BlackRock

August 12, 2024

U.S. Department of Treasury
Attn: Moses Kim
1500 Pennsylvania Ave NW
Washington, D.C. 20220

Submitted electronically via *http://regulations.gov*

Re: U.S. Department of the Treasury Request for Information on Uses, Opportunities, and Risks of Artificial Intelligence in the Financial Services Sector, TREAS-DO-2024-0011

Dear Mr. Kim,

BlackRock, Inc. (together with its affiliates, BlackRock)[1] appreciates the opportunity to respond to the U.S. Department of the Treasury's ("Treasury") request for information ("RFI") relating to the use of Artificial Intelligence ("AI")[2] in the financial services sector. Since our founding 37 years ago, we have become a leading provider and user of financial technology in the asset management industry. During this time, we have become a strong supporter of leveraging technological innovation to enhance the investor experience and to help investors achieve financial well-being. Today, BlackRock

[1] BlackRock is one of the world's leading asset management firms. We manage assets on behalf of institutional and individual clients worldwide across equity, fixed-income, liquidity, real estate, alternatives and multi-asset strategies. Our client base includes private and government pension plans, endowments, foundations, charities, official institutions, insurers and other financial institutions, as well as individuals around the world. We manage retirement funds on behalf of millions of Americans, including public pension funds in 47 of the 50 states.

[2] Request for Information on Uses, Opportunities, and Risks of Artificial Intelligence in the Financial Services Sector (June 6, 2024), 89 FR 50048 (June 12, 2024) ("Treasury RFI"). In this letter, we employ the term "AI" similarly as the RFI to encompass both existing or "traditional" (*e.g.*, machine learning) and emerging or "new" (*e.g.* generative AI) AI technologies. *See* Treasury RFI at 50050. We distinguish between these types of AI for discussion purposes as noted. *See* Exec. Order No. 14110 (Oct. 30, 2023), 88 FR 75191 (Nov. 1, 2023) (defining "generative AI" as "the class of AI models that emulate the structure and characteristics of input data in order to generate derived synthetic content").

teams across different disciplines utilize a variety of AI technologies, including machine learning and natural language processing tools, to help carry out tasks and enhance existing investment processes. As today's AI tools continue to evolve and even newer AI technologies emerge—including those that feature generative AI capabilities—we will continue to build on our efforts to evaluate their most beneficial use for our clients and investors. These initiatives include BlackRock AI Labs, which we established in 2018 to conduct research and development into the use of AI in finance,[3] and more recently, a central hub and operating model to coordinate different facets of generative AI use across our business.

While the use of AI has yielded important benefits to both BlackRock and the broader financial markets, fully realizing those benefits requires that users continue to manage the associated risks. We believe that AI applications have generally improved market functioning and efficiency, lowered costs for investors and barriers to entry to the capital markets, and boosted investor confidence. We also agree with Treasury, however, that the emergence of new and more sophisticated AI tools and strategies involving AI will continue to pose new challenges, such as those that relate to explainability and bias, data protection, and third-party oversight. Addressing these challenges requires a pro-active, human-driven approach to risk management.

In this letter, we describe how we use AI and the benefits of such use, along with our "human first" approach to controlling our usage and managing the associated risks. Further, we offer some preliminary ideas on areas for collaboration—we believe that an opportunity exists for the financial services sector and policymakers to work together in exploring common approaches to governance.

I. BlackRock's Use of AI[4]

BlackRock applies traditional, machine learning AI technologies to various functions of the firm, including investment and portfolio management, trading, and cyber risk management.[5] More recently, we have started to deploy generative AI tools—within the parameters set forth by our risk management framework[6]—and continue to evaluate further opportunities to leverage their capabilities.

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[3] BlackRock AI Labs, https://www.blackrock.com/corporate/ai.
[4] Section I of this letter is intended to respond to Questions 2, 3 and 5 of the RFI.
[5] This letter highlights several, but not all, uses of AI at the firm. We focus our comments on areas for which we believe that Treasury has a strong interest in understanding how AI is applied. *See also* BlackRock, *Artificial intelligence and machine learning in asset management* (Oct. 2019) ("BlackRock AI ViewPoint") (describing other uses of AI at the firm), *available at* https://www.blackrock.com/corporate/literature/whitepaper/viewpoint-artificial-intelligence-machine-learning-asset-management-october-2019.pdf.
[6] We describe our framework for managing the risks of using AI below in Section II of this letter.

We do not use AI to make autonomous, independent decisions, but rather to enhance our existing human capabilities and processes. AI enables us, among other things, to extract insights from significant volumes of data on investment factors such as economic conditions or market sentiment. This ability to perform large-scale data analysis augments a variety of activities across the asset management lifecycle, including data and content synthesis, pattern detection and monitoring, forecasting and prediction, and process automation. In a time when asset management has become more data-driven than ever and investor participation in capital markets becomes more prolific, the ability to leverage data efficiently is critical to meeting investors' needs. Thus, we believe that the use cases for AI will only continue to increase. We describe below our own use of AI across these specific functions.

A. Use of AI In Investment and Portfolio Management

At BlackRock, traditional machine learning AI tools and techniques have featured significantly in investment and portfolio management processes for many years.[7] Such tools and techniques—which, for example, are used in statistical analysis—enable investment teams to analyze data from a range of sources[8] for patterns and other insights that can help to inform their investment decisions. Machine learning also forms the basis for some of the models that portfolio managers use to allocate assets and assess the risk-return tradeoffs of both active and index trading strategies. For active managers, these tools and techniques help efforts to identify asymmetries that can lead to alpha–seeking opportunities for returns, while index fund managers can use these tools and techniques to predict index rebalance events and maintain close tracking of a fund's benchmark index.[9]

We have also recently begun to incorporate generative AI tools into our investment and portfolio management processes.[10] Our teams use these tools to create first drafts of emails or reports or gather data efficiently to create research reports and documents. Generative AI models can also enable new and more sophisticated data analysis and pattern recognition on even more complex and larger data sets than what is possible with

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[7] *See* Syril Smith & Andrae Allen, *Entering the Co-Pilot Era* in The Way Forward: Modern Investment Management Tech & the Direction of Travel for Platform-as-a-Service (Mar. 2024) at 6, *available at* https://blackrock.turtl.co/story/aladdin-tech-forces/page/1; *see generally* BlackRock AI ViewPoint.
[8] These sources include data from exchanges, rating agencies, pricing and data services, analyst reports, and index providers, among others.
[9] Ananth Madhavan, Jason Ribando & Nogie Udevbulu, *Demystifying Index Rebalancing: An Analysis of the Costs of Liquidity Provision*, J. of Portfolio Management (2022) 48 (6) at 171-84.
[10] *See, e.g.*, BlackRock, How AI is transforming investing, https://www.blackrock.com/us/individual/insights/ai-investing.

traditional machine learning AI tools and techniques.[11] For example, generative AI can be employed to help to detect, contextualize, and summarize subtle cues and sentiments expressed during company earnings calls, which are then used to drive insights on individual issuers or broader economic conditions. Generative AI is also helping our investment teams augment and scale their evaluation of index changes and activities, including programmatically interpreting and analyzing an index provider's treatment of hundreds of corporate actions.[12]

We believe that these generative AI tools have multiple benefits, offering new possibilities for achieving even more efficiencies in the investment process by reducing errors and allowing our teams to devote more time and resources to the highest-value tasks, as well as helping to drive deeper investment insights. Fundamentally, they can yield more comprehensive and actionable insights and facilitate more informed and efficient investment decision making, ultimately benefiting clients and investors.

B. Use of AI In Trading

As a global asset manager that executes hundreds of investment strategies, BlackRock uses AI through different stages of the trading lifecycle. For example, our traders apply machine learning to diverse datasets to identify nuanced trading patterns in a scaled manner (*e.g.*, explaining similarities between orders and past trades), evaluate different market scenarios in a dynamic manner, and assess liquidity provisioning and market impact of trading strategies. Our traders also use machine learning to help inform their decision making around broker selection, execution style, or type of algorithm that would produce the optimal strategy for executing a portfolio manager's order. These uses of AI support our efforts to attain best execution on behalf of our clients by enabling more efficient and effective trading, which means doing so at scale across a diverse range of asset classes and regions with minimal market impact and transaction costs. These AI tools also help to enable greater automation of basic trading tasks and augmented decision making.

As new AI technologies emerge, we continue to evaluate opportunities to apply them to further augment and introduce more efficiencies into trading workflows. This includes assessing machine learning techniques, which we believe will continue to underpin many AI applications in trading. This will also include looking at generative AI techniques, which we will evaluate based on their potential incremental utility and fit within our risk

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[11] These datasets include, for example, broker analyst reports, regulatory filings, and online news articles.
[12] Index providers may change a security or security weighting in an index based on corporate actions (*e.g.*, stock splits). Investment teams review these changes—usually in a manual fashion—to inform how to effectively manage fund portfolios that seek to track the index as closely as possible.

management framework. We note that industry use cases for generative AI are emerging, such as analysis and synthesis of unstructured and novel datasets for dynamic market surveillance and enhancements to market risk management. We view our interest in identifying new opportunities for AI use as a progression of BlackRock's longstanding efforts to find new ways to increase efficiency, transparency, and access for all market participants and investors trading in markets.

C. Use of AI in Cybersecurity Risk Management

In addition to our investment and trading use cases, BlackRock utilizes AI to help manage cybersecurity risk. We believe that AI tools are improving upon the legacy, signature-based threat detection approach of many financial institutions. Enhancing cybersecurity risk management capabilities through AI has become critical in the face of more sophisticated, dynamic cyberthreats that are often difficult to detect.[13]

AI has improved our cybersecurity risk management programs and capabilities—among the benefits, it enables us in many cases to comb through large amounts of information to resolve events more quickly before they escalate into more significant issues. Specifically, we apply machine learning algorithms to analyze network traffic and identify patterns or aberrations in normal activity that may indicate malicious intrusions without a specific or known signature. We also use AI tools to help us respond to detected threats, such as isolating infected systems, blocking malicious IP addresses, or applying IT patches. Further, we deploy AI tools that assist our systems to detect fraud and other types of illicit activity.

II. BlackRock's Risk Management of AI

As a fiduciary to its clients, BlackRock exercises a robust approach to risk management of its AI use, including an extensive governance and control framework. For any AI tool or application, our overarching objective is to minimize the risk that use of that tool or application would compromise us, our clients, and the broader financial system in which we operate. BlackRock utilizes a risk management framework rooted in our existing quality controls, client and data privacy guidelines, and compliance with the many regulatory regimes under which it operates. Governance and controls are in place to

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[13] We note Treasury's awareness that firms have been using AI tools for fraud detection and as part of risk management strategies and cybersecurity for many years. Some examples of these tools include incorporating advanced anomaly-detection and behavior-analysis AI methods into existing endpoint protection, intrusion detection/prevention, data-loss prevention, and firewall tools. *See* U.S. Department of the Treasury, Managing Artificial Intelligence-Specific Cybersecurity Risks in the Financial Services Sector (Mar. 2024) ("Treasury AI Cybersecurity Report"), *available at* https://home.treasury.gov/system/files/136/Managing-Artificial-Intelligence-Specific-Cybersecurity-Risks-In-The-Financial-Services-Sector.pdf.

enable AI risk assessments across a host of fundamental risk areas, including information security, cybersecurity, regulatory compliance, model risk management, and intellectual property.

Key to this framework is BlackRock's "human first" approach, which is a core principle of our overall enterprise risk management program. This approach puts our employees at the frontline of identifying and assessing the risks that arise from discrete uses of AI. Primary responsibility for AI risk management lies within individual teams over their own activities and/or workflows in which AI tools are being used. Among the checks that they perform, teams review the AI-generated information or output against their own human senses and expectations. The firm also imposes an additional layer of oversight via independent audit functions that validate that key controls and policies are in place and verify whether the risk management activities are effective or not.

With respect to the types of AI risks identified in the RFI—explainability and bias, data protection and third-party risks—BlackRock's risk management framework addresses those concerns through various means described below.

A. Explainability and Bias[14]

Treasury states that financial institutions may find difficulty with the "explainability" of an AI model or tool due to a lack of full understanding about (1) the origin and content of the data used; and (2) how algorithms or structures are developed for an AI model or tool. This lack of explainability, according to Treasury, may contribute to a lack of transparency and bias, as well as difficulty in assessing the AI tool or model's "conceptual soundness."[15]

BlackRock maintains strong control and governance frameworks to ensure that it properly understands the efficacy of its AI models and tools. In many cases, we develop our own internal AI tools and models for use, which is more conducive to carrying out relevant testing and evaluation processes. We also utilize tools that test the rigor of our AI models (*e.g.*, model back testing and continuous output monitoring), and we are also working on ways to increase their transparency (*e.g.*, audit trails of a model's decision making). These tools are intended to help mitigate or otherwise identify incorrect or misleading results from the AI models, or even potential misuse of the model itself.

As we explore further opportunities to use generative AI, we are taking additional steps to enhance those control frameworks. For example, we have an internal cross-disciplinary

[14] Section II.A of this letter is intended to respond to Questions 6, 7 and 8 of the RFI.
[15] Treasury RFI at 50051. The RFI defines "explainability" as the ability to understand a model's output and decisions, or how the model establishes relationships based on the model's input. *Id.*

review body responsible for evaluating new AI tools for onboarding. This body will also be responsible for providing guidance on the use of those tools, including imposing restrictions as necessary to address identified risks.

B. Data Protection[16]

Treasury highlights concerns related to the data use in AI applications, including risks to data privacy and the potential data integrity problems. Treasury specifically notes that AI can create or exacerbate data accuracy issues, such that the use of inaccurate data or furnishing of inaccurate information can lead to a violation of law.[17]

BlackRock's control and governance frameworks apply vigorous protections to the data that it collects, stores, and applies to its AI models and tools. The success of our AI models and tools depends upon the quality and integrity of the data that it is trained on, and the trust that clients give us to protect that data from loss and misuse. Thus, we apply a precise approach to mitigate these concerns. Specifically, with respect to generative AI activity, BlackRock is taking steps to establish and maintain a secure environment that allows us to use data in a manner that minimizes information leakage and risks of misinformation.

C. Third-Party Risks[18]

Treasury raises concerns about reliance on third-party providers for AI solutions. It believes that this reliance, and the increasing complexity of the AI provided, may exacerbate third-party and related risks.[19] In addition, reliance on third parties has the potential of creating another point of entry for cyber risk, operational risk, and other disruptions for firms.[20]

BlackRock has its own framework for evaluating third-party AI tools and the vendors that furnish them. Where appropriate from a business standpoint, we supplement our own proprietary AI models and tools by adopting third-party solutions. We have an internal team that conducts due diligence on new vendors. Among other things, we evaluate whether a potential vendor maintains its own appropriate controls for its AI offerings, and whether the third-party vendor itself utilizes AI tools in furnishing its services to us. In addition to determining whether the vendor presents any potential risks prior to onboarding, we continue to monitor the vendor throughout the course of the contractual

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[16] Section II.B of this letter is intended to respond to Questions 11 and 12 of the RFI.
[17] *Id.* at 50052.
[18] Section II.C of this letter is intended to respond to Questions 15, 16 and 17 of the RFI.
[19] *Id.* at 50051.
[20] Treasury AI Cybersecurity Report at 19.

relationship. Ongoing monitoring involves, but is not limited to, identifying changes to the risk profile of the AI tools or services provided and/or assessing the vendor's performance.

III. A Common Approach to Governing AI[21]

BlackRock supports the ongoing engagement from Treasury and other policymakers with industry participants on AI and believes that there is an opportunity to explore common approaches towards governance. Our control and governance frameworks are built closely upon relevant existing laws and regulations, and we continuously assess those frameworks to ensure that they continue to properly address our evolving use of AI models and tools.

The potential risks associated with using AI, however, continue to evolve at an industry level, and thus we encourage future efforts to facilitate the exchange of information and ideas about emerging developments and concerns. To facilitate this exchange and related discussions, policymakers should consider the development of a common lexicon of relevant AI terms and concepts. Additional steps at the outset should also include collaborating on a gap analysis to identify new AI technologies and whether their use poses new and unique risks. We believe that these efforts could ultimately help to identify common techniques or standards that could be used to govern usage and control the associated risks. These efforts could also inform any considerations from policymakers about making future changes to relevant regulatory frameworks.

IV. Conclusion

BlackRock appreciates the opportunity to offer its perspectives on how it uses AI in the pursuit of better investment outcomes for its clients and investors. While many use cases for AI have emerged in asset management, AI models and tools continue to evolve, and along with it the benefits and risks of its use. Accordingly, we welcome the opportunity for a dialogue between policymakers and industry participants to facilitate sharing of relevant information and insights, as well as consideration of an optimal governing framework moving forward.

If we can provide any further information, please contact the undersigned.

[21] Section III of this letter is intended to respond to Question 18 of the RFI.

Sincerely,

Ben Tecmire
Director, Head of U.S. Regulatory Affairs

Dr. Rachel Schutt
Managing Director, Co-Head of AI Labs