STATEMENT OF

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before the

TASK FORCE ON ARTIFICIAL INTELLIGENCE

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Statement Required by 12 U.S.C. § 250:
The views expressed herein are those of the Office of the Comptroller of the Currency and
do not necessarily represent the views of the President.

Chairman Foster, Ranking Member Gonzalez, and members of the Task Force, thank you for the opportunity to appear today to discuss Artificial Intelligence (AI) approaches used by national banks, federal savings associations, and federal branches and agencies of foreign banks (hereafter "banks") supervised by the Office of the Comptroller of the Currency (OCC). I appreciate this invitation to discuss the opportunities, benefits and challenges AI presents for banks and the OCC's approach to supervising those activities. For purposes of this testimony, AI is broadly defined as the application of computational tools to address tasks traditionally requiring human analysis and decision making.

I serve as the OCC's Deputy Comptroller for Operational Risk Policy, and I am responsible for overseeing the development of policy and examination procedures addressing bank operational risk. This includes bank information technology and cybersecurity, critical infrastructure, payments systems, third party risk, and operational risk governance. In this capacity, I oversee staff whose duties include understanding and monitoring AI risks and benefits and I participate in the development of examiner and industry policy and guidance. I also participate in the OCC's international work in this area by serving as the Co-Chair of the Basel Committee on Bank Supervision's Financial Technology Group which coordinates the sharing of regulatory approaches and practices across foreign jurisdictions, including those related to the use of AI.

In my testimony today, I will describe the agency's approach to responsible innovation and our supervisory expectations for banks' use of AI, including regulatory compliance. I will also discuss our coordinated interagency approach related to banks' use of AI, as evidenced by the 2021 *Request for Information and Comment on Financial Institutions' Use of AI, including*

Machine Learning[1] as a means to gather stakeholders' views on how banks can use AI and the key benefits and risks associated with its use. Finally, I will briefly discuss the OCC's ongoing efforts to update our own technological framework to support our bank supervision mandate.

OCC Supports Responsible Innovation

The OCC charters, supervises, and regulates 1,109 banks which cover a broad spectrum of asset sizes and business models. These banks range in size from very small community banks to the largest, most globally active banks operating in the United States. The vast majority have less than $1 billion in assets, while more than 60 have greater than $10 billion in assets. Together, they hold $14.5 trillion in assets—almost 70 percent of all the assets of commercial U.S. banks.

Technological changes and rapidly evolving consumer preferences are reshaping the financial services industry and creating new opportunities to provide consumers, businesses, and communities with more access to and options for products and services. Over the years, we have adapted our supervisory approach to address these technological innovations by banks, including an increase in banks' use of AI. AI can provide efficiencies in operations and back office functions, support lending decisions, and improve a bank's ability to monitor compliance with regulatory requirements including under the Bank Secrecy Act (BSA) and the Home Mortgage Disclosure Act. However, the OCC also recognizes that there are risks associated with the use of AI and vigilantly supervises banks to ensure their use of AI does not adversely affect safety and soundness, impede fair access to financial services, or result in unfair treatment of consumers, or violate applicable laws and regulations.

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[1] *See* OCC Bulletin 2021-17, issued March 31, 2021, Artificial Intelligence: Request for Information on Financial Institutions' Use of Artificial Intelligence, Including Machine Learning | OCC

The OCC promotes responsible innovation in the federal banking industry to expand access to credit and capital, improve operations, and support full and fair participation in America's banking system. In March 2016, the OCC published a paper entitled *Supporting Responsible Innovation in the Federal Banking System: An OCC Perspective[2]* which outlines our approach to responsible innovation. Our guiding principles for responsible innovation emphasize safety and soundness, compliance with applicable laws and regulations, and fair access and fair treatment. The OCC expects bank management and each bank's board of directors to understand the impact and associated risks of enabling technologies, including on their bank's financial performance, strategic planning process, risk profiles, and traditional banking models.

The OCC established a dedicated Office of Innovation in 2016. The Office of Innovation conducts external meetings and outreach activities, including formal office hours, with industry stakeholders, including banks and nonbanks, to promote responsible innovation in the federal banking system. This also allows the OCC to stay abreast of current trends and developments and improve the OCC's ability to respond more quickly, efficiently, and effectively to inquiries regarding new products and services. In addition, the Office of Innovation fosters internal OCC staff awareness of responsible innovation and emerging trends, and enhances the skills of examiners.

AI Presents Opportunities, Benefits and Risks

As the premise of this hearing suggests, the use of technology to aid banks in meeting regulatory requirements is not a new concept and it is not surprising to see new and innovative

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[2]*See* OCC issuance March 2016, Supporting Responsible Innovation in the Federal Banking System: An OCC Perspective | OCC

approaches, such as AI, be applied for this purpose. Such use of innovative technologies to facilitate regulatory compliance, commonly referred to as RegTech, can increase bank productivity and improve accuracy in analysis, decision making to support risk management and regulatory compliance monitoring and internal controls. AI has the potential to strengthen safety and soundness, enhance consumer protections, improve the effectiveness of compliance functions, and increase fairness in access to the financial services when implemented in an effective manner. Examples of where AI can be used to enhance bank customer services range from the use of chat-bots that aid in directing customer inquiries and assisting with online account openings, assist in selection of beneficial products and investments for consumers, to supporting more efficient credit underwriting, all of which have the potential to promote greater access to banking services by underserved communities.

Technological innovations have also increased access to greater computing power, including through cloud computing resources, coupled with the availability of increasing volumes of structured and unstructured data. This has created an environment where the resources needed to develop AI tools and services are more widely available to banks of all sizes. This can be seen in the development of advanced tools to improve the quality of fraud prevention controls, increase the effectiveness of anti-money laundering and the countering of terrorist financing (AML/CFT) monitoring activities, and help to identify and mitigate the risk of fair lending violations. AI can augment overall risk management, compliance monitoring and management, and internal controls. However, the key to ensuring these benefits are achieved and unintended risks are not introduced is by validating that banks have effective governance processes and controls in place for the planning, implementation and operation of these innovative solutions.

One promising use of AI relates to using alternative data, such as utility or rent payments as opposed to loan payments, in traditional credit models or AI applications. The OCC has championed the use of innovative technologies and approaches to expand access to credit as observed in our Project REACh (Roundtable for Economic Access and Change) initiative. Project REACh brings together leaders from banking, business, technology, and national civil rights organizations to reduce barriers that prevent full, equal, and fair participation in the nation's economy. One of the project's workstreams is focused on addressing the challenge of credit invisibles and promoting partnerships that open the door to mainstream financial services for economically-disadvantaged communities. Participants in this workstream are working to build a utility that will enable financial institutions to share customer permissioned data – including alternative data that includes information not typically found in the consumer's credit files – to be the basis of credit decisions for people who previously lacked opportunities. Using alternative data in AI applications may improve the speed and accuracy of credit decisions and may help firms evaluate the creditworthiness of consumers who may not otherwise obtain credit in the mainstream credit system.

More broadly, banks have been employing mathematical models to support operations for some time and are now introducing more sophisticated AI tools to support activities, including those mentioned above, in addition to trading algorithms and automation, financial marketing analysis, strengthening cybersecurity, and suspicious activity monitoring and customer due diligence. While we have seen many large banks develop these tools internally, third party firms are also increasingly offering sophisticated products and services to banks of all sizes.

 The increasing availability of third-party firms and fintechs allows banks to access specialized skills and benefits from economies of scale in the delivery of products and services.

The OCC encourages the responsible use of third-party products and services, with appropriate risk management and controls, by banks of all sizes and business models. However, third-party relationships can increase operational complexity or present unique challenges, and banks' use of third parties does not diminish the responsibility of the board and management to implement and operate new products and services in a safe and sound manner and in compliance with applicable laws and regulations.[3] Where appropriate, the OCC has the authority to conduct examinations of services provided by third parties under the Bank Service Company Act, which could, depending on the facts and circumstances, include the banking services supported by AI.

The OCC also remains focused on the potential risks of adverse outcomes if banks' use of AI is not properly managed and controlled. Potential adverse outcomes can be caused by poorly designed underlying mathematical models, faulty data, changes in model assumptions over time, inadequate model validation or testing, and limited human oversight, as well as the absence of adequate planning and due diligence in utilizing AI from third parties. Key risks in the use of AI include:

- *Explainability*. The extent to which AI decisioning processes are reasonably understood and bank personnel can explain outcomes is critical. Lack of explainability can hinder bank management's understanding of the conceptual soundness of the technology, which may inhibit management's ability to express credible challenge to models used or understand the quality of the theory, design, methodology, data, or testing. This may also inhibit the bank's ability to confirm that an AI approach is appropriate for the intended use. Lack of

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[3] The OCC, Board of Governors of the Federal Reserve System, and FDIC requested comment on proposed interagency guidance to help banks manage risks associated with third-party relationships on July 13, 2021. The comment period closed on October 18, 2021 and the agencies are still reviewing the comments received. This would update and replace the current OCC Bulletin 2013-29 Third Party Relationships: Risk Management Guidance.

explainability can also make compliance with laws and regulations, including consumer protection requirements, more challenging. For example, should a bank management team not adequately validate or attain reasonable assurance that a given AI model or tool being used to support credit underwriting is sound, a bias inherent in a given model's algorithmic design could exist. Such bias could ultimately perpetuate discriminatory credit decisioning practices and go unnoticed until a well-established pattern and practice has become evident and caused harm to consumers or caused the bank to be in noncompliance with applicable consumer protection requirements. Banks will find it important to reassess and, where necessary, enhance their risk management frameworks, including validation and internal audit, to achieve appropriate levels of explainability and manage inherent and residual risk appropriately for use of AI and other sophisticated analytical tools.

- *Data Management*. Understanding data origins, use, and governance when adopting traditional models, advanced analytics, and AI is also critical. Data analytics and governance are particularly important when AI involves dynamic updating or algorithms that identify patterns and correlations in training the data[4] without human context or intervention, and then uses that information to generate predictions or categorizations. Because the AI algorithm is dependent upon the quality of the data used and effectiveness of training, an AI system generally reflects the limitations of that dataset. To an even greater extent than other systems, AI may perpetuate or even amplify bias or inaccuracies inherent in the data or make incorrect predictions if a data set is incomplete, non-representative or otherwise flawed. This potential for unintended or illegal outcomes increases the importance of enhanced

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[4] Training data typically refers to data sets used to teach and confirm AI and machine learning models on expected outcomes.

understanding, monitoring and review of AI systems that are used for customer-focused activities such as credit underwriting.

- ***Privacy and Security***. Consumer privacy and data security are also important. The use of AI is predicated on access to large volumes of data, much of which may be sensitive. Banks must comply with applicable privacy and information security requirements when using AI. We also expect banks to practice sound cyber hygiene and maintain effective cybersecurity practices to prevent or limit the impact of corrupted and contaminated data that may compromise the AI application and to safeguard sensitive data against breaches. The OCC recognizes the paramount importance of protecting sensitive data and consumer privacy, particularly given the use of consumer data and expanded data sets in some AI applications.

- ***Third-Party Risk***. As previously noted, many banks rely on third party vendors, service providers and expertise for the development and implementation of AI tools and services. As part of an effective third-party risk management program, banks are expected to have robust due diligence, effective contract management and ongoing oversight of third parties based on the criticality of the services being provided.[5] This includes ensuring effective controls over aspects relevant to many AI services, including use of cloud-based entities, availability of documentation on models used, establishing roles and responsibilities and defining data ownership and permitted uses, security, privacy and limitations of any data that is shared with or exchanged among parties and other key governance expectations for the delivery of AI services. It is important for banks to monitor a third party's performance over time, and have controls to ensure data is used consistent with what the consumer originally

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[5] *See* OCC Bulletin 2013-29, October 30, 2013, "Third-Party Relationships: Risk Management Guidance"

permissioned, and that the results of independent assessments are available to assess if the AI service performs as intended.

While this is not an exhaustive list of risks, it does reflect key issues banks should manage appropriately in their use of AI. Failure to adequately manage risks can result in adverse outcomes for the bank or its customers that may include, but are not limited to, erroneous results, misinformed decisions, unauthorized access to customer information, failed transactions, or violations of consumer protection requirements, including fair lending laws.

OCC Approach to Supervision of AI

Many banks have plans to increase use of AI technologies and are investing or considering investing in AI research and applications to automate, augment, or replicate human analysis and decision-making tasks. As such, the OCC is continuing to update supervisory guidance, examination programs and examiner skills to respond to AI's growing use.

The OCC follows a risk-based supervision model focused on safe, sound, and fair banking practices, as well as compliance with laws and regulations, including fair lending and other consumer protection requirements. This risk-based approach includes developing supervisory strategies based upon an individual bank's risk profile and examiners' review of new, modified, or expanded products and services (collectively, new activities). Examiners generally consider new activities' effect on banks' risk profiles and the effectiveness of banks' governance and risk management systems as a key step in scoping each bank examination.[6]

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[6] In 2014, the OCC issued guidelines to establish minimum standards for the design and implementation of a risk governance framework that applies to any bank with total consolidated assets equal to or greater than $50 billion *See* OCC Guidelines Establishing Heightened Standards for Certain Large Insured national Banks, Insured Federal Savings Associations and Insured Federal Branches 12 C.F.R. Part 30, App. D.

Failure to adequately manage risks can result in adverse outcomes for the bank or to its customers. In order to aid banks with developing robust risk management and governance processes for the implementation of AI solutions, the OCC has published a number of informational resources individually and as part of interagency communications to the industry and examiners.

With respect to the complex mathematical models AI tools and techniques encompass, the OCC, in collaboration with the other federal banking agencies, issued OCC Bulletin 2011-12, "Supervisory Guidance on Model Risk Management Guidance" (MRMG) in 2011.[7] The bulletin articulated the elements of a sound program for effective management of risks that arise when using quantitative models in bank decision making.   It also provides guidance to OCC examiners and regulated institutions on prudent model risk management policies, procedures, practices, and standards.

Many of the AI tools being employed would be considered models under the MRMG. The key principles in the 2011 guidance apply to AI uses today, and the interagency statement is a key resource leveraged by the industry. OCC examiners have significant experience supervising banks' use of sophisticated mathematical models and we are incorporating AI concepts into several of our recently published guidance and statements.

In October 2017, the OCC issued guidance[8] to the banking industry addressing the implementation of new activities, such as AI. This guidance stresses the importance of establishing appropriate risk management processes for new activities, such as the introduction

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[7] *See* OCC Bulletin 2011-12| April 4, 2011, Sound Practices for Model Risk Management: Supervisory Guidance on Model Risk Management
[8]*See* OCC Bulletin 2017-43, New, Modified, or Expanded Bank Products and Services: Risk Management Principles | OCC

of AI, including the ability to effectively identify, measure, monitor, report and control the risks associated with those activities. Effective risk management includes appropriate due diligence and risk assessment, sufficient and qualified staffing, governance (e.g., approval authority, parameters for use, independent validation processes), and controls. These fundamental practices apply to the risks posed by both AI applications, and the functions that AI supports regardless of whether the AI tool was developed by the bank or obtained through a third party.

More recently, the OCC has coordinated with other agencies and published statements addressing key governance and risk management practices for the use of innovative solutions in specific areas of banking. Examples include:

- *Interagency Statement on the Use of Alternative Data in Credit Underwriting*[9], issued on December 3, 2019, by the OCC, Board of Governors of the Federal Reserve System, the Consumer Financial Protection Bureau, Federal Deposit Insurance Corporation, and National Credit Union Administration to outline consumer protection implications of the use of alternative data in underwriting, thus highlighting potential benefits and risks. The statement seeks to encourage the responsible use of alternative data; explain that many factors associated with using alternative data, including cash flow data, may increase or decrease consumer protection risks; and explain that a well-designed compliance management program provides for a thorough analysis of relevant consumer protection laws and regulations to ensure firms understand the opportunities, risks, and compliance requirements before using alternative data.

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[9] *See* Interagency Statement on the Use of Alternative Data in Credit Underwriting

- *Interagency Statement on Model Risk Management for Bank Systems Supporting BSA/AML Compliance and Request for Information*, issued in April 2021, by the federal banking agencies, in consultation with FinCEN and the NCUA. This joint statement addressed questions from the industry regarding how banks can apply the MRMG when using technology systems or models to comply with BSA/AML laws and regulations. The joint statement clarified that the MRMG provided flexibility for banks when developing, validating, implementing, and updating systems or models used to comply with BSA/AML laws and regulations. While the joint statement responded to industry interest in using advanced models for BSA/AML compliance, it also emphasized the broader point that the practical application of any principle discussed in the MRMG depends, in part, on a bank's reliance on sound risk management.

- *OCC Comptroller's Handbook, Model Risk Management[10]* booklet, published in August 2021. This new examination booklet does not create new guidance but informs and educates examiners on the sound model risk management practices, addressed in the interagency MRMG, that should be assessed during an examination. The booklet also provides information important to planning and coordinating examinations on model risk management, identifying deficient practices, and conducting appropriate follow-up. AI concepts and the relationship to the MRMG are discussed in the booklet.

In addition to providing guidance, the OCC is focused on educating examiners on a wide range of AI uses and risks including risks associates with third parties, information security and resilience, compliance, BSA, credit underwriting, and fair lending and data governance, as part of training courses and other educational resources. The OCC also maintains an Economics and

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[10] See [Comptroller's Handbook: Model Risk Management](#).

Risk Analysis Division to ensure appropriate technical expertise and knowledge is available to support ongoing supervision and targeted examinations of banks' use of complex models and AI. This team is staffed with PhDs in economics, finance, and other sciences whose primary objective is to assess the technical strengths and limitations of a broad range of models and innovative tools developed, managed, and used by banks. Key supervisory areas this team focuses on include fair lending, BSA/AML, retail and commercial credit, capital markets and other banking operations. This staff is focused on the ongoing understanding and identification of emerging risks, financial markets, and industry behavior in the use of these sophisticated tools, such as AI, to inform OCC policy and supervisory strategies.

With these resources, the OCC will continue to perform robust supervision of banks' use of AI, whether directly or through a third-party relationship, to ensure banks operate in a safe and sound manner, comply with applicable laws, provide fair access to financial services, and treat their customers fairly. This includes evaluating fair lending concerns and other consumer protection issues such as unfair or deceptive acts or practices. Banks should maintain a well-designed risk management and compliance management program as well as monitor for and identify outcomes that create unwarranted risks or violate consumer protection laws. If these outcomes occur, the OCC has a range of tools available and will take supervisory or enforcement actions as appropriate, to achieve corrective actions and address potential adverse consumer impacts.

Interagency Request for Information

Recognizing the growing interest and use of AI in the banking sector and the potential impact on banks' operations, in 2021, the OCC, in collaboration with the Board of Governors of the Federal Reserve System, Consumer Financial Protection Bureau, Federal Deposit Insurance

Corporation and National Credit Union Administration, issued a *Request for Information and Comment on Financial Institutions' Use of Artificial Intelligence, including Machine Learning* (RFI).[11] This RFI included specific questions related to these advanced technologies and requested respondents' views on the use of AI by financial institutions in their provision of services to customers and for other business or operational purposes; appropriate governance, risk management, and controls over AI; and any challenges in developing, adopting, and managing AI. The RFI solicited views on the use of AI in financial services to assist in determining whether any clarifications would be helpful for the use of AI in a safe and sound manner and in compliance with applicable laws and regulations, including those related to consumer protection.

More than 70 comments were submitted in response to the RFI. The OCC, working with the other agencies, identified several key themes from the comments, consistent with the risk categories described in this testimony. The OCC has organized workstreams around each of the key themes to complete a gap analysis which will include identifying existing OCC pronouncements applicable to AI and machine learning; outlining potential gaps in guidance, supervision, or regulation; and developing recommendations to address any identified gaps as appropriate. We will continue to engage in interagency discussions to determine next steps.

OCC's Developments in SupTech

While the banks we supervise are using technology to enhance their capabilities, the OCC is also engaged in innovative approaches to enhance the planning and execution of our supervisory responsibilities, risk identification, and policy development. Currently, the OCC is

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[11]See OCC bulletin 2021-17, issued March 31, 2021, [Artificial Intelligence: Request for Information on Financial Institutions' Use of Artificial Intelligence, Including Machine Learning | OCC](#)

engaged in a significant initiative to materially upgrade core supervision systems. The OCC is committed to evaluating and exploring use of advanced technologies, including AI capabilities, that can deliver improved insights to our supervisory, policy staff, and risk analysis teams as part of this supervisory system upgrade. We recognize that these technologies rely on quality data to generate unique insights. Accordingly, the OCC has developed and is in the process of deploying a strong data governance program. Additionally, we are concurrently enhancing our technology architecture which will include upgraded network and security capabilities. These enterprise level initiatives are foundational to the implementation of advanced technologies such as AI. These OCC strategic priorities will help gain examination efficiencies and enhance our ability to identify, measure, and monitor risk in the federal banking system. Finally, the OCC recognizes the importance of to developing and maintaining a robust human capital capability to successfully deploy advanced technical solutions and continues to focus on hiring people with strong analytical capabilities for our supervision analysis staff as well as data scientists.

Conclusion

The OCC supports continuing efforts by national banks and federal savings associations to explore safe and sound uses of AI. While AI opens opportunities and can provide many benefits, we are also mindful of the challenges and risks associated with AI applications and services that we expect our regulated institutions to address. The OCC will continue to conduct robust, risk-based supervision, monitor the industry, and research efforts to keep pace with changes in AI use in the financial sector.

I want to thank the Task Force for its leadership on this important issue and for inviting the OCC to testify today.