout the financial industry. At the same time, regulatory agencies will need substantially more resources and expertise to keep pace with the efforts of a well-funded and highly motivated private sector to develop ever more advanced AI systems, especially those with applications in finance. Setting aside the technology firms like Google and others, consider that JP Morgan (which is a major CFTC registrant) is heavily investing in AI, "spending what CEO Jamie Dimon has said is 'hundreds of millions of dollars per year' on AI efforts across the bank."[12] The bank reportedly spent $15 billion on technology and data in 2023[13] and has developed an entire research arm devoted to AI,[14] creating synthetic data sets to use for modeling.

A Broad Definition of AI Is Necessary and Appropriate

Better Markets strongly supports the CFTC's approach in adopting the definition of AI as outlined in President Biden's October 2023 executive order.[15] This definition effectively captures the essence of AI: a machine-based system that, guided by human-defined objectives, can make predictions, recommendations, or decisions that influence real or virtual environments. This broad definition not only encompasses current systems capable of processing and acting on vast amounts of data at high speeds but also the emerging technologies that equip machines with capabilities akin to human thinking and judgment.

For instance, the SEC has adopted a similar viewpoint in its proposal concerning predictive data analytics, defining AI as the capability of a machine to imitate intelligent human behavior.[16] Likewise, the Financial Stability Board (FSB) describes AI as both the theory and development of computer systems able to perform tasks that typically require human intelligence.[17] These definitions underline a shared understanding across key regulatory bodies that AI spans a wide array of technologies, including machine learning, neural networks, deep learning, and natural language processing.

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[12]   Jeremy Kahn, *JPMorgan Chase tops first-of-its-kind ranking of A.I. progress in banking*, FORTUNE (Jan. 26, 2023), https://fortune.com/2023/01/26/jpmorgan-chase-tops-first-of-its-kind-ranking-of-a-i-progress-in-banking/.

[13]   Catherine Leffert, *JPMorgan Chase aims to create $1.5 billion in value with AI by year-end*, AM. BANKER (May 30, 2023), https://www.americanbanker.com/news/jpmorgan-chase-aims-to-create-1-5-billion-in-value-with-ai-by-yearend.

[14]   JP Morgan, ARTIFICIAL INTELLIGENCE RESEARCH (last visited Mar. 19, 2024), https://www.jpmorgan.com/technology/artificial-intelligence.

[15]   Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (Oct. 30, 2023), https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/.

[16]   Conflicts of Interest Associated with the Use of Predictive Data Analytics by Broker-Dealers and Investment Advisers (July 26, 2023), https://www.sec.gov/files/rules/proposed/2023/34-97990.pdf.

[17]   Financial Stability Board, *Artificial Intelligence and Machine Learning In Financial Services* (Nov. 1, 2017), https://www.fsb.org/wp-content/uploads/P011117.pdf.

This consensus among leading financial regulatory agencies underscores the importance of a cohesive regulatory framework that acknowledges AI's expansive and evolving nature. By aligning with the executive order's definition, the CFTC ensures that its regulatory approach remains comprehensive and adaptable, capable of addressing both the current applications of AI in financial markets and its future developments. This strategic alignment facilitates a more uniform regulatory landscape and enhances the ability of agencies like the CFTC to manage the unique challenges and opportunities presented by AI technology effectively.

AI Offers Potential Benefits in CFTC-Regulated Markets

The integration of AI into CFTC-regulated markets holds substantial potential benefits, promising to revolutionize aspects of market operations and oversight. One of the foremost advantages is the enhancement of market efficiency. AI can process and analyze vast quantities of data far more quickly and accurately than human counterparts, facilitating faster and more informed decision-making. This capability allows for real-time analysis of market conditions, leading to more efficient price discovery and potentially reducing the occurrence of market manipulation or anomalies.

Moreover, AI-driven technologies in derivatives markets can significantly improve risk management. By leveraging predictive analytics, firms can foresee and mitigate risks by adapting strategies in response to evolving market dynamics. Additionally, AI can streamline compliance processes by automating routine tasks and flagging anomalies in trading data that may indicate fraudulent activities or deviations from regulatory requirements. These advancements not only bolster market integrity but also enhance the protection of investors by ensuring that markets function transparently and fairly. As such, the deployment of AI in CFTC-regulated markets is poised to create a more resilient financial ecosystem, providing regulators and participants alike with tools that are both innovative and effective in upholding the principles of fair and orderly trading.

- AI applications at CFTC-regulated entities may fall into several basic categories, including:

  o Internal operations—AI allows firms to improve their portfolio and balance sheet management, compliance, underwriting, fraud detection, and client identification;

  o Trading enhancements—AI allows firms to use market analysis for proprietary trading, algorithmic trading, data analysis, portfolio management, predictive analytics, and market sentiment analysis, as well as trading recommendations and client advice; and

  o Actual client interactions—AI allows firms to provide customer service around the clock and can offer customers improved fraud prevention and cybersecurity.[18]

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[18]   Matthew Finio & Amanda Downie, *What is AI in finance?*, IBM (Dec. 8, 2023), https://www.ibm.com/topics/artificial-intelligence-finance.

- The use of AI technologies has the potential to benefit end-users and financial markets with:

    o Greater efficiency, lower cost, and improved access to customized financial services;

    o Enhanced compliance and risk management;

    o Improved financial performance and outcomes, with some positing a future where properly programmed AI offers the ideal financial guide, providing fully-informed, completely objective financial advice.

- Examples

    o <u>Risk Management in commodities trading</u>: AI can thoroughly analyze market trends and news, enhancing predictive analytics capabilities. It can help in crafting optimized trading strategies, which is crucial in the often unpredictable commodity sectors like oil and gas. By employing AI, traders can detect and interpret complex patterns in vast datasets and real-time market information, leading to more informed and timely decisions. AI automates the scanning of textual data, identifying risk-related insights from news articles and social media, which can significantly impact commodity prices. AI in risk management not only streamlines the decision-making process but also improves the accuracy and speed of risk assessment, thus offering a strategic edge in the fast-paced commodities market.[19]

    o <u>Accelerated Product Innovation</u>: AI can help develop new financial products and services rapidly, demonstrating the potential for AI to streamline product development cycles in the derivatives market.[20]

AI Also Threatens Significant Potential Harms in CFTC-Regulated Markets

While AI offers substantial benefits to CFTC-regulated markets, it also introduces potential harms that require careful consideration and management. A significant concern is the risk of systemic vulnerabilities. AI systems, particularly those involved in high-frequency trading and automated decision-making, can create complex, interconnected networks that may lead to unforeseen systemic risks. For instance, if multiple firms employ similar AI strategies, it could result in homogenized trading behaviors that amplify market shocks instead of dampening them, potentially leading to flash crashes or other market disruptions.

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[19]   Ali R., *AI in Commodities & Derivatives Trading* (Apr. 2, 2023), https://www.linkedin.com/pulse/ai-commodities-derivatives-trading-ali-h-rizvi/.

[20]   Kirsten Hyde, *Generative AI gaining traction in derivatives markets: Panellists at FIA Expo discuss how they are using AI*, FIA (Oct. 4, 2023), https://www.fia.org/marketvoice/articles/generative-ai-gaining-traction-derivatives-markets.

Additionally, the reliance on AI in derivatives markets raises concerns about transparency and accountability. The "black box" nature of some AI algorithms means that decisions are made without clear, understandable explanations for those decisions, making it difficult to assess compliance with regulatory standards or identify the root cause of harmful market behaviors.

This can undermine trust in market fairness and integrity, complicating the CFTC's efforts to monitor and enforce market rules. Moreover, AI can inadvertently perpetuate and even exacerbate existing biases if not properly monitored and controlled. For example, AI systems that learn from historical market data may continue to propagate past discriminatory pricing strategies or exclusionary practices unless explicitly designed to counteract such biases. These potential harms underscore the need for regulatory frameworks that ensure AI technologies are used in a way that prioritizes market stability, fairness, and transparency.

One of the critical elements of AI that President Biden highlighted in his 2023 Executive Order is that AI reflects the *principles of the people who build it, the people who use it, and the data upon which it is built.*[21] This highlights the tension that exists between the potential for useful innovation and profit that are propelling the development of AI and the imperatives of investor protection, market stability, and equal opportunity that must always be the guideposts for financial innovation. In reality, a long list of potential harms comes with AI. Some of these harms are not unique to AI, but the use of such technology can heighten or intensify the risk and the scope of harm.

They fall into at least three categories.

- First, some risks are ***inherent to the technology,*** including flawed programs, inadequate testing, incomplete or biased data inputs, deficient oversight, and insufficient data privacy protections. In addition, even sophisticated automated processes can cause or accentuate market disruptions, like those experienced during the 2010 Flash Crash, as they have historically had a limited capacity to adjust to market conditions and trends and by definition are only prepared to react to a discrete set of outcomes. To the extent that AI has the ability to vastly increase the capacity to adjust to different outcomes and apply truly sophisticated judgments and decisions in light of rapidly evolving market events, it has the potential to mitigate some of these risks. However, it is unlikely they can ever be entirely eliminated and, therefore, AI could actually generate larger and more far-reaching catastrophes than the Flash Crash.

- Second, other risks arise from ***the way AI is deployed***. These risks range from the use of AI in criminal schemes to more subtle forms of misuse, abuse, and predation. For example, some firms use trading prompts that are described as being favorably tailored to clients

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[21]   Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence.

based on AI analysis of their financial needs but in reality are tailored to the financial institution's desire to maximize profits at the expense of their clients.[22]

- Third, other risks are the ***indirect consequences*** of reliance on AI. These include labor force displacement for positions that are replaced by AI's capabilities and even environmental impacts from the use of extensive AI computing systems that have an elevated carbon footprint.

- Examples

    o Market manipulation and stability: AI algorithms can exacerbate market volatility and lead to financial crises. Their ability to execute derivatives transactions at high speeds and volumes can cause rapid market fluctuations. The lack of understanding of interconnected market dynamics by AI algorithms could inadvertently trigger massive sell-offs or purchases, destabilizing markets.

    o Influence on commodity pricing: In the commodities market, AI has the potential to alter market dynamics unpredictably through predictive analytics based on social media sentiment analysis, which could affect and distort commodity prices.[23]

The bottom line is that unless regulators move quickly to respond to these threats with strong, targeted rules; aggressive enforcement; and ample expertise and resources, the benefits of AI will be overwhelmed by these risks. It is imperative that the CFTC, along with all financial regulators, respond accordingly.

CONCLUSION

We hope these comments are helpful.

Sincerely,

Cantrell Dumas
Director of Derivatives Policy

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[22]   *See generally* Dennis M. Kelleher, Jason Grimes, and Andres Chovil, *Securities—Democratizing Equity Markets With And Without Exploitation: Robinhood, Gamestop, Hedge Funds, Gamification, High Frequency Trading, And More*, 44 W. NEW ENG. L. REV. 51 (2022).

[23]   HedgePointGlobal, *Artificial Intelligence (AI) in Commodity Markets: What could change?* (May 22, 2023), https://hedgepointglobal.com/blog/artificial-intelligence-ai-commodities/.

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