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ALGORITHMIC TRADING MANIPULATION AND INSIDER TRADING: A CRITICAL ANALYSIS OF REGULATORY GAPS IN INDIA

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ABSTRACT Algorithmic trading has improved execution in securities markets while creating new opportunities for manipulation and misuse of confidential information. This article examines whether Indian securities regulation adequately addresses automated market abuse, focusing on the Securities and Exchange Board of India Act, 1992, the fraudulent and unfair trade practices regulations, and the insider trading regulations. Using doctrinal and comparative analysis, it evaluates judicial principles, retail algorithmic trading reforms and the Jane Street interim proceedings. The analysis distinguishes substantive prohibitions from operational difficulties in identifying deceptive orders, tracing information inputs and attributing responsibility across traders, brokers and technology providers. It finds that existing prohibitions are broadly capable of addressing automated misconduct, but their enforcement requires more granular evidence and coordinated supervision. The article proposes risk based algorithm governance, auditable information provenance, integrated surveillance and differentiated accountability, drawing on European and American regulatory approaches while preserving legitimate market making, arbitrage and technological innovation.

KEYWORDS : Algorithmic Trading; Market Manipulation; Insider Trading; Securities Regulation.

INTRODUCTION

Algorithmic trading uses computer instructions to determine or execute orders. High-frequency trading is a specialised form that relies on low-latency infrastructure. Automation can improve liquidity and execution quality, but its effects vary with market conditions (Hendershott et al., 2011). The legal problem is not speed itself; it is the use of automated systems to distort prices or exploit confidential information. Indian law must distinguish legitimate trading from abuse without treating every cancellation, profitable strategy or technical failure as evidence of fraud.

Objectives and methodology

This article examines the adequacy of Indian prohibitions, identifies enforcement gaps and proposes proportionate reforms. It uses doctrinal analysis of legislation, regulations, circulars and selected judicial decisions, supplemented by a functional comparison with United States and European Union law. The central proposition is that substantive prohibitions are generally technology-neutral, but operational accountability requires refinement. The study is limited to publicly available legal materials, including selected developments through April 2026; it does not estimate the prevalence of misconduct or test statistical hypotheses.

Forms of algorithmic market abuse

Spoofing involves deceptive orders intended to be cancelled rather than executed; layering uses multiple price levels to create misleading market depth. Momentum ignition seeks to induce artificial price movements, while wash trading creates non-genuine activity. Front-running exploits confidential knowledge of substantial impending transactions. Cross-market manipulation may involve trading underlying securities to influence the value of related derivatives. These practices require contextual assessment: cancellations may reflect genuine risk management, and trades that appear uneconomic in isolation may form part of legitimate hedging. Evidence of deception, coordination or other applicable statutory ingredients remains essential.

Indian legal framework

Section 12A of the Securities and Exchange Board of India Act, 1992 prohibits manipulative and deceptive devices and insider trading. Sections 11, 11B and 11C provide supervisory, directional and investigative powers. Regulations 3 and 4 of the SEBI (Prohibition of Fraudulent and Unfair Trade Practices relating to Securities Market) Regulations, 2003 (PFUTP) prohibit fraudulent dealings and manipulation. Regulation 4(2)(q) addresses trading based on non-public information concerning substantial impending transactions. These provisions can reach algorithmic conduct without a separate offence for every trading technique.

Under the SEBI (Prohibition of Insider Trading) Regulations, 2015 (PIT), an insider includes a connected person or a person possessing or having access to unpublished price-sensitive information (UPSI). Regulation 3 restricts communication and procurement of UPSI, subject to specified exceptions; Regulation 4 prohibits trading while in possession of UPSI, subject to prescribed defences. Automated execution does not independently excuse liability. A lawful prediction derived from public data must, however, be distinguished from the ingestion of confidential corporate information. Regulation 5 trading plans are subject to specific conditions and are not equivalent to ordinary automated strategies.

Regulations 3(5) and 3(6) require structured digital databases and preservation of prescribed UPSI-sharing records. Regulation 9A requires institutional controls. These provisions provide a foundation for extending information barriers to shared datasets and automated models. Sections 15G and 15HA of the SEBI Act prescribe monetary penalties; section 24 provides for criminal prosecution. Civil enforcement and criminal proceedings require distinct standards of proof.

Recent regulatory developments

SEBI's February 2025 retail algorithmic trading circular introduces broker oversight, identification of algorithmic orders, exchange approval requirements and empanelment of algorithm providers. Providers of black-box algorithms must register as research analysts and maintain prescribed research documentation (SEBI, 2025d). The September 2025 circular provides a phased implementation schedule (SEBI, 2025a). Existing broker controls also include trading logs, real-time monitoring and notification of algorithm modifications (SEBI, 2025c). These requirements mean that the regulatory gap is not an absence of audit or supervision, but the need for greater consistency and depth across different trading models.

SEBI's February 2026 revision of the order-to-trade ratio framework, effective 6 April 2026, adjusts exemptions for equity options and designated market makers (SEBI, 2026). Such differentiated controls illustrate why order volume alone should not be treated as proof of manipulation.

Judicial and regulatory precedents

In SEBI v. Kishore R. Ajmera (2016), the Supreme Court recognised that coordinated trading may be inferred from cumulative circumstantial evidence. This principle supports analysis of order sequences, timing and repeated patterns. In SEBI v. Kanaiyalal Baldevbhai Patel (2017), the Court recognised that front-running by non-intermediaries could fall within the broad PFUTP prohibitions. SEBI v. Rakhi Trading Private Limited (2018) established the significance of non-genuine derivatives transactions for market integrity. Conversely, Balram Garg v. SEBI (2022) illustrates that suspicious trading and personal relationships alone may be insufficient to establish communication or possession of UPSI. Together, these decisions support evidence-based inference without dispensing with the elements of liability.

The Jane Street interim order of 3 July 2025 examined alleged index manipulation involving underlying securities and derivatives. SEBI directed impounding of approximately Rs. 4,843.57 crore in alleged unlawful gains (SEBI, 2025b). The proceedings illustrate the importance of examining aggregate positions and economic incentives across market segments. The order contains prima facie findings, not a final determination of liability, and does not establish that algorithmic trading itself is unlawful.

Comparative analysis

The European Union combines market-abuse prohibitions under Regulation (EU) No. 596/2014 with organisational requirements under Article 17 of Directive 2014/65/EU (MiFID II). Commission Delegated Regulation (EU) 2017/589 specifies algorithm testing, monitoring and risk controls. In the United States, section 4c(a)(5)(C) of the Commodity Exchange Act expressly prohibits spoofing in covered derivatives markets, while SEC Rule 15c3-5 requires broker-dealer market-access risk controls. These approaches illustrate the value of combining conduct prohibitions with preventive obligations. India can adopt more specific guidance without importing foreign liability standards mechanically.

Findings and regulatory gaps

First, Indian prohibitions are sufficiently broad to capture many automated abuses, but detailed guidance on deceptive order patterns would improve predictability. Second, existing audit requirements may not always capture the precise model version, data inputs and decision context needed to reconstruct adaptive trading behaviour. Third, insider trading controls require technological information barriers in addition to organisational separation. Fourth, broker responsibility does not eliminate the need to differentiate the duties of developers, vendors and traders. Finally, cross-market and cross-border strategies require coordinated analysis of beneficial ownership, economic exposure and related transactions. These are doctrinal findings, not empirically measured enforcement deficiencies.

Recommendations

SEBI should issue illustrative guidance on spoofing, layering and cross-market manipulation, distinguishing suspicious indicators from conclusive evidence. Risk-based governance should require material model changes to be documented and tested, with proportionate controls for adaptive systems. Audit trails should connect order identifiers with algorithm versions, authorised data sources and relevant human interventions, subject to confidentiality safeguards. Institutions should monitor UPSI access by automated systems and maintain verifiable data segregation. Responsibility should follow actual control, knowledge and statutory duties rather than software ownership alone. Integrated surveillance should link cash and derivatives positions across connected accounts, with human review of automated alerts. These measures should supplement existing broker and exchange obligations, not duplicate them.

CONCLUSION

India's securities laws already provide a substantial foundation for addressing algorithmic market manipulation and insider trading. The principal challenge is translating technology-neutral prohibitions into reliable evidence and effective supervision. A proportionate framework combining transparent algorithm governance, information provenance and differentiated accountability can strengthen investor protection while preserving legitimate innovation.

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