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Mr. Christopher Kirkpatrick
Secretary
Commodity Futures Trading Commission
1155 21st Street, NW
Washington, DC 20036

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Dear Mr. Kirkpatrick:

Nasdaq, Inc. (“Nasdaq”)¹ appreciates the opportunity to comment on the Commodity Futures Trading Commission’s (“CFTC” or the “Commission”) Request for Comment (“RFC”) on the use of artificial intelligence (“AI”) in CFTC regulated markets, as well as the implications of such use or adoption. Nasdaq commends the Commission for its efforts to develop a more detailed understanding of the use and impact of AI in derivatives markets. Nasdaq appreciates the thoughtful series of questions included in the RFC and submits the comments below with the intent of aiding the Commission in developing its understanding of AI. We look forward to ongoing engagement with the Commission as it considers adopting policy in this space.

Nasdaq has also provided some preliminary policy remarks we believe the Commission and other policy makers should take under advisement as they consider developing policy in this space. Nasdaq believes that government policy should encourage AI accountability in a way that considers the following guiding principles.

Reasonably Tailored & Industry Focused: Government policy should be reasonably tailored to the nature and degree of associated risk presented in an AI system and utilize existing legal and regulatory frameworks to avoid potential overlap with existing regulation. Principal authority should be vested in existing industry regulators while common definitions are harmonized amongst regulators. Additionally, government policy should not entail affirmative licensing other than in exceptional uses involving clear risks to human rights, national security, or public safety. Government policy should explore, however, leveraging models such as risk management frameworks and self-regulatory organization (SRO) models in terms of accountability and oversight from supervisory authorities, while also maintaining nimbleness and flexibility to address technological change.

Application Focused: Government policy should be use-case and context specific with a focus on the practical application and human impact of AI technologies. The role of human oversight

¹ Nasdaq (Nasdaq: NDAQ) is a S&P 500 global technology company serving the capital markets and other industries. Our diverse offering of data, analytics, software and services enables clients to optimize and execute their business vision with confidence.

and approval should follow from this application-focused approach, bearing in mind that the appropriate level of human oversight should be commensurate with the use-case, context and risk. Additionally, AI government policy should account for the full scope of AI applications, including cases of AI interaction with AI.

End User-Focused Transparency: We recognize the need for transparency in the field of AI. Transparency requirements should account for the sophistication and nature of the end users of the AI applications and third parties impacted by them.

Enable Financial Crime Fighting & Protect Investors: Government policy should account for the fact that criminal organizations will exploit AI technology for their own ends, disregarding laws or operating from jurisdictions outside of law enforcement’s reach. Accordingly, government policy should enable financial institutions to leverage AI to identify and defend themselves and members of the public from criminal activity. We are of the view that AI regulatory frameworks must allow for fighting financial crime, which we see as one of the prominent use cases for AI.

Promote Responsible Data Use: Government policy for AI needs to build on clear and consistent regulations for the governance, risk management, quality, security and use of the data on which the AI technology will operate. Divergent laws or regulatory uncertainty regarding regulation of data (including privacy rights) inhibits the ability to effectively regulate AI systems that will process it. Such regulation needs to be consistent within a jurisdiction and account for differing uses of AI. While the ability to analyze information is vital for compelling purposes such as crime fighting, and regulation must allow for it, using data for other purposes may prove problematic.

Encourage Modernization: Government policy should encourage and not overburden efforts to modernize capital markets, including leveraging the latest capabilities in cloud, AI and machine learning. Moreover, government policy should be flexibly formulated to allow for modernization and innovation in AI technologies. Regulation should incentivize workforce development that promotes skills and professional standards for those working in AI development and deployment.

Response to RFI Questions

- 1. Scope:** The RFI asked if the definition of AI used in the President’s Executive Order² is appropriate for CFTC-regulated entities and markets. While Nasdaq can appreciate the clarity afforded by the use of a uniform definition of AI, the definition proposed in the Executive Order is overly broad and could lead to AI being defined as any computer system. Instead, it would be advisable for the Commission to adopt a definition of AI that focuses on computer systems with the ability to make decisions or predictions based

² Executive Office of the President, Executive Order on the Safe, Secure and Trustworthy Development and Use of Artificial Intelligence, Sec. 8a(a), Oct. 30, 2023. *See also* White House Office of Science and Technology Policy, Blueprint for an AI Bill of Rights, Oct. 2022 (providing guidance on the design, development, and deployment of artificial intelligence (AI) and other automated systems so that they protect the rights of the American public.)

on automated, statistical learning. Such a definition would more accurately capture AI technologies that are currently employed within the industry without being over-inclusive.

- 2. General Uses:** Nasdaq currently utilizes what it calls the Strike Optimization System for use in its options markets. This system analyzes a database of historical trading activity to predict the volume of demand within the market for options at varying strike prices. Conducting this analysis allows the trading system to offer option contracts at the specific strike prices that are most likely to be in demand during the trading session. This allows Nasdaq to manage options with as many as 1.4 million different strike prices during any given trading session. The use of AI is integral to this process as it would not be possible for individuals to analyze the huge volume of data required to accurately determine the various strike prices that are most likely to be in demand during a given trading session.
- 4. AI & Geography:** With respect to the impact of geographic location on the use of AI, it is important to remember that the application of AI is often use case specific. In some cases AI systems are geographically segregated from the market or customers in question, while in other cases they are not. Regulations that mandate the limitation of AI to any particular jurisdiction or location could stifle adoption and reduce the efficacy of such systems. For example, one of the main benefits of AI is the ability to analyze very large amounts of data. The larger the dataset that is used for analysis, the more likely the data is representative of the activity taking place within a particular market. The use of this representative data will allow an AI system to come to more accurate conclusions regarding the activity in question. Limiting the dataset to only that information contained within a specific country, especially if the country in question is small, could result in AI output that is not as accurate or predictive as it could have been had it had the ability to analyze a more complete dataset. For this reason, regulators should not prohibit the use of AI across jurisdictional borders.
- 5. AI Roadblocks:** In Nasdaq’s view, the most significant obstacle to the increased adoption and use of AI in the context of activities listed in Question 2 deals more with regulatory uncertainty than the generic barriers outlined in the question. When considering the use of AI in financial markets, regulators should refrain from using a standardized assessment process that applies the same analysis to each AI system. Instead, regulators should assess an AI system based on multiple characteristics unique to that system and its intended use. The level of scrutiny must be commensurate with the intended use-case, the sophistication of the end-user, the degree of risk posed by the system and the level of discretion the system has to act autonomously or independently of guidance or rules. The risk posed by an AI application with the capacity for generative outputs that will allow the system to make choices freely is much higher than an AI system that draws from a limited dataset with a narrow scope of actions that may be taken. Accordingly, these two systems should not be assessed in the same manner by regulators. This is the approach largely adopted by the National Institute of Standards and Technology (“NIST”) in establishing its AI Risk Management Framework. The failure to adopt such an approach could prevent the implementation of AI systems that pose minimal risk but offer benefits to investors and financial markets.

- 6. AI & Third-Party Service Providers:** Nasdaq develops proprietary AI technologies that it uses in its own businesses and licenses AI functionality from third parties as well. Examples of both of these categories include Nasdaq’s Dynamic MELO order functionality which allows for AI-guided intraday variation of order marketability delay periods based upon real time assessments of market conditions. The Boardvantage Smart Documents system uses a third-party large language model (“LLM”) system to summarize documents for use by corporate board members.
- 7. Governance of AI Uses:** Nasdaq has a robust system of AI governance including AI oriented check points within our product development life cycle, ensuring that AI products and services have the appropriate talent attached. Nasdaq utilizes an AI governance committee made up of representatives from AI, Legal, Regulation & Risk, Technology, Compliance, and Internal Audit. Nasdaq's AI governance procedures are influenced by best practices in data science as well as applicable NIST guidance. Nasdaq’s due diligence regarding the implementation of AI functionality applies to both Nasdaq’s proprietary AI solutions and AI licensed from third parties.
- 10. Cybersecurity:** Market participants believe AI is a potential source of cybersecurity vulnerability that needs to be continually managed and assessed. This is especially the case when introducing AI into pre-existing processes. Governance is a critical part of managing these risks across the organization. As a result, governance frameworks have been aligned and structured to manage and accommodate AI projects, changes and identified risks. Organizations place an emphasis on high-risk projects with individuals with specialized expertise assigned for oversight on issues such as Cybersecurity. The risk assessment process and governance program incorporate cybersecurity posture management to address threats posed by incorporating and using AI. Some of the challenges in carrying out these safeguards include a skills shortage on behalf of the relevant personnel and external guiding frameworks not being updated in a timely manner.
- 11. Explainability & Transparency:** There are currently in existence AI systems that are in many ways more explainable, auditable and interrogable than human decisions. For example, methodologies such as Shapley Values, Input Sensitivity Analysis, Deep Taylor Decomposition, and Locally Interpretable Model Agnostic Explanations allow for the delivery of the system’s rationale at the time of prediction if latency and client demand merit it. At Nasdaq we also rely on these features to ensure AI systems are making sensible decisions whose rationale broadly aligns with our expertise and intuition.
- 13. Market Manipulation & Fraud:** While the question correctly notes the potential for market abuse and fraud that may result from the use of AI systems, it should also be noted that one of the best means of combating fraud is through the use of AI as well. As noted above, AI works best when it is allowed to analyze large, representative databases. The use of AI to identify and prevent fraud is, in all likelihood, the best means to combat malfeasance carried out by bad actors. AI can be used to analyze large databases of

financial transactions to identify unusual and anomalous activity that could be indicative of fraudulent trading or other nefarious activities.

14. Concentration: With the exception of LLMs, there is not a significant level of concentration of AI models among a small number of firms. While there are a limited number of cloud providers and open-source projects that provide the software and hardware tools used to train and serve AI models, the models themselves use diverse data inputs, proprietary knowledge and bespoke guardrails that vary as much by development group as by firm.

15. Bias: See 7 & 11

17. Privacy & Confidentiality: See 7, privacy concerns are assessed within the broader governance process.

Nasdaq applauds the Commission for issuing this RFC and seeking input from subject matter experts on the use of AI in derivatives markets. We encourage the Commission to consider the suggestions contained in this letter and look forward to the opportunity to aid the Commission as it works to develop its understanding of this topic. Thank you for your consideration of our comments. Please feel free to contact me with any questions.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "Aravind Menon".

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