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COMMISSION (CFTC)

BEFORE THE U.S. SENATE COMMITTEE ON BANKING, HOUSING, AND URBAN
AFFAIRS

"Artificial Intelligence in Financial Services"

Wednesday, September 20, 2023
10:00am EST

Thank you, Committee Chairman Brown, Ranking Member Scott, and members of the Committee for the opportunity to testify before you today. I am the founder and CEO of Gattaca Horizons LLC, an advisory firm, an adjunct professor at the Georgetown University Law Center, and the former chief innovation officer and director of LabCFTC at the U.S. Commodity Futures Trading Commission (CFTC). The testimony presented here today reflects my personal views.[1]

The topic of today's discussion is "Artificial Intelligence in Financial Services." This is an important topic and one that has gained renewed and prominent interest given recent technological developments and advances in the field. It is an area of global innovation and fierce competition where the U.S. holds many competitive and first-mover advantages,[2] and an area that should be responsibly fostered through thoughtful policy approaches. While U.S. markets and financial services have long led the world, there are ample opportunities to further expand access, lower costs, increase efficiencies, and improve customer choice, satisfaction and opportunity. I accordingly commend the Committee for engaging on this topic, and support deliberative and grounded efforts to understand the longstanding role of AI in financial services, recent developments, existing legal and regulatory frameworks in this space, and potential policy approaches that can foster the tremendous opportunity presented, while mitigating risks.

My testimony will track these key categories. I will begin by discussing the evolution of AI in financial services, including a discussion of opportunities and risks, and touch on recent advances. I will then provide an overview of existing legal and regulatory frameworks that have long governed the development and adoption of emerging technologies, including AI, in the financial services sector. And I will conclude by offering policy recommendations that can help to inform this Committee's important work.

The Evolution of AI in Financial Services: Opportunities and Risks

To level set, AI in financial services is not new,[3] and instead should be thought of as part of a steady progression of using computers and advanced analytics systems to increase automation in the sector.[4] Adoption of AI in financial services became clearly identifiable in the 1980s with early

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[1] My biography is attached as Appendix A.

[2] Sam Schechner, Douglas MacMillan and Liza Lin, *U.S. and Chinese Companies Race to Dominate AI* (Jan. 18, 2018), available at https://www.wsj.com/articles/why-u-s-companies-may-lose-the-ai-race-1516280677.

[3] There is no single, agreed definition of Artificial Intelligence (AI). The OCC recently defined AI as "the application of computational tools to address tasks traditionally requiring human analysis." It further noted that "[m]achine learning, a subcategory of artificial intelligence, is a method of designing a sequence of actions to solve a problem that optimizes automatically through experience and with limited or no human intervention." *See* OCC, *Model Risk Management Version 1.0* (Aug. 2021), available at https://www.occ.gov/publications-and-resources/publications/comptrollers-handbook/files/model-risk-management/index-model-risk-management.html (citing "Artificial Intelligence and Machine Learning in Financial Services: Market Developments and Financial Stability Implications," Financial Stability Board (November 2017)).

[4] Remarks of Daniel Gorfine, Director of LabCFTC at ISDA, *LabCFTC: Developments and Discoveries* (June 11, 2019), available at https://www.cftc.gov/PressRoom/SpeechesTestimony/opagorfine3.

applications focusing on investment data analytics,[5] fraud detection in the 1990s,[6] and a number of use cases in the 2000s, including around consumer underwriting, risk management, compliance, and cybersecurity.[7] Over the decades, AI-related technologies have continued to develop, as have potential financial services applications—most recently, we have witnessed the public, open source roll-out of AI models referred to as large language models (LLMs), which are capable of ingesting and learning from large natural language data sets, and a subset of LLMs known as generative AI models (or "Gen AI"), which are capable of creating new content by publishing probabilistic answers to queries based on prior and ongoing learnings.[8]

AI applications in financial services have already yielded tremendous benefits to consumers, small businesses, market participants and service providers, and regulators tasked with supervising financial institutions, protecting consumers, and ensuring market integrity. By processing large data sets, AI tools can offer predictive insights and analytics that allow for more accurate, efficient, and low-cost decision-making, including in the context of determining creditworthiness when a traditional credit score may preclude access.[9] Importantly, humans are often "in the loop," with AI helping to inform, augment and improve their work or decision-making.

AI is further capable of identifying patterns and anomalies that traditional approaches would be incapable of detecting, including in the context of identifying potential financial crime or detecting illegal trading behaviors. Responsibly developing and adopting these tools can help ensure that the U.S. maintains the deepest and best-regulated markets in the world, as well as remains at the forefront of financial services innovation capable of serving our national economic needs and those of American consumers and businesses.

Today, all stakeholders in the financial services space, including banks, fintechs, financial markets firms, and regulators, use different forms of AI in their activities and operations. AI tools are being used to support risk management, compliance and transaction monitoring, trade surveillance, cybersecurity and intrusion detection, trading activity, market intelligence, digital investment advisory, financial crime/AML detection, customer service, and consumer finance underwriting.

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[5] *See* Pippa Stevens, *The secret behind the greatest modern day moneymaker on Wall Street: Remove all emotion* (Nov. 5, 2019), available at https://www.cnbc.com/2019/11/05/how-jim-simons-founder-of-renaissance-technologies-beats-the-market.html.
[6] Charles A. Christy, *Impact of Artificial Intelligence on Banking* (Jan. 17, 1990), available at https://www.latimes.com/archives/la-xpm-1990-01-17-fi-233-story.html.
[7] Oliver Wyman, *Artificial Intelligence Applications in Financial Services: Asset Management, Banking and Insurance* (2019), available at https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2019/dec/ai-app-in-fs.pdf.
[8] David Nield, *How ChatGPT and Other LLMs Work—and Where They Could Go Next* (Apr. 30, 2023), available at https://www.wired.com/story/how-chatgpt-works-large-language-model/.
[9] *See* Oliver Wyman, *Artificial Intelligence Applications in Financial Services: Asset Management, Banking and Insurance* (2019), available at https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2019/dec/ai-app-in-fs.pdf.

On the latter point, consumer underwriting is one of the most prominently discussed areas for AI application given its potential to increase finance inclusion and its risk of perpetuating bias—though, as noted further below, it is an area that has important consumer protections in place that must be followed regardless of the technology being deployed. It is well known that many legacy scoring systems contain embedded bias and are known to correlate with protected class characteristics.[10] AI-based underwriting holds substantial promise in—and already is—unlocking more fair and accurate scoring that can expand access to financial services for historically underserved populations. Depending on model design, these models can be more fair and transparent than legacy scoring by quantifying the relative significance of data inputs and assisting the search for less discriminatory models.[11]

To this end, as a key guiding principle, I would encourage the Committee and regulators to assess new AI-based models on their ability to improve off of a highly imperfect—and entrenched—status quo.[12] This principle should apply across AI applications and use cases since a singular focus on risk can blind us to the greater benefits that may be present as compared to legacy approaches.

AI is also benefiting consumers, investors, and market participants with respect to investment activity and financial advice. While the use of algorithms by institutional investors is not new, many new entrants and fintech firms are leveraging AI technologies to make financial advice more accessible, transparent, and lower cost. For example, digital investment advisors can efficiently allocate an investor's portfolio across low-cost, passive ETFs,[13] and financial advisory services can help consumers identify how to optimize paying down debts in order to minimize interest expenses. All of these services rely on analyzing broad sets of financial data in order to improve investor and consumer choice and outcomes.

Another promising area of AI development in financial services involves a broad range of compliance, reporting, security and fraud detection, and trade and transaction monitoring functions (collectively referred to as "RegTech"). As noted above, a key strength of AI is its ability to ingest large volumes of data and identify patterns, anomalies, and insights that traditional approaches would be incapable of processing or detecting. AI can accordingly improve the efficiency, effectiveness, and capabilities of financial institutions and their regulators to the benefit of

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[10] Aaron Klein, *Reducing bias in AI-based financial services* (July 10, 2020), available at https://www.brookings.edu/articles/reducing-bias-in-ai-based-financial-services/.

[11] *See generally* FinRegLab, *Explainability & Fairness in Machine Learning for Credit Underwriting: Policy & Empirical Findings* (2023), available at https://finreglab.org/wp-content/uploads/2023/07/FinRegLab-Machine-Learning-Research-Policy_Empirical-Overview-FACT-SHEET_July-2023_FINAL-1.pdf.

[12] Of course, as discussed further below, not all models are well-designed and the quality and fairness of an output will be heavily dependent on the quality of the data input.

[13] Beketov, Mikhail; Lehmann, Kevin; Wittke, Manuel 2018, *Robo Advisors: quantitative methods inside the robots*, Journal of Asset Management Palgrave Macmillan, vol. 19(6), pages 363-370 (October 2018), available at https://link.springer.com/article/10.1057/s41260-018-0092-9.

consumers, law enforcement, and market integrity. Examples of these applications in financial services include improved AML detection, enhancing trade surveillance capable of identifying fraudulent and manipulative practices, and various forms of risk analysis, including with respect to market behavior and even economic indicators. Regulators are also leveraging these technologies—which should be supported by Congress—to better supervise markets and registered entities, as well as to keep pace with combatting new technology-enabled threats.[14]

As with any area of technological innovation, there are important risks that AI technology poses. For example, AI risks include the potential for embedding and perpetuating bias, processing and training on poor quality data, failing to operate as expected, helping bad actors engage in fraudulent and illegal conduct, and driving herd behaviors.

More specifically, certain "black box" and other poorly designed models run the risk of inadvertently embedding or even reinforcing bias by failing to test or understand outcomes, search for less discriminatory alternatives, and/or properly consider the input data driving the model results. As we have seen, models can also misfire or fail to perform as expected, resulting in a potential market "flash crash," and divergence from our broader values. And, models that are not subject to proper governance, ongoing testing, and controls can drift from their prior performance and begin yielding faulty or flawed results based on changes in the data or underlying model conditions. I will discuss how these risks can and are being mitigated in the section below.

Additionally, as Members of this Committee recently flagged, bad actors are increasingly able to use technology to engage in more sophisticated forms of fraud and illegal conduct, including through voice cloning.[15] These developments warrant focused law enforcement attention, continued development of new tools to combat these new threat vectors, and open collaboration between government, regulators, and industry to share information and best practices. As has consistently been the case, the best way to fight constantly evolving forms of crime is to ensure that law enforcement, regulators, and firms have the resources and information to confront bad actors.

Finally, before shifting to the existing regulatory landscape and related policy implications, it is important to comment on the development of generative AI models, which have captivated the world and spawned profound discussion regarding the future impact on society, security, and humankind. There is no question that Gen AI will likely impact many aspects of life, including with respect to economic activity and financial services. It is accordingly imperative that Congress and all societal stakeholders continue exploring and monitoring Gen AI and related developments, including with respect to identifying novel risks.

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[14] FINRA, *Deep Learning: The Future of the Market Manipulation Surveillance Program* (Jan. 25, 2022), available at https://www.finra.org/media-center/finra-unscripted/deep-learning-market-surveillance.
[15] *Letter from Chairman Brown and Senators Menendez, Smith and Reed to Director Rohit Chopra* (July 6, 2023), available at https://www.banking.senate.gov/imo/media/doc/voice_cloning_financial_scams.pdf.

That said, as detailed below, like certain other sectors of the economy, the financial services industry is heavily regulated and has laws and rules in place to ensure prudent and responsible adoption of technologies—these legal frameworks have helped responsibly foster the adoption of AI-related technologies, and many others, for decades. Given these laws, rules, and regulatory supervision, it is unlikely that firms will rapidly or hastily adopt Gen AI models in high risk functions and applications without strict controls, governance, testing, monitoring, and required compliance measures in place.[16] As Gen AI develops and begins being applied in new ways, it will be imperative for policymakers and regulators to keep pace, identify specific risks, and tailor any new rules or guidance to solve directly for those risks.

The mere speculative potential or fear of future harm, however, should not broadly block or disincentivize development and adoption of AI and emerging technologies in financial services, including by those small firms and community banks seeking to remain competitive in an increasingly digital economy. Global competitors are actively investing in AI technologies given its potential to transform most sectors and operations of our economies. This is an area that the U.S. must invest and lead, not just for the overall economic competitiveness of the country, but for all Americans who demand and deserve access to the most sophisticated financial markets and services in the world.

Existing Financial Services Laws and Regulations Governing the Use of AI

As noted above, financial services law and regulations have long governed the adoption of emerging technologies in the sector, whether through rules to ensure consumer protection or principles-based guidance to ensure safety and soundness. These laws and regulations largely apply to conduct and activities regardless of the technological tools used by the regulated entity— in this way they are appropriately technology-neutral. It is accordingly appropriate to focus attention on how to apply these existing laws and regulations in a manner that clarifies regulatory

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[16] Recently a number of large firms have stated that they are exploring, testing, and gradually rolling out more advanced AI tools, but adoption has been cautious. *See, e.g.* Catherine Leffert, *JPMorgan Chase aims to create $1.5 billion in value with AI by year end* (May 30, 2023), available at https://www.americanbanker.com/news/jpmorgan-chase-aims-to-create-1-5-billion-in-value-with-ai-by-yearend; Madeline Garfinkel, *JP Morgan Chase Is Launching a ChatGPT-Like Service to Help People With Their Investments* (May 26, 2023), available at https://www.entrepreneur.com/business-news/jp-morgan-is-developing-ai-to-select-your-investments/452994#:~:text=During%20the%20company's%20annual%20investor,use%20cases%22%20for%20AI%20technology.&text=%22We%20are%20actively%20evaluating%20opportunities,that%20space%2C%22%20she%20added; Bloomberg Financial Services, *Introducing BloombergGPT, Bloomberg's 50-billion parameter large language model, purpose-built from scratch for finance* (Mar. 30, 2023), available at https://www.bloomberg.com/company/press/bloomberggpt-50-billion-parameter-llm-tuned-finance/; *see also Acting Comptroller of the Currency Michael J. Hsu Remarks to the American Bankers Association (ABA) Risk and Compliance Conference "Tokenization and AI in Banking: How Risk and Compliance Can Facilitate Responsible Innovation"* (June 16, 2023), available at https://www.occ.gov/news-issuances/speeches/2023/pub-speech-2023-64.pdf ("To date, banks have generally approached machine learning and AI adoption cautiously.").

expectations, protects consumers and markets, and allows firms to continue developing and adopting AI tools that improve their performance, safety, efficiency, and customer outcomes.

More specifically, when it comes to consumer protection, important safeguards apply when firms use AI tools. In the consumer finance space, lenders are subject to the Equal Credit Opportunity Act (ECOA), the Truth in Lending Act (TILA), the Fair Housing Act (FHAct), the Fair Credit Reporting Act (FCRA), and prohibitions against unfair and deceptive acts and practices, amongst others. ECOA and the FHAct specifically bar discrimination in lending for consumer credit, including in the context of residential transactions, and FCRA ensures key protections regarding credit bureau data use and access.

In the context of AI-based underwriting models, lenders must comply with fair lending regulations and search for less discriminatory alternatives (LDA) if a model results in a disparate impact on certain populations. To this end, AI can help raise the bar when it comes to understanding how certain variables may correlate with protected class characteristics, how that reliance can be reduced, and how less discriminatory alternative models can be deployed. Of course, not all models are well-built and governed. The CFPB has authority, however, to examine fair lending compliance, including when lenders adopt new models or partner with third-party non-bank technology providers.[17]

In other financial services contexts, consumer protection regulations require financial firms to provide consumers with viable avenues for lodging complaints, seeking recourse, and receiving broader customer support. The CFPB recently emphasized that consumer protections already apply to AI technologies by issuing a related issue spotlight on the topic of "Chatbots in consumer finance," where it noted that "[d]epending on the facts and circumstances, entities may be subject to liability under federal consumer financial laws when chatbots fail to meet relevant requirements."[18] An example may be if a chatbot precludes a customer from being able to report and seek recourse on a fraudulent or incorrect payment transaction.[19]

Beyond the consumer finance space, important safeguards also apply to applications of AI technologies in the capital markets. For example, following the 2010 flash crash, stronger protections were put in place by Congress to enforce against fraud and manipulation in trading

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[17] *See generally,* CFPB, *CFPB Shutters Lending by VC-Backed Fintech for Violating Agency Order* (Dec. 21, 2021), available at https://www.consumerfinance.gov/about-us/newsroom/cfpb-shutters-lending-by-vc-backed-fintech-for-violating-agency-order/#:~:text=The%20lawsuit%20also%20accuses%20LendUp,and%20illegally%20cheating%20its%20customers.%E2%80%9D.

[18] CFPB, *Chatbots in consumer finance* (June 6, 2023), available at https://www.consumerfinance.gov/data-research/research-reports/chatbots-in-consumer-finance/chatbots-in-consumer-finance/.

[19] *See, e.g.,* 12 CFR Part 1005 (Regulation E).

activity, including with respect to algorithms that may engage in wash trading or spoofing.[20] Regulators and market participants have also adopted increasingly powerful trade surveillance technologies, often underpinned by AI technologies, to detect potential wrongdoing.[21] Additionally, financial market regulators have updated and imposed new circuit breaker programs, systems compliance and integrity, and electronic trading risk rules to mitigate flash crash risks, trading volatility, and market disruptions.[22]

In the investment advisory space, the SEC has existing conflicts of interest requirements in place that ensure that investment advice and recommendations made by broker-dealers or investment advisors are in the "best interest" of the investor.[23] Additionally, the SEC and FINRA have marketing rules that govern forms of investor advertising and engagement. These requirements apply equally to digital investment advisors, including those leveraging AI technologies, and as discussed further below have proven fully capable of providing the SEC with the tools it needs to ensure compliance and enforce against violations.[24]

The above consumer and investor protection laws and regulations are by no means exhaustive, but are intended to give a broad overview of the existing frameworks that apply in financial services to adoption of AI and other emerging technologies. Additionally, beyond these consumer and investor protection laws, financial regulators have developed robust guidance and related tools to ensure the prudent, safe, and sound adoption of new technology-based models and systems.

More specifically, financial institutions must develop and adhere to "Model Risk Management" (MRM) practices that would fully apply to adoption of any AI-based models. In 2011, the federal banking regulators released "SR 11-7: Guidance on Model Risk Management" (the "MRM Guidance"), which governs adoption of models and ways to mitigate associated risks. The MRM Guidance covers model design, documentation, governance, data use, performance, conceptual soundness, and ongoing monitoring, testing, and reporting considerations and expectations. The MRM Guidance is a primary framework governing adoption of models by financial institutions, including those developed by third parties.

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[20] King & Spalding, *Spoofing: US Law and Enforcement* (2019), available at https://www.kslaw.com/attachments/000/007/109/original/Spoofing_US_Law_and_Enforcement.pdf?1564767398 ("In 2010, the Dodd-Frank Act amended the CEA to include spoofing as a disruptive practice. The anti-spoofing provision, CEA Section 4c(a)(5)(C), makes it unlawful for any person to engage in spoofing . . .")

[21] FINRA, *Deep Learning: The Future of the Market Manipulation Surveillance Program* (Jan. 25, 2022), available at https://www.finra.org/media-center/finra-unscripted/deep-learning-market-surveillance.

[22] SEC, *Investor Alerts and Bulletins Investor Bulletin: New Stock-by-Stock Circuit Breakers* (Aug. 1, 2011), available at https://www.sec.gov/oiea/investor-alerts-bulletins/investor-alerts-circuitbreakers; CFTC, *Electronic Trading Risk Principles Final Rule*, 86 Fed. Reg. 2048 (2021); *see also* SEC, *Staff Report on Algorithmic Trading in U.S. Capital Markets* (2020), available at https://www.sec.gov/files/algo_trading_report_2020.pdf.

[23] SEC, *Staff Bulletin: Standards of Conduct for Broker-Dealers and Investment Advisers Conflicts of Interest*, available at https://www.sec.gov/tm/iabd-staff-bulletin-conflicts-interest.

[24] *See, e.g.,* SEC, *Schwab Subsidiaries Misled Robo-Adviser Clients about Absence of Hidden Fees* (June 13, 2021), available at https://www.sec.gov/news/press-release/2022-104.

In 2021, the OCC adopted updated MRM Guidance and specifically discussed its coverage of AI models; the SEC, FINRA, and the CFTC similarly require model risk management practices to be implemented by regulated entities.[25] Beyond imposition of general MRM frameworks, financial regulators will frequently issue regulations that govern related cybersecurity and system safeguards and integrity requirements, as well as guidance on issue-specific areas, including in the context of AI development and adoption.

Importantly, in the context of criminal conduct and scams that may also impact consumers, criminal laws are well-established that allow law enforcement and regulators to pursue bad actors. Additionally, law enforcement and intelligence agencies are actively investigating the use of new technologies to engage in criminal conduct and offering constructive guidance to the industry. Just this month, the NSA, FBI, and CISA published a report titled "Contextualizing Deepfake Threats to Organizations," in which these agencies recommended to organizations that they pursue a multi-prong strategy of adopting new technologies to defend against bad actors, engage in information sharing, train personnel, and conduct scenario and contingency planning exercises.[26]

Policy Recommendations for Ongoing AI Advances, Development, and Adoption

The above discussion makes clear that advances in use of AI in financial services are developing within robust financial services legal and regulatory frameworks generally designed to mitigate risks associated with the use of emerging technologies, while enabling innovation that will benefit consumers, investors, economic dynamism, and U.S. competitiveness. That said, this discussion also makes clear that as with any area of technological advancement, we will need to evolve how we apply governing frameworks and be vigilant in identifying novel risks that will require tailored and specific interventions. The following are principles and recommendations that can help to strike the appropriate balance.

- **Encourage Innovation, but Monitor for Novel Risks**. Given the benefits that AI will provide in improving the delivery, accessibility, cost, and compliance of financial services, as well as ensuring continued U.S. leadership in this critical sector, it is important that policymakers use their soft power to encourage ongoing measured and compliant innovation. With the existing financial services regulatory framework and related compliance requirements, it is unlikely that more complex models, including Gen AI, will be rapidly adopted in high-risk functions absent robust testing, controls, and governance. When discussing AI and developing overarching governing principles, policymakers and

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[25] FINRA, *AI in the Securities Industry: Key Challenges and Regulatory Considerations*, available at https://www.finra.org/rules-guidance/key-topics/fintech/report/artificial-intelligence-in-the-securities-industry/key-challenges.
[26] NSA, FBI, and CISA, *Contextualizing Deepfake Threats to Organizations* (2023), available at https://media.defense.gov/2023/Sep/12/2003298925/-1/-1/0/CSI-DEEPFAKE-THREATS.PDF.

regulators should accordingly balance the need for safeguards with the importance of creating an environment where financial institutions are confident exploring, developing, and adopting AI tools that can improve their performance and customer outcomes. This is especially important with respect to small firms and community banks, which can readily be dissuaded from engaging with technologies that can make them more competitive if the regulatory landscape is perceived as disfavoring such technologies.

One way financial regulators could strike this balance would be through publishing takeaways from a multi-agency request for comment on the use of AI in financial services that was issued in early 2021.[27] The likely conclusions from the effort should help to underscore how existing regulatory frameworks are capable of adapting to emerging AI technologies, and their adoption in the financial services sector, as detailed below.

● **Enhance Clarity within Existing MRM, Third-Party Risk Management, and Activity-Specific Guidance and Advance Standards & Best Practices**. As discussed above, the financial services industry is subject to longstanding risk mitigation frameworks that have applied to adoption of emerging technologies for decades. These frameworks are appropriate for advances in AI in financial services, but will require updates, clarifications, and further guidance that address emerging risks and provide the industry with the clarity required to confidently build and adopt such technologies.

For example, it is useful and appropriate for regulators to alert and reinforce that the use of AI in customer service applications must provide customers with proper recourse and paths to resolution; to this end, there is a tremendous opportunity to improve on legacy customer service models, which historically have included long waits for accessing live representatives, painful dropped calls or endless routing loops, and failure to achieve proper resolution. As financial providers develop, test, and gradually implement new AI-powered models with greater functionality that can improve on the status quo, it would be appropriate for regulators to emphasize the importance of risk mitigants, such as keeping a "human in the loop," to ensure proper audits and performance of such models.

Other key areas for clarifying or enhancing guidance and regulatory expectations in the context of AI models include consumer underwriting, the MRM Guidance, and third-party risk management.

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[27] Board of Governors of the Federal Reserve System, Bureau of Consumer Financial Protection, Federal Deposit Insurance Corporation, National Credit Union Administration, and Office of the Comptroller of the Currency, *Request for Information and Comment on Financial Institutions' Use of Artificial Intelligence, Including Machine Learning* (Mar. 31, 2021), available at https://www.federalregister.gov/documents/2021/03/31/2021-06607/request-for-information-and-comment-on-financial-institutions-use-of-artificial-intelligence.

With respect to fair lending compliance, AI technologies can help lift industry practice when it comes to testing for disparate impact, identifying less discriminatory alternatives to legacy models, and improving the accuracy of adverse action notices. This is an area, however, that would also benefit from increased clarity regarding regulatory expectations and compliance. Such clarity could be advanced by providing the industry with examples of compliant approaches, guidance regarding when and how model testing should occur, safe harbors for pursuing less discriminatory models, and guidance regarding accepted explainability techniques for the particular application or use case.

Additionally, while the banking MRM Guidance and 2021 OCC updates noted above provide the appropriate framework for assessing and mitigating risk with AI models, regulators should look for opportunities to clarify how the Guidance should be applied in the context of AI. More specifically, aspects of the Guidance will become more relevant in the context of AI models as compared to legacy models, especially when it comes to the importance of ongoing testing and monitoring of complex AI models, as well as appropriate maintenance of a "human in the loop" when initially deploying models in certain use cases. It is also likely that model risk management best practices will need to evolve in the capital markets context as new forms of AI automated trading develop.

Finally, it will be important for all financial regulators to continue updating or issuing guidance on issues and topics where there may be ambiguity or unique risks, ideally on a cross-agency basis in order to promote consistency and clarity. The bank regulators recently issued "Interagency Guidance on Third-Party Relationships: Risk Management," which is intended to cover the "full range of third-party relationships."[28] The final guidance notes that the banking regulators will consider and issue further guidance and educational resources, as necessary, in order to share views or identify novel areas of risk. These forms of ongoing communication with the industry are critical, as sharing regulatory expectations with firms and market participants can give them the confidence to safely adopt new technologies—it can also reduce costs, confusion, and risk-aversion by smaller firms and banks that lack the resources to delve deeply into new technologies and independently discern compliance requirements.

On this latter point, policymakers and regulators should encourage and help foster the development of standards that can enhance safety, security, and adoption of AI technologies. The National Institute of Standards and Technology released earlier this year its "Artificial Intelligence Risk Management Framework 1.0," which provides for approaches to mitigating risks associated with use of AI.[29] Additionally, private sector

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[28] Fed, FDIC, and OCC, *Interagency Guidance on Third-Party Relationships: Risk Management* (2023), available at https://www.govinfo.gov/content/pkg/FR-2023-06-09/pdf/2023-12340.pdf.

[29] Penny Crossman, *How banks should deal with AI's risks, according to NIST* (Jan. 27, 2023), available at https://www.americanbanker.com/news/how-banks-should-deal-with-ais-risks-according-to-nist.

firms are actively advancing proposed standards regarding the ethical development and use of AI models.[30] These efforts should be supported by regulators, including through collaboration, recognition of standards setting organizations, and use of regulatory tools, such as safe harbors and guidance, that explicitly encourage adherence to such standards as evidence of compliance.

- **Establish a Federal Data Privacy & Security Framework that Contemplates the Evolution of AI in Financial Services**. As previously discussed, the quality of AI model outputs and predictions is inherently tied to the quality of data inputs used to train and operate such models. Policymakers, regulators, and the broader public are right to be concerned about whether we have appropriate safeguards in place regarding how data is being generated, sourced, secured, shared and consumed for use in AI models.[31] To this end, it is imperative that Congress work to establish a national framework that governs data privacy, advances cybersecurity, and ensures that consumers have control over—and trust and confidence in—how their data and information is being used.

  The Gramm-Leach-Bliley Act (GLBA) provides a baseline for how a broad range of financial firms must explain their information-sharing practices and safeguard consumer data. This law may provide a good starting point for the regulation of data use and security in financial services, but is due for modernization given market developments, including with respect to AI. Key areas for legislative updating include increased consumer transparency and control over the use of personal data, implementation of data minimization principles so that data is used for clear and stated purposes, opt-out rights for nonessential data collection, broader coverage, and consumer rights to withdraw consents or delete personal data, as appropriate.

  On the latter point of data deletion rights, it will be important for policymakers to consider how a consumer's invocation of this right could impact his or her future access to certain services, including lending or insurance, that may be limited by a lack of data access or availability. The law will need to balance the notion that a consumer should not ever be penalized or targeted for exercising a data control right with the reality that future underwriting models may require (or prefer) access to certain types of data. For this reason, consumers need to be fully informed of the implications in electing certain data treatment, including potential downstream effects in securing certain services.

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[30] *See* A.L. Lee*, Joe Biden says tech giants' AI pact promotes 'safety, security, and trust'* (July 21, 2023), available at https://www.upi.com/Top_News/US/2023/07/21/biden-wins-commitments-from-big-tech-giants-to-limit-AI/4601689933896/; *Google's ethical AI framework*, available at https://ai.google/responsibility/principles/#:~:text=Avoid%20creating%20or%20reinforcing%20unfair%20bias.&text=We%20will%20seek%20to%20avoid,and%20political%20or%20religious%20belief.

[31] Cat Zakrzewski, Cristiano Lima and David DiMolfetta, *Tech leaders including Musk, Zuckerberg call for government action on AI* (Sept. 14, 2023), available at https://www.washingtonpost.com/technology/2023/09/13/senate-ai-hearing-musk-zuckerburg-schumer/.

It is further important to note that a modernized national framework over data privacy and use should preempt overlapping state-based efforts. Our economy is increasingly digital, which inherently means that Internet and mobile-based platforms will increasingly be leveraged in the financial services context. These platforms (and the data moving on them) operate on a national (if not global) basis, which renders state-based frameworks inefficient, costly, confusing, and potentially unworkable. A patchwork approach to data regulation may accordingly undermine AI development in the U.S., result in market fragmentation, and also result in consumers, small and community banks, and other market participants in certain states being excluded from the benefits of such innovation.

As a final matter relating to the centrality of data in AI development, it is important that the CFPB finalize its Dodd Frank Section 1033 rulemaking in order to advance open banking in the United States. Section 1033 is predicated on the notion that consumers should control the sharing and use of their data, and that such data should not be subject to anti-competitive restrictions on its transfer. Consistent with the objectives for national data legislation outlined above, a proper Section 1033 rulemaking should advance consumer control over personal data, ensure data security and protection safeguards, and unlock increased financial services choice, access, and opportunity. To this end, government held consumer data should also be covered by the rule, which would increase the availability of high-quality financial data that can help develop high-quality models and AI tools.[32]

Because personal financial data covered by Section 1033 will increasingly be utilized by AI technologies, it is important for the rule to require clear disclosures and consent mechanisms regarding potential data use, but it should not proscribe or significantly limit those permissible uses beyond ones that harm consumers. For example, consumer data may be collected for a primary purpose such as securing a loan, but also for secondary uses, including with respect to AI-related research and development intended to develop new products and services. While clear disclosure and informed consumer consent should be required, it would not be in the consumers' or the U.S. economy's best interest to preclude such secondary use. Overbroad restrictions would likely have the unintended effect of stunting future AI development.

- **Avoid Hasty and Speculative Regulation that Can Chill Responsible AI Innovation in Financial Services**. Given existing financial services laws, regulations, and frameworks that are fit-for-purpose in identifying and mitigating risks associated with AI models, it is important for policymakers and regulators to avoid hasty and proscriptive rules based on

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[32] Indeed, even beyond the context of Dodd Frank Section 1033, the government should embark on a comprehensive "whole of government" effort to make available consumer-permissioned, high-quality financial and related data that it holds to improve data quality, help limit data sources with embedded bias, and advance responsible AI model development.

speculative or hypothetical future risks that have not yet demonstrated or emerged. The current mania around AI, largely the result of recently released Gen AI tools, is garnering policymaker attention, but this does not mean that hasty responses are appropriate within the regulated financial services sector.

Instead, as discussed above, policymakers and regulators should work to understand AI-related advances, how they are actually being adopted in the sector, benefits they are generating, and potential new risks they may pose. Only once actual risks have been identified should targeted policy or regulatory interventions be considered, which may involve recognizing technical and governance standards developed by the public and private sectors to address AI risks. If not, policymakers and regulators may deter or box-in further innovation and adoption, increase costs for firms, especially small firms and community banks, and squander the first-mover and competitive advantages U.S. companies currently hold.

An example of a regulatory proposal that appears overbroad and potentially premature in its requirements related to AI-technologies is the SEC's proposed rulemaking regarding "Conflicts of Interest Associated with the Use of Predictive Data Analytics by Broker Dealers and Investment Advisers." The proposed rule offers an overbroad definition of covered technologies, including AI technologies that have long been in existence, implies and asserts that such technologies pose greater risk of harm to investors and going undetected (despite clear historical evidence of misconduct made harder to trace by legacy tools, such as unscrupulous brokers targeting investors by telephone),[33] and then seeks to treat firms using these technologies differently from those relying on legacy systems by subjecting them to a more punitive conflict of interest framework.

By specifically targeting emerging technologies largely based on existing conduct already subject to regulation or speculative conduct that may (or may not) occur in the future, the proposal is inherently not technology-neutral and will deter adoption of such technologies. A risk of the rule, as the SEC acknowledges, is that smaller firms will be deterred from adopting technologies covered by the rule.

An alternative approach to regulating emerging technologies would be identifying actual conduct in the market that causes clear investor harm and then specifically regulating or precluding that conduct, including its use of technological tools. An example in the conflicts context are SEC rules that prohibit broker-dealers from engaging in "sales contests" to sell particular securities. This preclusion was based on a determination that pressure to sell a particular security was inherently in conflict with recommending another

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[33] SEC, *Boiler room schemes*, available at https://www.investor.gov/introduction-investing/investing-basics/glossary/boiler-room-schemes.

security that may be in the best interest of the investor.[34] This approach of identifying particular harm—and mitigating or eliminating that specific harm—would be more appropriate when dealing with emerging technologies whose use and applications in the market are not yet known or determined.

- **Monitor Broader Gen AI Developments and Policy Considerations to Inform Financial Regulation.** As noted throughout this testimony, it is wholly appropriate for policymakers, industry and the public to consider broader public policy implications related to emerging Gen AI. Those discussions will cover many non- or lightly-regulated areas of non-financial-services activity and should result in the development of ethical, operational, and security-related standards and best practices. Some of those broader discussions may benefit by looking to and incorporating existing risk management frameworks common in the financial services context. Those broader discussions should also inform financial services regulation, but not create redundancies, conflicts or ambiguity. In-line with the conclusion from the prior recommendation, to the extent that specific risks, harms, or problematic behaviors are identified in the financial services context, it would be appropriate for financial regulators to tailor new regulations and guidance to solve for those challenges.

- **Prioritize Law Enforcement, Public-Private Collaboration, Tech Literacy, and Adoption of New Technologies to Combat Fraud, Scams, and Financial Crime.** As is the case with any new technologies, bad actors will find new ways to engage in illegal conduct, including financial fraud and scams that target consumers and market participants. It is necessary and appropriate that federal and state law enforcement agencies take the lead in investigating, understanding, and prosecuting this conduct. It is further necessary that these agencies work collaboratively with each other and with financial and technology firms and regulators to ensure the sharing of information and best practices.

  As already highlighted by the recent law enforcement advisory on deep fakes, it will be equally necessary that government agencies, regulators, and financial firms develop internal technological expertise and adopt leading-edge technology tools, including those based on AI, in order to detect, prevent, and mitigate the risk of fraud and related attacks. Financial regulators should further invest in technology innovation offices, new tech infrastructure, and staff education in order to stay informed of latest developments and have access to necessary technologies and tools.[35] Regulators should further pursue new ways to collaborate with the industry to enhance collective knowledge, including through

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[34] Congressional Research Center, *Regulation Best Interest (Reg BI): The SEC's Rule for Broker-Dealers* (Dec. 12, 2019), available at https://crsreports.congress.gov/product/pdf/R/R46115/1.
[35] *See* Jo Ann Barefoot, Alliance for Innovative Regulation, *RegTech Manifesto* (July 2020), available at https://drive.google.com/file/d/1FFINnL-Rz8IupOMn5IYARgn3W9eRZYU3/view.

tech sprints and related approaches.[36] Further development of AI-based technological tools and strong public-private collaboration in this area will be the most effective ways to combat the challenge posed by bad actors.

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Thank you for your time and inviting me to speak with you today. As detailed above, the development and adoption of AI in financial services is not only inevitable, but it holds tremendous promise in better serving consumers and businesses, expanding the appeal of U.S. financial markets and services, and ensuring the global competitiveness of financial firms and our broader economy. Given existing financial services regulatory frameworks, adoption of complex models in higher-risk functions will be gradual and subject to key governance requirements and controls. While it is wholly appropriate for regulators to closely monitor developments and target interventions when specific risks are identified, it is equally important to enhance clarity and encourage the industry to continue developing and responsibly adopting AI. AI is a technology that will be at the center of the second half of the 21st century — it is a technology that the U.S. must lead in a world of increasing competition.

Thank you. I am happy to answer any questions that you have.

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[36] FDIC and FinCEN, *FDIC and FinCEN Launch Digital Identity Tech Sprint* (Jan. 11, 2022), available at https://www.fincen.gov/news/news-releases/fdic-and-fincen-launch-digital-identity-tech-sprint; *see also* Daniel Gorfine, *FinTech Innovation: Building a 21st Century Regulator* (Nov. 2017), available at https://www.law.georgetown.edu/iiel/wp-content/uploads/sites/8/2018/01/LabCFTC-Chris-Brummer-Dan-Gorfine-IIEL-Issue-Brief-November-2017-Accessible.pdf.

Appendix A
Daniel Gorfine Biography

My name is Daniel Gorfine, and I am the founder and CEO of Gattaca Horizons LLC, a boutique advisory firm. I am also an adjunct professor at the Georgetown University Law Center, and was honored to have previously served as Chief Innovation Officer at the U.S. Commodity Futures Trading Commission (CFTC) and Director of LabCFTC. At the CFTC, I developed and led the Commission's new technology innovation effort focused on informing policy and helping the Agency keep pace with modern, digital markets. In my advisory capacity, I work with a range of clients, including financial firms, technology companies, fintech firms, industry trade associations, and startups. I am also a co-founder of the non-profit Digital Dollar Project, which explores CBDC and the digital future of money. As an adjunct professor at Georgetown University, I teach a course titled "Fintech law and policy."

I am a graduate of Brown University (A.B.), hold a J.D. from the George Washington University Law School and an M.A. from the Paul H. Nitze School for Advanced International Studies (SAIS) at Johns Hopkins University.