

Chapter 3A

Artificial Intelligence in the Securities Industry

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Artificial intelligence (AI), in its various forms,¹ continues to rapidly transform the securities industry around the world. Securities industry participants, such as broker-dealers and investment advisers, are using, and further exploring, AI technology in their businesses and operations to improve efficiency, reduce cost, enhance performance, and provide products and services with greater customization, among other benefits.

1. For a discussion regarding the definition of AI, see *infra* section 3A:2. In its report on the use of AI in the securities industry, the Financial Industry Regulatory Authority, Inc. (FINRA) describes AI as an umbrella term that encompasses a broad spectrum of different technologies and applications. See FINRA, ARTIFICIAL INTELLIGENCE (AI) IN THE SECURITIES INDUSTRY (June 2020), <https://www.finra.org/sites/default/files/2020-06/ai-report-061020.pdf> [hereinafter FINRA AI Report], at 2.

While securities regulators recognize the benefits of AI technology, they are concerned about the risks, including potential conflicts of interest, that the use of such technology can pose to investors and the financial markets, and how firms are identifying and mitigating such risks. In this regard, regulators generally have focused their attention on AI technologies and use cases that have the potential to impact client outcomes or market integrity, as well as AI technologies that present unique risks due to the complexity and opaqueness in how they produce output.

The use of AI technology by securities industry participants requires consideration of a broad spectrum of existing laws, rules, and regulations. Moreover, securities industry participants must be aware of developments pertaining to AI-related initiatives of the U.S. Congress² and state legislatures, as well as rulemaking, regulatory guidance, examination initiatives, and enforcement actions of securities regulators, such as the U.S. Securities and Exchange Commission (SEC) and self-regulatory organizations (SROs), including FINRA. In addition, lawmakers and regulatory agencies outside of the United States, including those in Asia, Europe, Latin America, and the Middle East, and international standard-setting bodies, are actively addressing the use of AI technology in the securities industry.

This chapter provides an overview of various approaches to defining AI; discusses AI use cases in the securities industry; and highlights certain aspects of the U.S. regulatory landscape relevant to the use of AI by securities industry participants, including existing rules and regulations, rulemaking proposals, and other regulatory initiatives. This chapter also discusses examination priorities, sweeps, and enforcement actions by U.S. securities regulators, and outlines practical considerations for developing AI governance frameworks and risk management strategies. Finally, this chapter provides an overview of existing regulatory frameworks and developments relating to the use of AI by securities industry participants in certain non-U.S. jurisdictions as well as initiatives by international standard-setting bodies.

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2. See, e.g., Press Release, U.S. House Fin. Servs. Comm., McHenry, Waters Announce Creation of Bipartisan AI Working Group (Jan. 11, 2024), <https://financialservices.house.gov/news/documentsingle.aspx?DocumentID=409108> (announcing the formation of the committee's bipartisan Working Group on Artificial Intelligence, which will explore: (i) how AI is impacting the financial services and housing industries (including the development of new products and services, fraud prevention, compliance efficiency, and the enhancement of supervisory and regulatory tools); (ii) how AI may impact the financial services workforce; and (iii) how existing regulation addresses the use of AI and how lawmakers can ensure that any new regulations consider both the potential benefits and risks associated with AI).

§ 3A:2 Definition of “Artificial Intelligence”

There is no universal definition of AI. Numerous federal and state regulatory agencies, SROs, and international standard-setting bodies (such as the International Organization of Securities Commissions (IOSCO)) have offered their own definition of AI. The following are examples of definitions of “AI” or related terms:

- In the FINRA AI Report, FINRA states that AI “broadly refers to applications of technology to perform tasks that resemble human cognitive function and is generally defined as the capability of a machine to imitate intelligent human behavior.”³
- In the SEC’s July 2023 proposal of new and amended rules under the U.S. Securities Exchange Act of 1934 (the “Exchange Act”) and the U.S. Investment Advisers Act of 1940 (the “Investment Advisers Act” or “Advisers Act”) to address conflicts of interest associated with the use of predictive data analytics (PDA) and similar technologies (including AI) by broker-dealers and investment advisers in investor interactions, the SEC uses the term “covered technology.”⁴ The term “covered technology” would be defined broadly to mean an analytical, technological, or computational function, algorithm, model, correlation matrix, or similar method or process that optimizes for, predicts, guides, forecasts, or directs investment-related behaviors or outcomes.
- IOSCO has defined AI as “the science and engineering of making intelligent machines, or simply, the study of methods for making computers mimic human decisions to solve problems.”⁵ AI “includes tasks such as learning, reasoning, planning, perception, language understanding and robotics.”

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3. FINRA AI Report, *supra* note 1, at 2 (internal quotation marks and citation omitted).
 4. Conflicts of Interest Associated with the Use of Predictive Data Analytics by Broker-Dealers and Investment Advisers, Exchange Act Release No. 97,990, Investment Advisers Act Release No. 6353 (July 26, 2023), 88 Fed. Reg. 53,960 (Aug. 9, 2023) [hereinafter PDA Proposal]. The PDA Proposal would apply to all broker-dealers and investment advisers registered, or required to be registered, with the SEC. The rules would not apply to, for example, exempt reporting advisers and state-registered advisers.
 5. IOSCO Final Report: The Use of Artificial Intelligence and Machine Learning by Market Intermediaries and Asset Managers (Sept. 2021) (the “IOSCO AI Report”), <https://www.iosco.org/library/pubdocs/pdf/IOSCOFD684.pdf>, at 5 (internal quotation marks and citation omitted).

- The U.S. Department of Commerce’s National Institute of Standards and Technology (NIST) has defined the term “AI system” to mean “an engineered or machine-based system that can, for a given set of objectives, generate outputs such as predictions, recommendations, or decisions influencing real or virtual environments” and that is “designed to operate with varying levels of autonomy.”⁶

From a compliance and regulatory perspective, the various definitions can implicate the scope of technologies covered. Firms must therefore carefully consider the relevant definitions when developing AI governance and risk management processes, including compliance policies and internal controls.

§ 3A:3 AI Use Cases in the Securities Industry

Broker-dealers, investment advisers, and other securities industry participants use, or are exploring the use of, AI technology across many aspects of their businesses and operations. AI use cases span front-, middle-, and back-office functions and have different risk profiles from a regulatory perspective.

Examples of client-facing use cases include: automated customer onboarding; creation of holistic, real-time client profiles using information from a variety of sources (for example, activity on a firm’s website and/or mobile app, prior electronic communications and posts on social media platforms, and public websites); automation of routine client interactions through the firm’s website, mobile app and/or call center using chatbots, virtual assistants, and other technologies; preparation of personalized communications, such as targeted emails, messages, and prompts; generation of curated research; and creation of advertising and educational materials.

AI can be used to support and enhance the performance of various middle- and back-office functions, including information technology, information security/cybersecurity, risk, legal, and compliance. For example, AI may be used to help firms’ (or third-party vendors’) developers to generate and test code. AI also may be used to help with Know Your Customer (KYC) reviews, sanctions checks, transaction surveillance, risk monitoring, and reporting (for example, liquidity, market, and credit risk), surveillance of electronic communications, and creating or analyzing contracts.

6. NIST, ARTIFICIAL INTELLIGENCE RISK MANAGEMENT FRAMEWORK (AI RMF 1.0) (Jan. 2023), <https://nvlpubs.nist.gov/nistpubs/ai/NIST.AI.100-1.pdf> (“NIST AI Risk Management Framework”), at 1.

Asset managers are using, or considering the use of, AI to support numerous aspects of their businesses, including to optimize portfolio management, order execution, and broker selection; automate labor-intensive portions of the due diligence process (for example, review regulatory filings and legal documents); and improve internal research capabilities (which may involve diverse, non-traditional data sources, such as social media, satellite images, and weather forecasts).⁷

In addition, securities regulators, themselves, have been using, and are continuing to explore and/or expand the use of, AI technologies to augment their surveillance, examination, and enforcement programs.⁸

§ 3A:4 U.S. Regulatory Landscape

Securities industry participants contemplating the use of AI in their businesses and operations can be subject to a broad set of U.S. laws, rules, and regulations. When deploying or considering deploying AI technology, understanding existing regulatory requirements and how they apply to a firm's use of AI technology, and keeping abreast of regulatory developments and regulators' expectations, are critical, as these considerations are evolving rapidly.

§ 3A:4.1 U.S. Securities Regulators

In the United States, securities industry participants are regulated by federal and state securities agencies and SROs, including the SEC and FINRA. Several securities regulators have recently undertaken AI-related rulemaking, examination, and enforcement initiatives,

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7. With respect to the use of AI for order execution and broker selection, the SEC staff has noted that asset managers increasingly are using a tool referred to as an "algo wheel." See SEC STAFF REPORT ON ALGORITHMIC TRADING IN U.S. CAPITAL MARKETS (Aug. 5, 2020), https://www.sec.gov/files/algo_trading_report_2020.pdf ("Algo Trading Report"), at 35. As described in the Algo Trading Report, algo wheels connect institutional investors into multiple broker algorithm offerings, choose brokers and individual algorithms based on specified constraints or preferences, track the performance of broker algorithms under different market conditions, and enable switching between different brokers without input from a human trader.
 8. See, e.g., Scott W. Bauguess, then-Acting Dir. & Acting Chief Economist, SEC Div. of Econ. & Risk Analysis (DERA), Keynote Address at OpRisk North America 2017: The Role of Big Data, Machine Learning, and AI in Assessing Risks: A Regulatory Perspective (June 21, 2017), <https://www.sec.gov/news/speech/bauguess-big-data-ai> (describing, among other examples, DERA staff's use of ML to analyze structured and unstructured data from regulatory filings of investment advisers to identify unique or outlier reporting behaviors).