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REGULATING ARTIFICIAL INTELLIGENCE IN SECURITIES MARKETS: A LAW AND ECONOMICS ANALYSIS OF INVESTOR PROTECTION, MARKET INTEGRITY AND FINANCIAL INNOVATION



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Abstract

This article examines the regulatory challenges arising from the increasing use of artificial intelligence (AI) in securities and capital markets. It focuses on the interaction between investor protection, market integrity, systemic risk and financial innovation and analyses these issues through a Law and Economics perspective. The study adopts a doctrinal, comparative and interdisciplinary methodology, drawing on primary legal and regulatory materials and authoritative institutional literature. The analysis identifies information asymmetry, model and data risk, cybersecurity threats, explainability and accountability problems, market manipulation and correlated trading, third-party dependency and concentration as principal regulatory concerns. It further considers the costs of regulation, externalities, incentives and the need for proportionate and risk-sensitive intervention. The article argues that effective AI governance in securities markets should distinguish between uses according to their function, potential consequences and degree of human oversight, while maintaining clear responsibility for regulated activities. It concludes that an effective regulatory framework should seek to reduce the expected social costs of AI-related market failures while preserving the efficiency and innovation benefits of responsible AI adoption.

Keywords – Artificial Intelligence; Securities Regulation; Investor Protection; Market Integrity; Financial Innovation; Law and Economics; Systemic Risk.

I. INTRODUCTION

Artificial intelligence (“AI”) has become increasingly integrated into securities and capital markets, with applications ranging from investment research and portfolio management to algorithmic trading, robo-advisory services, risk management, compliance and market surveillance.¹ The growing use of these technologies reflects the ability of AI systems to process large volumes of information and perform analytical tasks at a speed and scale that can complement or, in some functions, exceed conventional human capabilities.²

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¹ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

² Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes and Manuals No. 2025/016 (2025).

The adoption of AI can generate significant economic benefits for financial markets. AI-assisted systems can reduce information-processing costs, automate repetitive functions, improve analytical efficiency and potentially expand access to financial services.³ AI can also assist financial institutions and supervisory authorities in identifying patterns within large datasets, thereby supporting risk management, compliance and market-surveillance activities.⁴

However, these benefits are accompanied by significant regulatory challenges. AI systems may produce inaccurate or unreliable outputs, particularly where their underlying data or models are deficient.⁵ The increasing complexity of AI systems can also make their decisions difficult to explain or evaluate, creating challenges for investors, financial institutions and regulators.⁶ In investor-facing applications, excessive reliance on automated recommendations may further increase the risk that investors make decisions without adequately understanding the limitations of the technology.

AI-related risks can also extend beyond individual investors. IOSCO has identified concerns including data and model risks, cybersecurity threats, concentration and third-party dependencies, malicious use, inadequate human oversight and the possibility that widespread AI adoption could contribute to broader financial-stability risks.⁷

These developments create a fundamental regulatory trade-off. Stronger regulation can reduce expected losses arising from technological failures, misconduct and information asymmetries, but excessive regulatory requirements may increase compliance costs and discourage beneficial innovation.⁸ The central regulatory question is therefore not whether AI should be permitted in securities markets, but how legal and regulatory frameworks can capture the efficiency and innovation benefits of AI while controlling the risks that its use creates.

This research addresses that question through a comparative Law and Economics analysis of investor protection, market integrity and financial innovation, examining the regulatory approaches of the European Union, United States, United Kingdom and India. The objective is to identify regulatory principles that can provide effective protection against AI-related harms without unnecessarily restricting technological development in securities markets.

Problem Statement

The rapid integration of artificial intelligence into securities markets has created a regulatory gap between the capabilities of emerging technologies and the legal mechanisms designed to govern them. Existing securities regulation is generally based on principles such as disclosure, fairness, market integrity, fiduciary responsibility and accountability, but the application of these principles to increasingly autonomous and complex AI systems presents new challenges.

One of the principal difficulties arises from information asymmetry. Investors may be unable to evaluate how an AI system reaches a recommendation, whether the underlying data is reliable, or whether the system contains material biases. This asymmetry can become particularly significant where retail investors rely upon AI-generated investment information without possessing the technical expertise necessary to assess its reliability.

³ Id.

⁴ IOSCO, *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, supra note 1.

⁵ Lim, Singh & Stobo, supra note 2.

⁶ IOSCO, *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, supra note 1.

⁷ Id.

⁸ See Lim, Singh & Stobo, supra note 2.

A second concern is accountability. Where an AI system contributes to an investment decision, trading strategy or compliance failure, responsibility may become difficult to allocate between the financial institution using the system, the technology provider developing it and other parties supplying data or infrastructure. Traditional regulatory frameworks may therefore face difficulty determining who should bear the consequences of AI-related harm.

AI may also create risks to market integrity and financial stability. Automated systems can operate at high speed and scale, while common models, datasets or technological providers may create correlations between otherwise independent market participants. Consequently, a technological or behavioural failure may potentially affect multiple institutions simultaneously.⁹

At the same time, imposing extensive regulatory requirements on every use of AI could generate significant compliance costs and discourage beneficial financial innovation. The regulatory problem is therefore one of optimal intervention: regulation must be sufficiently strong to address material risks while remaining proportionate to the potential harm involved.

The central problem addressed by this research is consequently the absence of a clearly established, economically efficient framework for regulating AI-driven securities markets that simultaneously protects investors, preserves market integrity and encourages responsible financial innovation.

Research Questions

This research seeks to answer the following questions:

1. What are the principal legal and economic risks arising from the use of artificial intelligence in securities markets, particularly in relation to investor protection, market integrity and financial stability?
2. How do the regulatory frameworks of the European Union, United States, United Kingdom and India address the risks associated with AI-driven securities markets?
3. How effectively do these regulatory approaches balance investor protection and market integrity against the costs of regulation and the need to encourage financial innovation?
4. From a Law and Economics perspective, what regulatory principles can provide an economically efficient framework for governing AI-driven securities markets?
5. What regulatory measures should India adopt to strengthen investor protection and market integrity while preserving the benefits of AI-driven financial innovation?

Objectives and Scope

The primary objective of this research is to examine how artificial intelligence can be regulated in securities markets while maintaining an appropriate balance between investor protection, market integrity and financial innovation.

The specific objectives are:

1. To identify the principal legal, economic and systemic risks associated with the use of AI in securities markets.
2. To examine the existing regulatory approaches governing AI-driven securities activities in the European Union, United States, United Kingdom and India.

⁹ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

3. To comparatively evaluate these approaches from a Law and Economics perspective, with particular attention to regulatory costs, incentives, information asymmetry, accountability and market efficiency.
4. To determine which regulatory mechanisms are most effective in addressing AI-related risks without unnecessarily restricting technological innovation.
5. To develop practical recommendations for strengthening India's regulatory framework for AI-driven securities markets.

Scope

The research focuses specifically on AI applications connected with securities and capital-market activities. It considers applications such as algorithmic trading, investment research, robo-advisory services, portfolio management, risk management, compliance and market surveillance.

The research does not attempt to examine AI regulation across every sector of the economy. Similarly, it does not undertake a comprehensive examination of cryptocurrency regulation, general data-protection law or AI applications unrelated to financial markets, except where those areas directly affect the regulation of AI-driven securities activities.

Geographically, the study focuses on the European Union, United States, United Kingdom and India. These jurisdictions have been selected because they represent different regulatory approaches and provide a useful basis for evaluating alternative methods of governing AI in financial markets.

The ultimate focus of the research is India. The comparative analysis is therefore used not merely to describe foreign regulatory frameworks but to identify regulatory principles and mechanisms that can be appropriately adapted to the Indian securities-market context.

Research Methodology

This research adopts a doctrinal, comparative and interdisciplinary methodology, combining legal analysis with principles derived from Law and Economics.

The doctrinal component examines primary legal and regulatory materials governing artificial intelligence and securities markets, including legislation, regulations, regulatory guidance, consultation papers and relevant institutional publications. These materials are used to determine the existing legal obligations applicable to AI-driven activities and the regulatory mechanisms adopted by different jurisdictions.

The comparative component examines the approaches of the European Union, United States, United Kingdom and India. The jurisdictions are compared according to common criteria, including investor protection, market integrity, accountability, transparency, systemic-risk management and the treatment of financial innovation.

The research also adopts a Law and Economics perspective to evaluate the costs and benefits of regulatory intervention. Particular attention is given to information asymmetry, externalities, compliance costs, incentives, regulatory arbitrage and the potential effects of regulation on innovation and market efficiency.

Primary sources are supplemented by academic literature, institutional reports and other authoritative secondary materials where necessary to provide economic and contextual analysis.

The research is primarily qualitative. Rather than relying upon statistical testing, it evaluates legal rules and regulatory approaches through structured comparative analysis and assesses whether they provide a proportionate response to the risks created by AI-driven securities activities.

Significance of the Study

The significance of this research lies in addressing the emerging intersection between artificial intelligence, securities regulation and financial-market economics. While AI can improve efficiency and information processing in capital markets, its increasing use also raises questions concerning investor protection, accountability, market integrity and systemic risk.

The study is particularly significant for India, where the securities market is undergoing increasing technological transformation. A carefully designed regulatory framework can help address AI-related risks without unnecessarily restricting technological development or increasing regulatory burdens beyond what is economically justified.

The comparative approach also provides value by examining how different regulatory systems respond to similar technological challenges. Rather than advocating the adoption of any foreign framework in its entirety, the research seeks to identify principles that can be adapted to India's institutional and market conditions.

From a Law and Economics perspective, the study contributes by examining AI regulation not only as a question of legal compliance but also as a question of regulatory efficiency, incentives and allocation of risk. Its objective is therefore to contribute to the development of a regulatory approach that protects market participants while preserving the economic benefits of responsible financial innovation.

II. CONCEPTUAL AND THEORETICAL FRAMEWORK

Understanding AI in Securities Markets

Artificial intelligence ("AI") is a broad technological category encompassing systems capable of performing functions such as analysing data, identifying patterns, generating predictions and supporting decision-making. In securities markets, its significance arises from the increasing ability of these systems to process large volumes of financial information and influence activities across the investment and trading process.¹⁰

The use of AI in capital markets is not entirely new. Machine-learning and other advanced analytical techniques have been used in financial markets for many years, including in algorithmic trading and investment analysis.¹¹ More recent developments, particularly generative AI, have expanded the range of potential applications and increased the complexity of the systems being incorporated into financial-market activities.¹²

AI can now be applied across multiple stages of the securities-market ecosystem. Current and emerging applications include portfolio management, trading and investment strategies, investment advisory services, robo-advisory, risk management, trade execution, post-trade processes and the

¹⁰ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025). The authors describe AI's ability to analyse large amounts of data, identify patterns and make rapid decisions in capital markets.

¹¹ Id. The IMF notes that machine learning in capital markets is not new and that algorithmic trading has existed for several decades.

¹² Id. The IMF distinguishes established AI/ML applications from more recent developments in generative AI and notes the increasing complexity of underlying models.

detection of unusual trading activity.¹³ Financial institutions are also increasingly using AI for internal functions such as task automation, productivity enhancement and risk management.¹⁴ The regulatory significance of AI depends substantially upon what function the system performs and how its output is used. An AI system employed for an internal administrative task presents a different regulatory profile from one that generates investment recommendations, determines portfolio allocations or contributes to trading decisions. The potential consequences of an AI system therefore depend not merely upon the existence of the technology but upon its degree of influence over financial decisions and the persons or markets affected by those decisions. This functional approach is important for developing proportionate regulation. Treating every application of AI as presenting an identical level of risk could impose unnecessary regulatory costs on relatively low-risk uses while failing to adequately address applications capable of producing significant investor or market harm. Regulation should therefore consider factors such as the nature of the activity, the degree of human oversight, the scale of potential harm and the extent to which the relevant AI system affects investors or market outcomes.

Accordingly, this research approaches AI in securities markets not merely as a technological development but as a legal and economic phenomenon. Its regulatory significance emerges from the interaction between technological capabilities, financial incentives, information asymmetry and existing securities-market obligations. This conceptual foundation is necessary for analysing the specific applications, risks and regulatory responses examined in the subsequent chapters.

Applications of AI in Securities Markets

AI is being applied across multiple functions within the securities-market ecosystem, ranging from investment decision-making and trading to compliance, risk management and market surveillance. The nature of these applications differs considerably, and their regulatory implications depend on the function performed and the extent to which AI influences financial decisions.¹⁵

One significant application is investment research and analysis. AI systems can process large volumes of structured and unstructured information, including financial data, corporate disclosures and other market information, to assist analysts in identifying patterns and generating insights.¹⁶ Such applications may increase the speed and scale of information processing, but they also create questions concerning the accuracy and reliability of AI-generated outputs.

AI is also increasingly used in algorithmic trading and investment strategies. Machine-learning systems can analyse market information and contribute to trading decisions, while automated systems can execute transactions at speeds that would be difficult to achieve through manual intervention.¹⁷ The increased automation of trading can improve efficiency, but interactions among

¹³ Id. The IMF identifies applications across portfolio management, trading and investment strategies, investment advisory services, robo-advisory, asset management, trade execution, post-trade settlement and trade-anomaly detection.

¹⁴ Id. The IMF notes that firms are using AI for internal operations, including task automation, productivity enhancement and risk management.

¹⁵ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

¹⁶ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025).

¹⁷ Id. The IMF notes that algorithmic trading has existed for several decades and that AI-related developments are increasingly affecting trading and investment strategies.

multiple AI-driven strategies may also create risks that are difficult for individual market participants to anticipate.

Another important application is investment advisory and portfolio management. AI can support robo-advisory services, portfolio recommendations and personalised investment strategies by analysing information about clients and financial markets.¹⁸ These applications may improve accessibility and reduce the cost of certain advisory services, but they also raise questions about suitability, investor understanding and the responsibility of firms when automated recommendations cause harm.

AI is additionally being deployed in risk management, compliance and market surveillance. Financial institutions use AI to support internal risk-management processes, while regulators and market participants can employ AI-based tools to identify unusual transactions and assist with compliance functions, including anti-money-laundering and counter-terrorist-financing activities.¹⁹ The breadth of these applications demonstrates that AI regulation cannot be confined to a single category of financial activity. The same technology may create very different legal and economic consequences depending on whether it is used to analyse information, advise an investor, execute a transaction or monitor market conduct. This functional diversity therefore supports a regulatory approach that assesses AI applications according to their potential impact and associated risks, rather than regulating the technology in isolation.

Investor Protection and Information Asymmetry

Investor protection is particularly important in securities markets because differences in information and analytical capabilities can place retail investors at a disadvantage compared with sophisticated market participants. AI can influence this relationship by changing both the quantity of information available to investors and the ability of different market participants to process that information.

AI can potentially reduce information asymmetry by enabling faster processing and analysis of large quantities of financial information. At the same time, unequal access to advanced technologies and alternative datasets may create new informational advantages for institutional investors and technologically sophisticated firms. The IMF has identified concerns that the use of alternative datasets in investment decisions may raise issues of market fairness and information asymmetry, particularly where institutional investors possess information that is not equally available to retail participants.²⁰

A further concern arises when investors interact directly with AI-based systems. An investor may receive an automated recommendation without being able to understand the information, assumptions or analytical process underlying the output. This can make it more difficult for the investor to independently assess whether a recommendation is reliable or appropriate.

The issue is particularly significant in AI-assisted investment advisory and portfolio-management services. AI may expand access to investment advice and reduce certain costs, but automated

¹⁸ Id. The IMF identifies AI applications in investment advisory services, robo-advisory, portfolio management and asset management.

¹⁹ IOSCO, *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, supra note 1.

²⁰ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025) (discussing alternative datasets, market fairness, and information asymmetry between institutional and retail investors).

systems do not eliminate the responsibilities that arise from the relationship between an intermediary and its client. The IMF specifically notes that client-facing AI applications must take into account the fiduciary nature of the intermediary-investor relationship.²¹

From a Law and Economics perspective, these circumstances create a potential justification for regulatory intervention where market participants cannot adequately protect themselves against information disadvantages. Disclosure requirements, supervisory controls and accountability mechanisms can reduce the expected costs of investor harm. However, regulation also imposes compliance costs, meaning that the appropriate response should be proportionate to the magnitude and likelihood of the underlying risk.

The central concern is therefore not simply whether AI increases or decreases information asymmetry. Rather, it is whether AI changes the distribution of informational advantages in securities markets in ways that can undermine fair participation and investor protection.

Market Integrity and Systemic Risk

Market integrity requires securities markets to function in a fair, orderly and reliable manner, without being undermined by manipulation or other practices that distort market outcomes. The increasing use of AI makes this objective particularly important because automated systems can influence trading and surveillance activities at high speed and across large volumes of transactions.

AI can contribute positively to market integrity by assisting firms and regulators in identifying unusual trading patterns and potential misconduct. IOSCO reports that market participants are using AI for surveillance and fraud detection, including the identification of patterns and anomalies and the monitoring of transactions in real time.²²

At the same time, AI-driven trading can introduce new risks to market functioning. The IMF identifies concerns including increased market speed and volatility, particularly where AI trading strategies become highly correlated, as well as risks of market manipulation.²³

A further concern is concentration risk. Increased AI adoption may result in the concentration of systems and models among key market participants and providers of capital-market infrastructure.²⁴ Dependence upon common technological providers can therefore create vulnerabilities if a significant provider experiences an operational, technological or cybersecurity failure.

These risks demonstrate that AI regulation cannot be considered solely from the perspective of individual investor protection. A technological system that appears efficient for an individual institution may nevertheless create externalities when widely adopted across the market. The actions of one participant may consequently affect other market participants who did not contribute to the underlying technological risk.

From a Law and Economics perspective, such externalities provide an important justification for regulatory intervention. Individual firms may have incentives to adopt efficient AI systems while

²¹ Id. (noting that client-facing AI applications need to account for the fiduciary nature of the relationship between intermediaries and investors).

²² International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

²³ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025).

²⁴ Id.

having insufficient incentives to account fully for risks imposed on the wider market. Regulatory requirements concerning governance, monitoring, risk management and human oversight can therefore seek to address risks that private decision-makers may otherwise have limited incentives to internalise.

The challenge is consequently to preserve the efficiency benefits of AI while ensuring that technological interdependence does not undermine market integrity or broader financial stability.

Financial Innovation and Regulatory Trade-offs

AI has the potential to generate significant efficiency gains in securities markets. By processing large quantities of information, automating tasks and supporting investment and trading decisions, AI can reduce certain operational costs and improve the speed and scale of financial activities. The IMF notes that AI adoption may contribute to greater efficiency, improved liquidity and enhanced risk management in capital markets.²⁵

These potential benefits create an important regulatory consideration. Regulation can reduce the probability and expected cost of investor harm, misconduct and technological failures, but regulatory requirements themselves impose costs on regulated entities. Excessive or poorly targeted regulation may therefore discourage investment in new technologies or create barriers for smaller firms that lack the resources to satisfy complex compliance requirements.

The issue is particularly important because AI adoption is not uniform across financial markets or jurisdictions. The IMF identifies significant differences in AI adoption and regulatory capacity between advanced economies and emerging and developing economies.²⁶ A regulatory framework designed for highly sophisticated markets may therefore impose disproportionate burdens when applied without consideration of the technological and institutional capacity of a particular jurisdiction.

At the same time, the pursuit of innovation cannot justify the absence of effective safeguards. Where AI creates risks that individual market participants cannot adequately internalise, regulatory intervention may be necessary to address externalities and preserve confidence in financial markets. The appropriate regulatory objective is therefore not maximum regulation or minimum regulation, but proportionate regulation. The regulatory framework should target material risks while preserving sufficient flexibility for beneficial technological experimentation. This requires regulators to consider the nature of the AI application, the scale and likelihood of potential harm, the availability of human oversight and the costs that regulatory intervention imposes on innovation.

From a Law and Economics perspective, this balance is central to determining whether a regulatory intervention improves overall welfare. The subsequent comparative analysis will therefore examine how different jurisdictions attempt to reconcile investor protection and market integrity with the economic value of financial innovation.

²⁵ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025) (discussing AI's potential to enhance market efficiency, liquidity and risk management).

²⁶ Id. (discussing the heterogeneous adoption of AI across jurisdictions and differences in regulatory capacity, particularly between advanced economies and emerging market and developing economies).

Regulatory Theory: Risk-Based and Proportionate Regulation

The regulatory challenges created by AI in securities markets raise a broader question concerning how regulation should be designed. A central principle is that regulatory intervention should be proportionate to the nature and magnitude of the risks associated with a particular activity. This approach is particularly relevant to AI because its applications range from relatively low-risk internal functions to systems that can directly influence investment decisions and market activity.

A risk-based approach focuses regulatory attention on activities that present greater potential for investor harm, market disruption or financial instability. Rather than imposing identical requirements on every use of AI, regulators can consider factors such as the function performed by the system, the degree of autonomy involved, the potential scale of harm and the extent of human oversight.

This approach is consistent with the evolving international regulatory discussion. IOSCO has observed that regulatory responses to AI are developing in different ways, with some jurisdictions applying existing regulatory frameworks to AI-related activities while others consider additional or AI-specific measures.²⁷ This variation reflects the difficulty of designing rules that address emerging technological risks without unnecessarily restricting legitimate uses of AI.

Proportionality is also important because AI adoption differs substantially across markets and jurisdictions. The IMF notes that AI adoption remains heterogeneous and that the implications of AI can vary according to a jurisdiction's regulatory capacity and stage of capital-market development.²⁸

A proportionate framework should therefore distinguish between risk created by the technology and risk created by its particular use. The same AI model may require limited regulatory intervention when used for an internal administrative task but substantially stronger controls when it determines investment recommendations or executes trades on behalf of clients.

From a Law and Economics perspective, risk-based regulation can help minimise unnecessary regulatory costs while directing supervisory resources toward activities where the expected social costs of failure are greater. It therefore provides an important theoretical foundation for the comparative analysis undertaken in this research.

Regulatory Approaches to AI Governance

AI governance in securities markets involves more than regulating the technology itself. It concerns the allocation of responsibility, oversight of AI systems, management of model and data risks, third-party dependencies, human oversight and the ability of regulators to understand how AI is being used by market participants. IOSCO identifies governance, model and data considerations, concentration and third-party dependency, and human-AI interaction among the principal areas requiring regulatory attention.²⁹

²⁷ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025) (discussing the evolving regulatory responses of IOSCO member jurisdictions to AI use in financial markets).

²⁸ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025) (noting the heterogeneous adoption of AI across jurisdictions and differences in regulatory capacity and capital-market development).

²⁹ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

One possible approach is to rely primarily on existing securities regulation. Under this model, existing obligations relating to conduct, suitability, disclosure, risk management and market integrity continue to apply when regulated entities use AI. This approach has the advantage of technological neutrality and avoids creating overlapping regulatory regimes. IOSCO's review indicates that some jurisdictions have adopted or considered this approach, while others are developing additional measures to address AI-specific risks.³⁰

A second approach involves developing AI-specific regulatory requirements. Such requirements may address matters that existing securities rules do not sufficiently capture, including model governance, testing and validation, explainability, data quality, record-keeping and human oversight. The advantage of this approach is that it can address risks arising specifically from AI systems; however, highly prescriptive rules may become outdated as the technology develops.

A third possibility is a hybrid or principles-based approach, combining existing securities obligations with targeted AI-specific requirements. Such an approach can preserve the flexibility of existing regulation while imposing additional safeguards where the use of AI creates material risks.

The appropriate model may also depend upon the role performed by the AI system. A regulatory framework can distinguish between internal uses, decision-support systems and client-facing or autonomous applications, applying stronger requirements where potential consequences for investors or markets are greater.

This suggests that effective AI governance should be risk-sensitive, technologically adaptable and responsibility-oriented. The comparative chapters will examine how the selected jurisdictions translate these principles into concrete regulatory requirements.

Governance, Accountability and Human Oversight

Effective governance is particularly important where AI systems are used in securities-market activities because responsibility for the system cannot be separated from the consequences of its use. IOSCO identifies accountability, risk management and governance, data and model considerations, and human oversight as important elements of responsible AI use in financial markets.³¹

Accountability requires clear allocation of responsibility among the financial institution using an AI system, its relevant personnel, technology providers and other parties involved in its development or operation. IOSCO notes that firms should establish clear roles and responsibilities for AI use, including responsibility for risk management and for the impacts and errors of AI systems.³²

Human oversight is particularly significant where AI contributes directly to investment or trading decisions. IOSCO's review identifies human oversight as a principle under which AI should augment, rather than replace, human decision-making and judgment.³³

Governance should also address the reliability, robustness and resilience of AI systems. Financial institutions need mechanisms for monitoring whether systems continue to perform as intended and

³⁰ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025).

³¹ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

³² Id.

³³ Id.

for responding when models produce unexpected or erroneous outputs. IOSCO identifies reliability, robustness and resilience as relevant principles for AI systems used in financial services.³⁴

From a Law and Economics perspective, governance and accountability mechanisms can reduce moral hazard by ensuring that firms cannot externalise the consequences of poorly managed AI systems. Clear responsibility can also create incentives for firms to invest in appropriate testing, monitoring and risk controls.

Human oversight, however, should not be understood as requiring a human to manually review every AI-generated output. The appropriate degree of oversight should depend upon the nature, complexity and potential consequences of the AI application. Higher-risk applications may justify stronger intervention and monitoring, while lower-risk uses may require less intensive supervision.

The objective should therefore be to establish meaningful human accountability rather than merely formal human involvement. This principle will be important when comparing how the EU, United States, United Kingdom and India allocate responsibility for AI-driven activities in securities markets.

Transparency, Explainability and Disclosure

Transparency is an important regulatory consideration where AI systems influence decisions in securities markets. Investors and regulators may need sufficient information to understand the role played by an AI system, the risks associated with its use and the controls established by the responsible firm. IOSCO identifies transparency and explainability among the important considerations arising from the use of AI in capital markets.³⁵

Explainability presents a particular challenge because some AI and machine-learning systems can be difficult for users and supervisors to interpret. The IMF notes that a lack of interpretability or auditability, combined with the use of opaque models, can make it difficult for firms and supervisors to predict how AI-directed trading strategies may affect markets.³⁶

However, complete disclosure of an AI system's underlying technology may not always be appropriate. Excessive disclosure of proprietary model architectures, training data or other sensitive information could expose commercially valuable information or create additional risks. The regulatory objective should therefore be to ensure meaningful transparency rather than requiring disclosure of every technical feature of an AI system.

Disclosure may instead focus on matters relevant to investors and regulators, such as the use of AI, the nature of its role in a financial service, significant limitations and risks, and the mechanisms through which the system is monitored and controlled. This allows transparency to serve its regulatory purpose without unnecessarily requiring firms to reveal commercially sensitive technical information.

³⁴ Id.

³⁵ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

³⁶ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025).

From a Law and Economics perspective, transparency can reduce information asymmetry and improve accountability, but disclosure requirements also impose costs. The optimal level of disclosure should therefore depend upon the information's usefulness to the affected party and the cost of producing and communicating it.

This balance is particularly important where AI-generated outputs directly influence retail investors. A disclosure that merely states that AI is being used may provide little practical assistance if investors cannot understand the significance of that use. Effective transparency must therefore provide information that is sufficiently meaningful to support informed decision-making and effective supervision.

Law and Economics Framework for AI Regulation

The Law and Economics approach provides the theoretical foundation for evaluating whether a particular regulatory intervention produces benefits that justify its associated costs. In the context of AI-driven securities markets, this requires examining not only whether a regulatory rule is legally enforceable, but also whether it creates appropriate incentives for financial institutions, technology providers, investors and regulators.

A central consideration is information asymmetry. Where firms possess substantially greater knowledge about an AI system than investors or regulators, market participants may be unable to accurately assess the risks associated with its use. Regulatory requirements concerning disclosure, documentation and oversight can therefore reduce informational disadvantages and improve decision-making.

A second consideration is externalities. An individual firm's use of AI may generate risks that extend beyond the firm itself. For example, widespread dependence on common AI models, infrastructure or third-party providers may create vulnerabilities affecting multiple market participants. The IMF has identified concentration of AI systems and models among key market participants and infrastructure providers as a potential source of financial-sector risk.³⁷

A third consideration is regulatory cost. Compliance requirements consume financial and organisational resources, and overly prescriptive regulation may discourage beneficial innovation. Regulation should therefore be targeted towards risks where intervention is likely to generate greater social benefits than the costs it imposes.

This framework also highlights the importance of incentive design. If firms bear the consequences of AI-related failures only partially, they may have insufficient incentives to invest in robust testing, monitoring and governance. Appropriate liability, supervisory and accountability mechanisms can alter these incentives by making firms internalise a greater proportion of the risks created by their technological choices.

The Law and Economics perspective therefore provides a basis for evaluating the central regulatory trade-off of this research: how to minimise the social costs of AI-related market failures while preserving the efficiency and innovation benefits generated by AI.

Conceptual Synthesis

³⁷ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025).

The preceding discussion establishes that the regulation of AI in securities markets cannot be understood through a single regulatory objective. AI can simultaneously affect investor protection, market integrity, financial stability and financial innovation, creating circumstances in which regulatory objectives may complement one another in some situations but conflict in others. IOSCO identifies investor protection, market integrity and financial stability as central considerations in assessing the implications of AI in capital markets.³⁸

The conceptual framework developed in this chapter therefore rests on four interconnected considerations. First, information asymmetry may justify intervention where investors or regulators cannot adequately evaluate AI-generated outputs or the risks associated with their use. Second, externalities and systemic risks may arise where AI-related failures or technological dependencies affect participants beyond the institution adopting the technology. The IMF has identified concentration, third-party dependencies, correlated AI trading strategies and other channels through which AI adoption may create broader financial-sector risks.³⁹

Third, regulation must account for incentives and accountability. Firms should have appropriate incentives to test, monitor and govern AI systems rather than transferring the consequences of technological failures to investors or the wider market. Fourth, regulatory intervention must consider the cost of regulation itself, since excessive or poorly targeted requirements may reduce the efficiency and innovation benefits that AI can generate.

These considerations lead to the central theoretical proposition of this research: effective AI regulation should seek to minimise the expected social costs of AI-related market failures while preserving the legitimate efficiency and innovation benefits of the technology. This requires a regulatory framework that is risk-sensitive, proportionate and capable of adapting to technological change.

The framework developed here provides the basis for the comparative analysis that follows. The next chapter therefore moves from the conceptual foundations of AI regulation to the specific legal, economic and systemic risks associated with AI-driven securities markets.

III. RISKS AND REGULATORY CHALLENGES OF AI-DRIVEN SECURITIES MARKETS

Model Risk, Reliability and Accuracy

One of the principal risks associated with the use of AI in securities markets is model risk. AI systems may generate outputs that are inaccurate, unreliable or unsuitable for the circumstances in which they are used. This risk is particularly important where AI outputs influence investment recommendations, trading decisions, risk assessments or other activities capable of producing financial consequences.

AI systems depend heavily upon the quality of their underlying data and the assumptions incorporated into their models. Errors, incompleteness or limitations in training data can therefore

³⁸ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

³⁹ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025).

affect the reliability of the resulting outputs. IOSCO identifies AI model and data considerations among the principal risks reported by financial-market participants using AI.⁴⁰

The problem can become more difficult where AI systems are complex or difficult to interpret. A financial institution may be able to observe the output produced by a system without being able to identify precisely why that output was generated. This can complicate the detection of errors and make it more difficult for firms and regulators to determine whether an AI system is operating as intended.

Model risk is particularly significant in securities markets because financial decisions are often made under conditions of uncertainty and can have immediate economic consequences. An erroneous AI-generated signal may contribute to an inappropriate investment recommendation or trading decision, while repeated errors across multiple transactions may amplify the resulting harm.

The economic significance of model risk extends beyond the direct loss suffered by an individual investor. Where firms rely upon similar models, datasets or technological providers, errors may become correlated across market participants. The resulting concentration of technological dependence can increase the potential scale of a failure.

Effective governance therefore requires firms to undertake appropriate testing, validation, monitoring and review of AI systems. The objective is not to eliminate every possibility of error which would be unrealistic but to ensure that material risks are identified and controlled before they generate disproportionate harm.

From a Law and Economics perspective, model-risk regulation is justified where individual firms may not otherwise bear the full social costs associated with AI failures. The regulatory challenge is to establish controls that meaningfully reduce expected harm without imposing disproportionate costs on legitimate technological innovation.

Data Quality, Bias and Data Drift

The effectiveness of an AI system depends substantially upon the quality and suitability of the data on which it is trained and operated. In securities markets, poor-quality, incomplete, inaccurate or insufficiently representative data can therefore produce unreliable outputs and adversely affect investment, trading and risk-management decisions. IOSCO identifies data quality, data drift and data bias among the principal data-related risks associated with AI use in capital markets.⁴¹

Data bias may arise where the datasets used to train or operate an AI system are not sufficiently diverse or representative. Such bias can influence the outputs generated by the system and may produce outcomes that are systematically disadvantageous to particular groups of investors or market participants. IOSCO specifically identifies insufficiently diverse or representative datasets as a potential source of unfair bias.⁴²

⁴⁰ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025). IOSCO identifies “AI model and data considerations” among the risks most commonly cited by market participants.

⁴¹ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025). IOSCO reports that its survey respondents identified data quality, data drift and data bias among the principal data-related risks associated with AI.

⁴² Id.

A related concern is data drift. Data that accurately represented market conditions when an AI model was developed may become less representative as economic conditions, investor behaviour or market structures change. IOSCO identifies data drift as a risk where training data, and consequently a model trained on that data, becomes unrepresentative over time.⁴³

These problems are particularly significant in securities markets because financial conditions are dynamic. A model that performs effectively under one set of market conditions may generate less reliable results when market behaviour changes. The IMF similarly notes that poor data quality or biases in training data can result in unreliable outcomes or biased results.⁴⁴

Data-related risks can consequently affect both investor protection and market integrity. An inaccurate recommendation may directly harm an investor, while widespread reliance on flawed data may produce correlated decisions across multiple market participants.

From a regulatory perspective, this creates a need for appropriate data governance, including procedures for assessing data quality, identifying bias and monitoring whether data remains appropriate for the intended use of an AI system. Such controls should be proportionate to the significance and potential consequences of the AI application.

From a Law and Economics perspective, data-quality regulation can reduce the expected social cost of erroneous AI outputs. However, requiring firms to satisfy unnecessarily burdensome data-management requirements may increase compliance costs without producing equivalent benefits. The regulatory objective should therefore be to ensure sufficient data reliability and integrity for the level of risk associated with the relevant AI application.

Cybersecurity, Data Manipulation and Privacy Risks

The increasing integration of AI into securities markets creates cybersecurity risks that extend beyond the conventional risks associated with financial technology. AI systems depend upon data, software, computing infrastructure and external technology providers, creating multiple points at which malicious interference may affect the integrity of an AI-enabled financial process. The IMF identifies new cybersecurity threats, including the possibility of data-manipulation attacks, among the risks associated with increasing AI adoption in capital markets.⁴⁵

One significant concern is data manipulation. If an attacker alters data used by an AI system, the resulting model output may become unreliable even where the underlying model itself has not been compromised. The IMF identifies unstructured-data manipulation as a potential source of risks involving data privacy and AI-powered social-engineering misconduct.⁴⁶

AI systems may also process substantial quantities of personal, confidential or commercially sensitive information. This creates privacy concerns, particularly where alternative datasets are incorporated into investment analysis or other financial decisions. The IMF identifies data privacy as one of the risks requiring consideration as AI adoption expands in securities markets.⁴⁷

⁴³ Id.

⁴⁴ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025). The IMF notes that poor data quality and biases in training data can lead to unreliable or biased outcomes.

⁴⁵ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025), identifying new cybersecurity threats, including data-manipulation attacks, among AI-related risks.

⁴⁶ Id., discussing unstructured-data manipulation and associated data-privacy and AI-powered social-engineering risks.

⁴⁷ Id., identifying data privacy as a significant AI-related risk in securities markets.

The problem is further complicated by third-party and infrastructure dependencies. Financial institutions may rely on external providers for cloud computing, data aggregation, AI models or other technological services. IOSCO identifies concentration, outsourcing and third-party dependency as significant risks, including the possibility that vulnerabilities associated with a key provider could propagate across multiple financial institutions.⁴⁸

These risks have an important economic dimension. A cybersecurity failure affecting one institution may create direct losses for that institution, whereas a vulnerability shared across several institutions or critical infrastructure providers can generate wider externalities. The private incentives of an individual firm may therefore be insufficient to account for the broader consequences of inadequate cybersecurity.

Regulatory intervention may consequently require firms to implement appropriate cybersecurity controls, protect sensitive data, monitor third-party dependencies and maintain mechanisms for responding to technological failures or attacks. However, these requirements must remain proportionate because cybersecurity controls themselves impose costs and cannot eliminate technological risk entirely.

The central regulatory challenge is therefore to ensure that AI adoption does not create new vulnerabilities capable of undermining the confidentiality, integrity and reliability of securities-market systems.

Explainability, Accountability and the Black-Box Problem

The complexity of certain AI systems can make it difficult for investors, financial institutions and regulators to understand how particular outputs are generated. This “black-box” problem is significant in securities markets because an AI-generated recommendation, risk assessment or trading decision may have financial consequences even when the reasoning underlying the output is difficult to interpret. IOSCO identifies transparency and explainability as important considerations in the use of AI in capital markets.⁴⁹

Limited explainability can also complicate accountability. Where a financial institution cannot readily determine why an AI system produced a particular output, identifying the source of an error and assigning responsibility may become more difficult. The IMF identifies the lack of interpretability and auditability of AI systems as a potential regulatory concern because opaque models can make it difficult to understand and monitor their effects on financial markets.⁵⁰

However, explainability does not necessarily require disclosure of every technical feature of an AI model. Financial institutions may have legitimate interests in protecting proprietary models, algorithms and commercially sensitive information. The regulatory objective should instead be to ensure sufficient transparency for effective supervision, risk management and investor protection.

⁴⁸ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025, discussing concentration, outsourcing and third-party dependency risks associated with AI.

⁴⁹ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

⁵⁰ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025).

This creates a regulatory trade-off. Excessive disclosure requirements may impose unnecessary costs and weaken incentives to develop innovative systems, while insufficient transparency may prevent investors and regulators from identifying material risks. A proportionate approach should therefore focus on meaningful explainability and accountability commensurate with the risk and function of the AI system.

From a Law and Economics perspective, explainability can reduce information asymmetry and improve incentives for firms to maintain reliable systems. It is therefore not merely a question of technical transparency, but an instrument through which regulation can reduce the expected costs of AI-related failures.

Market Manipulation, Herding and Systemic Risk

AI can create new opportunities for market manipulation by increasing the speed and scale at which information, trading signals and transactions can be generated. The IMF identifies increased risks of market manipulation associated with AI adoption, including risks arising through fraud and disinformation.⁵¹

A related concern is herding. Where multiple market participants use similar AI models, datasets or analytical approaches, their systems may respond to the same market information in similar ways. IOSCO notes that widespread use of common models and datasets could potentially result in market participants making similar decisions at the same time, although it also recognises that the extent of this risk remains uncertain.⁵²

Such correlation can become particularly significant during periods of market stress. The IMF identifies increased market speed and volatility under stress as a potential financial-stability risk, particularly where AI trading strategies become highly correlated.⁵³ If multiple systems respond simultaneously to the same signal, automated decisions could reinforce price movements rather than independently correcting them.

The economic significance of this risk arises from interconnectedness and externalities. An individual institution may benefit from using a fast and efficient AI strategy while having limited incentives to consider the possibility that similar strategies adopted by other institutions could amplify market-wide instability.

Regulation therefore needs to address not only misconduct by individual market participants but also the collective effects that may emerge from widespread technological adoption. Monitoring of trading behaviour, appropriate market safeguards and supervisory access to relevant information may help identify developing concentrations or correlated strategies.

⁵¹ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025). The paper identifies increased cyber and market-manipulation risks, including risks associated with fraud and disinformation.

⁵² International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025). IOSCO discusses the potential for common models and datasets to produce homogeneous decision-making and increased systemic risk, while noting uncertainty concerning the extent of this risk.

⁵³ Lim, Singh & Stobo, *supra* note 1. The IMF identifies increased market speed and volatility under stress, particularly where AI trading strategies become highly correlated, as a financial-stability risk.

However, these risks should not be treated as evidence that AI necessarily produces systemic instability. AI can also improve liquidity, risk management and market monitoring.⁵⁴ The regulatory challenge is therefore to identify circumstances in which the benefits of automated decision-making are outweighed by the probability and potential severity of correlated market failures.

Third-Party Dependency and Concentration Risk

AI adoption in securities markets increasingly involves dependence on external providers of cloud infrastructure, data, computing capacity and AI models. This creates third-party dependency risk, particularly where several financial institutions rely upon the same providers or technological infrastructure. IOSCO identifies concentration, outsourcing and third-party dependency as significant risks associated with AI use in capital markets.⁵⁵

Concentration can arise at several levels, including technological infrastructure, data aggregation and model provision. IOSCO notes that reliance on a small number of cloud or technology providers can create potential single points of failure, while concentration among data providers can allow data-quality problems to propagate across institutions relying on the same datasets.⁵⁶

The problem becomes more significant where there are limited substitutes for a particular provider. The IMF observes that concentration across hardware, cloud services, software and pre-trained AI models can amplify operational risk, particularly where financial institutions depend heavily on providers that have limited substitutability.⁵⁷

Third-party dependency also creates a potential regulatory-perimeter problem. A securities regulator may directly supervise a financial institution using an AI service while having limited or no direct supervisory authority over the technology provider supplying that service. This can make it more difficult to assess risks that originate outside the regulated firm's immediate organisational boundaries.

From a Law and Economics perspective, concentration creates the possibility of systemic externalities. A technology provider may make decisions based primarily on its own commercial incentives, while a failure affecting a widely used service could impose costs on numerous financial institutions and investors. Regulatory requirements concerning due diligence, contingency planning, contractual safeguards and monitoring can therefore help reduce these externalities.

The objective should not be to eliminate third-party technology use, which could undermine efficiency and innovation. Instead, regulation should ensure that firms adequately understand and manage their critical dependencies, particularly where the failure of a common provider could have consequences extending beyond an individual institution.

Accountability, Liability and Attribution

⁵⁴ International Monetary Fund, *Global Financial Stability Report: Steadying the Course—Uncertainty, Artificial Intelligence, and Financial Stability* (Oct. 2024). The IMF identifies potential benefits of AI for financial stability, including improved risk management and market liquidity.

⁵⁵ International Organization of Securities Commissions (IOSCO), *Artificial Intelligence in Capital Markets: Use Cases, Risks, and Challenges*, CR/01/2025 (Mar. 2025).

⁵⁶ Id.

⁵⁷ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025).

The use of AI creates an important question of who should bear responsibility when an AI-assisted decision causes harm. This question becomes particularly difficult where several actors are involved in the AI lifecycle, including the financial institution using the system, its employees, external technology providers and developers of the underlying model.

Responsibility cannot simply be transferred to the AI system itself. The IMF notes that effective AI governance requires clear ownership and oversight structures, defined roles and responsibilities throughout the AI lifecycle, and mechanisms capable of addressing errors, biases and unintended consequences.⁵⁸

The problem is particularly significant where an AI system operates with substantial autonomy. If a system produces an erroneous investment recommendation or contributes to an inappropriate trading decision, uncertainty concerning responsibility may weaken incentives for firms to properly test and monitor the system.

A regulatory framework should therefore ensure that regulated entities remain accountable for AI systems used in regulated activities, while also appropriately addressing responsibilities arising from third-party technology providers. This does not necessarily require imposing identical liability on every participant. Responsibility should correspond to the degree of control, knowledge and contribution of each relevant actor.

From a Law and Economics perspective, clear attribution is important because liability influences incentives. If firms expect to bear the consequences of AI-related failures, they have stronger incentives to invest in testing, monitoring, human oversight and appropriate risk controls. Conversely, uncertainty concerning liability may encourage firms to externalise risks onto investors or other market participants.

The objective should therefore be to prevent an “accountability gap” in which technological complexity makes it difficult for investors or regulators to identify the party responsible for an AI-driven outcome. Clear governance and responsibility are consequently essential to ensuring that the efficiency benefits of AI do not come at the expense of effective investor protection.

IV. CONCLUSION

The analysis developed in this article demonstrates that the regulatory challenges created by artificial intelligence in securities markets cannot be addressed solely by treating AI as a conventional technological tool. The legal and economic consequences of AI depend substantially on the function performed by the system, the extent of its influence on investment or trading decisions, the degree of human oversight, and the scale of potential harm.

AI may generate efficiency gains through faster information processing, automation, improved risk management and enhanced market surveillance. At the same time, the use of AI may intensify information asymmetry, create model and data risks, introduce cybersecurity and privacy vulnerabilities, complicate explainability and accountability, and generate externalities through correlated strategies and dependence on common technological providers.

⁵⁸ Xiang-Li Lim, Puja Singh & Richard Stobo, *Regulatory Considerations Regarding Accelerated Use of AI in Securities Markets*, IMF Technical Notes & Manuals No. 2025/016 (2025). The authors recommend clear ownership and oversight structures, defined roles and responsibilities throughout the AI lifecycle, validation and monitoring processes, and accountability mechanisms for errors, biases and unintended consequences.

These risks support a regulatory approach that is risk-sensitive and proportionate. Regulation should direct stronger safeguards towards AI applications capable of producing material consequences for investors or market functioning, while avoiding unnecessarily burdensome requirements for lower-risk uses. Clear allocation of responsibility, appropriate testing and monitoring, meaningful transparency, human oversight and management of third-party dependencies are central to such an approach.

From a Law and Economics perspective, the objective is to minimise the expected social costs of AI-related market failures while preserving the legitimate efficiency and innovation benefits of the technology. Regulatory design should therefore account for information asymmetry, externalities, incentives and compliance costs rather than pursuing either maximum or minimum regulation as an end in itself.

For India, the framework developed in this article provides a basis for evaluating how existing securities regulation can respond to AI-driven activities while maintaining investor protection and market integrity. The comparative dimension identified in the research design should be developed through a detailed jurisdiction-specific analysis of the European Union, United States, United Kingdom and India before the article is treated as a complete comparative study.