Ask the Regulators:
Use of Artificial Intelligence and Machine Learning (AI/ML) at Supervised Financial Institutions

Speakers:
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December 16, 2020

Welcome

- **Today's session**
- **Questions:**
  - We will respond to questions submitted in advance
- **This call is being recorded and will be available immediately following the session.**
  - Archived recording can be accessed using the same link as today's webinar.
- **A survey will be delivered via email following the call. Let us know your thoughts or ideas for future sessions.**

Goals of Today's Session

- **Discuss issues and common questions raised by various parties related to banks' use of AI/ML**
  - What is AI/ML?
  - Example of AI/ML usage
  - Risk management considerations & controls
  - Data used for AI/ML
  - Explainability/transparency
  - Consumer protection considerations
  - Independent review

- **Highlight examples of existing laws, regulations, supervisory guidance, and other documents that may be relevant to AI/ML**

- **Respond to questions submitted for this session**

- **Continue ongoing dialogue with the industry on AI/ML**

Innovation in Financial Services

- **Financial regulators encourage responsible innovation in banking that benefits consumers and businesses**
- **As in other areas, when using AI/ML banks should**
  - Operate in a safe-and-sound manner
  - Comply with applicable laws and regulations, including those relating to consumer protection
- **Banks should identify and effectively manage all risks, including those arising from innovation**
  - Apply risk management and controls in line with the risks presented
  - Establish a compliance management program that provides for a thorough analysis of and compliance with relevant consumer protection laws and regulations

What Are AI and ML?

- **For the purposes of this presentation:**
  - Artificial intelligence (AI) is "the application of computational tools to address tasks traditionally requiring human sophistication"
  - Machine learning (ML) is "a method of designing a sequence of actions to solve a problem, known as algorithms, which optimize automatically through experience and with limited or no human intervention"
  - ML is considered a subset of AI

  Source: Financial Stability Board – November 2017

AI/ML Use by Banks

- **Areas of observed AI/ML use cases to date include (but are not limited to):**
  - Fraud Detection and Prediction
  - Identifying Unusual Transactions (e.g., BSA/AML)
  - Customer Engagement (e.g., Call Centers and Chatbots)
  - Reviewing and Analyzing Text Documents
  - Marketing
  - Forecasting
  - Trading
  - Credit Underwriting and/or Pricing
  - Servicing
  - Monitoring and Preventing Cyber Threats

Potential Benefits and Challenges from AI/ML

- **Potential benefits from AI/ML could include:**
  - Reducing costs and increasing efficiencies
  - Identifying more complex relationships
  - Improving performance / accuracy
  - Expanding credit to consumers and businesses

- **Potential challenges could include:**
  - Data quality, accuracy, protection, and bias
  - Explainability/lack of transparency
  - Unlawful discrimination/fairness/consumer compliance
  - Scarcity of talent and proper expertise
  - Adoption based on hype rather than informed decision

Risk Management Considerations

- **Important for the board and senior management to think carefully about the risks from AI/ML and how to manage those risks**
  - Identify and develop the necessary expertise and resources across relevant areas
  - Construct and maintain processes that promote sound development, implementation, use, and independent review
  - Establish sound governance
  - Recognize the benefits and limitations of AI/ML, with risk management tailored to each use case
- **Risk management and controls for AI/ML should be commensurate with complexity, materiality, use, and sophistication of AI/ML methods**
- **Existing regulations, supervisory guidance, and other resources may be relevant to banks' use of AI/ML**

Data Used with AI/ML

- Banks are making greater use of larger datasets for AI/ML

- Data can play an even more important role with AI/ML relative to other, more "traditional" approaches

- This strong reliance on data increases the importance of sound data controls

- While there are numerous sound data controls, fundamental controls include evaluating data quality and confirming data suitability

- Certain requirements in laws and regulations can also apply to use of data

Interagency Statement on Alternative Data

- **Issued on December 3, 2019, by the Federal Reserve Board, the CFPB, the FDIC, the OCC, and the National Credit Union Administration**

- **Describes the potential benefits to consumers of using alternative data, such as expanding access to credit and enabling consumers to obtain additional products and more favorable pricing and terms**

- **Underscores the importance of a well-designed compliance management program, which:**
  - Includes thorough analysis of relevant consumer protection laws and regulations as they apply to alternative data

- **Notes that data directly related to consumers' finances and how consumers manage their financial commitments may present lower risks than other forms of alternative data**

Explainability and Transparency

- **A key question is whether AI/ML approaches are transparent and understood by banks**

- **Conceptually, the lack of explainability can translate into a higher level of uncertainty about an approach's suitability**

- **Explainability contributes to sound risk management**

- **Explainability is important to ensuring compliance with consumer protection requirements, such as those associated with fair lending and adverse action notices**

- **A key question for banks is how they establish internal standards for explainability and transparency**

Consumer Protection Considerations

- **AI/ML approaches may be more challenging to evaluate than traditional approaches**

- **To ensure models are in compliance with laws and regulations, including bank staff responsible for consumer protection and fair lending during development and implementation is advisable**

- **It is important for data and methodologies to be appropriately reviewed and tested to ensure consumer compliance**

  - Fair lending testing may include review of input data, review of structure and output, and analysis of and comparison to alternative approaches

- **A diverse and inclusive staff may be more likely to recognize the benefits and risks**

Independent Review of AI/ML

- Consistent with prudent risk management principles, a key control for use of AI/ML is independent review

- Challenges may arise with reviewing and evaluating AI/ML approaches that are less transparent

- Assessment of data quality and suitability is important

- Dynamic updating is a key issue for consideration with independent review of certain AI/ML approaches that evolve on their own

- Independent review also includes evaluation of AI/ML approaches provided by third parties/vendors, including evaluation of the how those approaches are used

Relevant Laws and Regulations

Note: Not an exhaustive list of relevant laws and regulations

- **Section 39 of the Federal Deposit Insurance Act as implemented through the agencies' safety and soundness regulations**

- **Sections 501 and 505(b) of Gramm-Leach-Bliley Act as implemented through the agencies' regulations, including Interagency Information Security Standards**

- **Fair Credit Reporting Act (FCRA) / Reg. V**

- **Equal Credit Opportunity Act (ECOA) / Reg. B**

- **Fair Housing Act (FHA)**

- **Section 5 of the FTC Act (Unfair and Deceptive Practices (UDAP)) and the Dodd-Frank Act (Unfair, Deceptive, and Abusive Practices (UDAAP))**

- **Additional laws and regulations may be relevant depending on the use case**

Relevant Supervisory Resources

- **Resources that may have relevance to banks' use of AI/ML include (but are not limited to):**

  Supervisory Guidance
  – Model Risk Management
  – Third-Party/Outsourcing Risk Management
  – New, Modified, or Expanded Bank Products and Services

  Examination Manuals/Procedures/Other Resources
  – Interagency Statement on the Use of Alternative Data in Credit Underwriting
  – FFIEC Information Technology Examination Handbook
  – Consumer Compliance Manuals/Handbooks
  – Interagency Fair Lending Examination Procedures
  – CFPB Innovation Spotlight on Providing Adverse Action Notices When Using AI/ML models
  – CFPB ECOA Baseline Module 5 Exam Procedures on "Fair Lending Risks Related to Models"

Next Steps

- **Agencies recognize that the use and implementation of AI/ML continues to evolve**

- **Agencies will continue to monitor adoption, benefits, and challenges of banks' use of AI/ML**

- **Agencies are considering ways to continue engaging with key stakeholders to support responsible innovation and maintain safety and soundness and consumer protection**

- **As part of those efforts, agencies will continue to assess the need for any further clarification to the industry and others**

Responses to Questions

- **Agencies responding to questions submitted in advance**
- **Thanks to those who submitted questions**
- **In certain cases the agencies combined questions for efficiency**

Thanks for joining us.