
REGULATING HIGH-FREQUENCY AND ARBITRAGE TRADING IN INDIA: SEBI'S ACTIONS AGAINST JANE STREET AND THE EVOLUTION OF MARKET INTEGRITY

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ABSTRACT

High-frequency trading and sophisticated arbitrage strategies have left a deep mark on India's securities market. They have improved market depth and execution speed, but they have also exposed gaps in how the law handles market integrity, investor protection, and systemic risk. SEBI's interim action against the Jane Street group, which was accused of index manipulation and aggressive expiry-day strategies, represents a pivotal moment in how India thinks about advanced trading and market abuse. This paper takes a doctrinal and policy-focused approach, using the Jane Street episode as a lens to test the limits of current law and supervision. It grapples with three core tensions. First, whether the existing regulatory perimeter under the SEBI Act, the SCRA, and SEBI circulars adequately covers algorithmic and cross-market arbitrage. Second, how these strategies distribute gains and losses across market participants, particularly retail investors. Third, the liquidity-fairness trade-off, where efficiency gains sit uneasily alongside volatility, opacity, and unequal access to technology. Drawing on SEBI materials, exchange data, and comparative practice from the USA, EU, and UK, this paper proposes a hybrid regulatory model. That model would include clear statutory definitions of HFT and algorithmic activity, direct accountability for significant algo providers, stronger expiry-day safeguards, technology-enabled surveillance and audit trails, and upgraded index governance. The framework proposed here is forward-looking and risk-based. It borrows from global best practice but is tailored to India's market, which is characterized by high retail participation, index-heavy derivatives activity, and a relatively small number of dominant exchanges. The Jane Street episode is treated not as an outlier but as a formative moment in the maturation of India's financial regulatory state, one that calls for anticipatory, data-driven, and enforceable rules.

Keywords: High-frequency trading, Arbitrage, SEBI, Market manipulation, Index governance, Algorithmic trading, Investor protection

I. INTRODUCTION

India's securities market, among the most active in the world, has transformed dramatically over the past decade. High-frequency trading, algorithm-based execution, and cross-market arbitrage have reshaped how prices are set, how liquidity flows, and how risks move across both cash and derivatives segments. These developments have made markets deeper and faster, but they have also introduced new vulnerabilities. Flash crashes, systemic fragility, and a growing sense of unfairness for retail investors are no longer hypothetical concerns. They are documented features of the market landscape.¹

It was precisely these vulnerabilities that came into sharp focus with SEBI's recent action against the Jane Street Group, a global proprietary trading firm operating in India through several corporate entities. SEBI accused the firm of manipulating index levels and deploying aggressive arbitrage strategies on expiry days. In response, it issued an interim order restricting Jane Street's trading activities.² The order was followed by a wave of regulatory reforms aimed at tightening oversight of algorithmic and high-speed trading.³ The case has since expanded into a broader public debate about whether India's legal framework is equipped to handle such sophisticated market actors, and whether strategies like HFT and arbitrage ultimately serve or harm investor welfare.⁴

This paper undertakes a policy-oriented analysis of the regulation of HFT and arbitrage trading in India, using the Jane Street case as a concrete illustration of the regulatory challenges now confronting Indian markets. It examines whether existing statutes, particularly the SEBI Act⁵ and the Securities Contracts (Regulation) Act, 1956,⁶ along with SEBI's regulations and circulars, are adequate to deal with the risks posed by advanced trading strategies.⁷ It also draws on SEBI and NSE data to trace how these strategies affect retail investors, trading volumes,

¹Securities & Exchange Board of India, Updated SEBI Study Reveals 93% of Individual Traders Incurred Losses in Equity F&O Between FY22 and FY24, PR No. 37/2024 (Sept. 23, 2024).

²Securities & Exchange Board of India, Interim Order in the Matter of Index Manipulation by Jane Street Group (Jul. 3, 2025).

³SEBI, Circular: Safer Participation of Retail Investors in Algorithmic Trading, SEBI/HO/MIRSD/MIRSD-PoD/P/CIR/2025/0000013 (Feb. 4, 2025); NSE Circular No. 495/2025 (NSE/INVG/69255), Detailed Operational Modalities (July 22, 2025).

⁴Chandra Shekhar, Jane Street Case Marks a Turning Point in SEBI's Index Governance Strategy (July 2025).

⁵Securities & Exchange Board of India Act, 1992, No. 15, Acts of Parliament, 1992 (India).

⁶Securities Contracts (Regulation) Act, 1956, No. 23, Acts of Parliament, 1956 (India).

⁷Securities & Exchange Board of India (Prohibition of Fraudulent and Unfair Trade Practices Relating to the Securities Market) Regulations, 2003 (PFUTP Regulations).

and profit-loss patterns across different market segments.⁸

Three concerns run through the analysis. The first is legal clarity: neither HFT nor arbitrage is precisely defined under Indian statute, and that ambiguity has consequences. The second is distributive fairness: the empirical evidence raises serious questions about whether current market structures systematically disadvantage retail investors. The third is regulatory calibration, being the challenge of designing interventions that preserve liquidity and efficiency while genuinely reducing the scope for manipulation.

The paper situates India's evolving approach within a comparative context, drawing on regulatory models from the United States, the European Union, and the United Kingdom. It concludes with a call for a hybrid regulatory framework, one that is grounded in international best practice but shaped by the particular features of India's market.

B. STATEMENT OF PROBLEM

High-frequency trading and complex arbitrage strategies have become a significant part of how India's securities market functions. They improve efficiency and liquidity on one hand, but on the other they raise serious concerns about price manipulation, systemic risk, and unequal access between institutional players and ordinary retail investors. SEBI's action against Jane Street has brought into relief the gaps in India's existing legal framework. Statutes like the SEBI Act, the SCRA, and the PFUTP Regulations provide broad powers, but they lack specific definitions or targeted rules for HFT and algorithmic activity. The deeper problem is this: without clear statutory boundaries, direct accountability for algo providers, and genuine safeguards for retail investors, India risks building a market structure that looks efficient on the surface but is structurally vulnerable to abuse, volatility, and deeply unfair distributional outcomes.

C. RESEARCH METHODOLOGY

This research follows an analytical approach. The paper examines primary sources of law including the SEBI Act, the SCRA, the PFUTP Regulations, and SEBI's circulars and orders, to assess how the existing legal framework applies to high-frequency and arbitrage trading. Empirical evidence is drawn from SEBI and NSE data on derivatives and retail participation

⁸Supra note 1.

to understand the market-level impact of these strategies. Secondary sources including academic articles and legal commentaries are also relied upon. The Jane Street case is used as a central case study, and comparative perspectives from the EU, the US, and the UK are reviewed to help ground the recommendations in international experience.

D. RESEARCH QUESTIONS

1. To what extent do India's existing laws, including the SEBI Act, the SCRA, the PFUTP Regulations, and SEBI circulars, adequately regulate high-frequency and arbitrage trading?
2. What are the distributive and fairness impacts of HFT and expiry-day arbitrage on retail investors, liquidity, and market integrity?
3. How can SEBI design a forward-looking regulatory framework that balances efficiency gains with fairness, transparency, and investor protection?
4. What lessons can India draw from global models like MiFID II in the EU, Regulation SCI in the US, and FCA guidance in the UK in designing a hybrid approach suited to its market?

E. RESEARCH OBJECTIVES

1. To analyze the adequacy of India's current statutory and regulatory framework in addressing HFT and arbitrage.
2. To assess the market-wide impact of such trading strategies, especially on retail investors and overall fairness.
3. To evaluate SEBI's post-Jane Street reforms and their effectiveness in closing the identified regulatory gaps.
4. To propose a hybrid, forward-looking framework for India, informed by international best practices but adapted to domestic market realities.

LITERATURE REVIEW:

The regulation of high-frequency trading and arbitrage has attracted sustained attention in both financial law and economics scholarship, generating a body of work that is at once optimistic

about efficiency gains and cautionary about distributional harm. Early empirical research, particularly the work of Brogaard, Hendershott, and Riordan (2018), established that HFT contributes to faster price discovery and narrower bid-ask spreads, findings that have been influential in shaping the generally permissive regulatory posture adopted by several jurisdictions in the early years of algorithmic trading. Simulation-based studies, including the agent-based modelling work of Jacob Leal and colleagues, similarly suggested that algorithmic strategies can reduce short-term volatility, though only under specific market conditions and with significant variation across market designs.

A growing strand of literature argues that the benefits of HFT are unevenly distributed. As Aghamohammadi and co-authors have documented, HFT firms leverage speed and information advantages to systematically extract value from slower market participants, a dynamic that has been described as a form of technological rent extraction. Menkveld's influential work on new market makers makes a related point: while HFT firms provide liquidity in normal market conditions, their contribution becomes less reliable precisely when liquidity is most needed, such as during periods of stress or rapid price movement.

In the Indian context, the existing literature on HFT remains relatively nascent. Most regulatory discussion has been organized around SEBI's circulars from 2012 onwards, which initially adopted a broad, principles-based model of oversight that allowed considerable market innovation while leaving open significant interpretive gaps. Commentators have noted, particularly in relation to the derivatives segment, that sophisticated firms were able to operate in those gaps without clear accountability. Chandra Shekhar's work on the Jane Street episode is among the most focused contributions to this emerging debate, situating the case within the broader question of how SEBI should govern index-linked derivatives and the firms that trade them.

The scale of retail losses has recently become a central concern in Indian regulatory discourse. SEBI's own reports show that over ninety percent of individual traders incur net losses in index options, despite record levels of participation. This evidence has shifted the conversation from a narrow efficiency focus toward questions of distributive equity, and has intensified scrutiny of whether the SEBI Act and the PFUTP Regulations are sufficient to protect ordinary investors against the complex strategies deployed by well-resourced algorithmic players.

Comparative research has strongly influenced this Indian debate. The European Union's MiFID

II and the Benchmarks Regulation treat algorithmic trading and index governance as matters of systemic importance, requiring registration, detailed audit trails, and independent oversight of index administrators. The US Securities and Exchange Commission has pursued a parallel direction with Regulation SCI and the Consolidated Audit Trail, emphasizing technology-enabled surveillance and mandatory kill-switch mechanisms. The UK's Financial Conduct Authority has gone a step further by proposing structural separation between algorithm developers and trading desks as a way of managing conflicts of interest. These international measures are frequently cited in Indian commentary as benchmarks against which India's current framework falls short, particularly in its reliance on circulars and interim enforcement orders rather than a coherent statutory regime.

Case law and tribunal decisions provide the interpretive backdrop for India's regulatory position. In *SEBI v. Kanaiyalal Baldevbhai Patel* (SAT, 2017), the Securities Appellate Tribunal held that anti-manipulation rules must be applied dynamically to new forms of trading misconduct, endorsing a broad and evolving reading of SEBI's enforcement powers. This reasoning has since been cited in support of SEBI's capacity to act against sophisticated market manipulation even where the specific conduct was not anticipated at the time of drafting. Globally, enforcement cases such as *SEC v. Lek Securities Corp.* (SDNY, 2019) and *FCA v. Da Vinci Invest Ltd.* (2021) have demonstrated how flexible anti-abuse provisions can be applied against precisely the kinds of layered and technologically complex strategies that are now under regulatory scrutiny in India.

SCHEME OF STUDY

I. BACKGROUND: THE EVOLUTION OF HFT, ARBITRAGE, AND REGULATORY RESPONSES IN INDIA

A. The Rise of High-Frequency and Arbitrage Trading

The Indian securities market has undergone a sharp transformation since the early 2000s, driven by the spread of electronic trading platforms, the emergence of algorithmic and high-frequency strategies, and a significant expansion in derivatives activity.⁹ The NSE and BSE have consistently ranked among the leading global exchanges by contract volume, with index

⁹SEBI, Broad Guidelines on Algorithmic Trading, CIR/MRD/DP/09/2012 (Mar. 30, 2012).

options and futures dominating overall market turnover.¹⁰ High-frequency trading, broadly understood as the use of powerful algorithms and co-location facilities to execute large volumes of trades at sub-second intervals, has become a defining feature of how the market functions at a structural level. HFT firms deploy a range of strategies, including market making, latency arbitrage, and index arbitrage, typically leveraging informational and technological advantages to capitalize on minute price discrepancies.¹¹

Arbitrage trading has similarly proliferated. The interplay between the cash and derivatives segments, particularly around expiry days, has created fertile ground for sophisticated traders to exploit price linkages and transient inefficiencies. SEBI's analysis has noted that options trading gives participants enormous leverage, allowing very large market exposures to be built on relatively small amounts of capital.¹² The consequences of this leverage asymmetry, especially when concentrated in the hands of technologically sophisticated players, have become a central concern of India's evolving regulatory debate.

B. Empirical Trends and Market Dynamics

Data from SEBI and the NSE together tell a striking story. Between financial years 2020 and 2025, the average daily traded value in the Equity Derivatives Segment grew at a compound annual rate of roughly twenty-three percent. Within that, index options saw extraordinary growth, with premiums rising at a CAGR of approximately seventy-two percent.¹³ By FY 2025, more than ten million individual investors were active in the derivatives segment. Yet despite this surge in participation, ninety-one percent of those traders recorded net losses, many of them substantial.¹⁴

The expiry-day dynamic is particularly striking. On weekly index options expiry days, liquidity in the options market dwarfs that of the underlying cash and futures segments by a wide margin. On January 17, 2024, for example, the traded value in BANKNIFTY options was 353 times higher than the combined cash market turnover for all constituent stocks.¹⁵ This extraordinary concentration of activity on specific days creates conditions that are structurally susceptible to

¹⁰Supra note 1.

¹¹Id.

¹²Supra note 1, at 8.

¹³Id.

¹⁴SEBI, Comparative Study of Growth in Equity Derivatives Segment vis-a-vis Cash Market After Recent Measures (2025).

¹⁵SEBI, Interim Order in the Matter of Index Manipulation by Jane Street Group (July 3, 2025), at 7.

manipulation by well-positioned participants.

C. Regulatory Evolution: From Principles to Prescription

SEBI's earlier approach to HFT and algorithmic trading relied primarily on broad, principles-based provisions: general anti-manipulation laws like the PFUTP Regulations supplemented by a handful of operational guidelines.¹⁶ Over time, as unusual market movements and manipulation concerns accumulated, SEBI moved toward a more rules-driven approach.

Key milestones in that evolution include the 2012 guidelines on algorithmic trading for brokers, later restrictions on co-location services, and the gradual tightening of risk controls and order-to-trade ratios. The Jane Street episode marked a qualitative break from that gradual progression. It became a turning point that prompted SEBI to reconsider its entire regulatory strategy, producing a wave of circulars and interim orders in 2024 and 2025 that, for the first time, brought areas like index governance and the activities of global proprietary trading firms more firmly under SEBI's supervision.¹⁷

D. The Jane Street Case: Chronology and Significance

In early 2024, media reports and US court filings alleged that Jane Street had been deploying proprietary trading strategies in the Indian options market without proper authorization. These disclosures triggered immediate concern among market participants and regulators alike.¹⁸

SEBI responded by opening a preliminary examination and then launching a full-scale investigation. Forensic analysts inspected Jane Street's trading patterns and profit-and-loss records to identify anomalies and determine whether trading activity had distorted prices, concentrated risk on particular expiry days, or produced outcomes harmful to retail investors and market integrity.¹⁹

The investigation culminated in an interim order from SEBI that underscored gaps in surveillance infrastructure and signaled the need for stronger governance, clearer rules, and technology-driven oversight. The interim findings indicated that Jane Street operated through

¹⁶Supra note 8, at 34.

¹⁷Oxford Law Blogs, SEBI's Jane Street Interim Order: Implications for Expiry-Day Volumes and Index Governance (Aug. 2025).

¹⁸Reuters, India Bars Jane Street from Its Securities Market, Citing Manipulation of Stock Indexes (July 4, 2025).

¹⁹Supra note 14, at 2.

multiple Indian and foreign entities and consistently ran the largest cash-equivalent positions in index options, particularly on expiry days. The regulator identified trading patterns consistent with intra-day index manipulation and extended marking-the-close strategies, raising serious concerns under the PFUTP Regulations.²⁰

II. LEGAL AND REGULATORY FRAMEWORK: STATUTES, CIRCULARS, AND CASE LAW

A. Statutory Foundations

The SEBI Act, 1992 is the principal statute governing India's securities markets. Section 11 confers wide powers on SEBI to protect investors, promote market development, and regulate the securities market through any measures it considers necessary. These include issuing circulars, inspecting intermediaries, and taking action against market abuse. Sections 11(4) and 11B further authorise SEBI to issue directions in the interest of investors or for the orderly functioning of markets, including interim orders and trading restrictions on specific entities.²¹ The Securities Contracts (Regulation) Act, 1956 regulates the recognition of stock exchanges and the contracts traded on them. Section 13 prohibits contracts that do not comply with prescribed terms, while Section 23 prescribes penalties for illegal trading practices.²²

The PFUTP Regulations, 2003 are SEBI's principal anti-manipulation instrument. Regulation 3 prohibits any person from employing any device, scheme, or artifice to defraud in connection with securities trading. Regulation 4 extends this prohibition to any act, practice, or course of business that operates as a fraud or deceit upon any person.²³ The framework is deliberately broad, which allows SEBI to address new forms of market abuse that were not anticipated when the statute was originally drafted.²⁴

On algorithmic and high-frequency trading specifically, SEBI has issued a succession of targeted circulars. The 2012 Circular provided broad principles-based guidelines, while subsequent circulars have progressively tightened controls around retail participation, broker responsibilities, and the registration of algo providers. The 2025 circulars introduce a multi-

²⁰Id. at 4.

²¹Securities and Exchange Board of India Act, 1992, No. 15, Acts of Parliament, 1992, ss. 11, 11(4), 11B, 11D (India).

²²Securities Contracts (Regulation) Act, 1956, No. 23, ss. 13, 23 (India).

²³SEBI (PFUTP) Regulations, 2003 (as amended), Regs. 3-4, Gazette of India.

²⁴SEBI v. Shri Kanaiyalal Baldevbhai Patel, Civil Appeal Nos. 2595-96 of 2013 (S.C. India), Sept. 20, 2017.

layered framework covering the empanelment of algorithmic trading vendors, the tagging of algo orders, and the imposition of risk management and audit requirements on those vendors.²⁵

B. Index Governance and Benchmark Regulation

Until recently, index providers in India functioned with little direct regulatory oversight from SEBI. That gap came into sharp relief following the Jane Street investigation, prompting SEBI to release a consultation paper on index governance.²⁶ The paper proposed mandatory registration of index providers, the adoption of formal governance policies, and SEBI approval for significant changes to index methodology. These measures bring India closer to the approach taken under the EU's Benchmarks Regulation, which treats benchmark administrators as critical market infrastructure and subjects them to strict requirements on transparency, governance, and conflict-of-interest management.²⁷

C. Case Law and Regulatory Precedent

Indian courts and tribunals have consistently supported SEBI's broad powers to act against market abuse, even where the relevant law is written in general terms. In *SEBI v. Kanaiyalal Baldevbhai Patel* (SAT, 2017),²⁸ the Securities Appellate Tribunal affirmed that SEBI could act against new and evolving forms of manipulation, stressing the need for a dynamic interpretation of market abuse laws. This reasoning is consistent with the approach taken by regulators in other jurisdictions. In the US, *SEC v. Lek Securities Corp.* (SDNY, 2019),²⁹ and in the UK, *FCA v. Da Vinci Invest Ltd.* (2021),³⁰ both demonstrate how flexible anti-abuse provisions can be applied against sophisticated and technologically complex trading strategies.

D. Recent Regulatory Enhancements Post-Jane Street

In the wake of the Jane Street investigation, SEBI and the stock exchanges have implemented a number of measures designed to strengthen oversight, reduce manipulation risk, and increase transparency.³¹ These include the rationalization of weekly and monthly index derivatives

²⁵NSE, Implementation Standards/Circular No. 495/2025 (NSE/INVG/69255), Safer Participation of Retail Investors in Algorithmic Trading: Detailed Operational Modalities (July 22, 2025).

²⁶SEBI, Regulatory Framework for Index Providers, Consultation Paper (2023).

²⁷Regulation (EU) 2016/1011 (Benchmarks Regulation), O.J. L 171/1 (2016).

²⁸Supra note 24.

²⁹*SEC v. Lek Securities Corp.*, No. 17-cv-1789 (S.D.N.Y. Oct. 1, 2019).

³⁰*FCA v. Da Vinci Invest Ltd.*, (2015) EWHC 2401 (Ch).

³¹ICICI Direct, Algorithmic Trading: New Rules by SEBI & NSE (May 2025).

products,³² increased tail-risk coverage on options expiry days,³³ upfront collection of option premiums from buyers,³⁴ removal of calendar spread treatment on expiry days,³⁵ intraday monitoring of position limits,³⁶ mandatory empanelment and registration of algo providers with detailed operational requirements,³⁷ enhanced audit trails and tagging of algo orders,³⁸ and a requirement that black-box algos be registered as research analysts with SEBI.³⁹

FINDINGS AND ANALYSIS

A. THE LEGAL PERIMETER: DEFINITIONAL CHALLENGES IN REGULATING HFT AND ARBITRAGE

1. Definitional Ambiguity and Regulatory Arbitrage

One of the most persistent challenges in regulating HFT and arbitrage lies in the definitional ambiguity that surrounds these activities. Neither the SEBI Act nor the PFUTP Regulations explicitly define high-frequency trading. Instead, the regulatory framework relies on functional descriptions and operational guidelines that sophisticated market participants have, in practice, been able to work around.⁴⁰ The gap between what the law says and what the market does has created space for regulatory arbitrage, where firms design their strategies to sit just outside the scope of existing rules and thereby escape accountability.

SEBI's 2025 Circular attempts to narrow this gap by defining algo orders as orders generated through automated execution logic, and by requiring all API-based orders to carry unique identifiers.⁴¹ This is a meaningful step. But the distinction between white-box execution algorithms and black-box alpha-seeking algorithms, which is operationally significant, does not appear in any statute and remains vulnerable to creative circumvention by well-resourced actors.

³²SEBI, Circular on Rationalisation of Index Derivative Contracts (Oct. 1, 2024).

³³Supra note 24.

³⁴Id.

³⁵Id.

³⁶Id.

³⁷Supra note 2.

³⁸Id.

³⁹Id.

⁴⁰Supra note 3.

⁴¹SEBI, Safer Participation of Retail Investors in Algorithmic Trading, SEBI/HO/MIRSD/MIRSD-PoD/P/CIR/2025/0000013, s. I.2 (Feb. 4, 2025).

2. Empanelment and Oversight of Algo Providers

The new framework requires all algo providers to be empaneled with the exchanges, with associated obligations including due diligence, regular audits, and, for black-box algorithms, mandatory registration as Research Analysts.⁴² This significantly expands the regulatory perimeter to cover fintech vendors that previously operated entirely outside SEBI's direct oversight. That expansion is welcome.

However, the framework still treats brokers as the primary regulated entities and algo providers essentially as their agents. That structural positioning can weaken accountability, particularly when complex trading strategies are designed and run by offshore entities or through layered corporate structures, as was precisely the case with the Jane Street Group.⁴³ The intermediary-centric model may not be adequate for a world in which the real decision-making authority sits with firms several steps removed from the broker on record.

3. Comparative Perspective

Global regulators have grappled with similar definitional and accountability challenges, and their experience is instructive. In the US, Regulation SCI imposes direct obligations on market infrastructure operators, while in the EU, MiFID II places obligations directly on algorithmic traders and market makers, requiring registration, audit trails, and kill-switch capabilities.⁴⁴ The UK's Financial Conduct Authority has gone further, recommending structural separation between algorithm developers and trading desks to prevent conflicts of interest. India is moving in a similar direction, but the movement remains gradual. There is still no statutory clarity, and no mechanism for directly holding algo developers accountable unless they are also registered brokers.⁴⁵

4. Policy Implication

The absence of a clear statutory definition of HFT and algorithmic trading, combined with continued reliance on operational circulars, undermines both the predictability and the enforceability of regulatory action. What is needed is a legislative amendment to the SEBI Act

⁴²NSE Circular No. 495/2025 (NSE/INVG/69255), ss. 6-7 (July 22, 2025).

⁴³Supra note 1.

⁴⁴Supra note 26.

⁴⁵Megan Woodward, 'The Need for Speed: Regulatory Approaches to High Frequency Trading in the United States and the European Union', 50 Vanderbilt Law Review 1359 (2021).

or the SCRA that explicitly defines algorithmic and high-frequency trading, specifies which activities trigger regulatory obligations, and creates direct accountability for non-broker algo providers. Leaving these questions to circulars is no longer adequate given the pace and complexity of market development.

B. DISTRIBUTIVE EFFECTS OF HFT AND ARBITRAGE: AN EMPIRICAL AND NORMATIVE ASSESSMENT

1. Empirical Evidence of Market Impact

SEBI's data presents a picture that is difficult to ignore. Even as retail participation in derivatives has grown rapidly, over ninety-one percent of individual traders recorded net losses in FY 2025, with total losses climbing by forty-one percent to over one trillion rupees.⁴⁶ The average retail trader lost more than Rs. 1.1 lakh, and over ninety percent of retail participants have consistently recorded losses across multiple years.⁴⁷ These losses are not evenly distributed across time. They intensify sharply on expiry days, when HFT and arbitrage activity reaches its peak and the leverage implicit in options positions creates conditions of extreme outcome asymmetry.⁴⁸ Against this backdrop, Jane Street alone is estimated to have earned more than Rs. 36,000 crore during the review period, primarily from index options.⁴⁹

The profit and loss data set out in SEBI's interim order is revealing in its specifics. Profits from index options alone across the Jane Street entities accounted for over Rs. 43,289 crore, while losses in stock futures, index futures, and cash collectively amounted to roughly Rs. 7,687 crore. The net position tells a clear story about where value was being extracted and from whom.

2. Market Efficiency Versus Fairness

Supporters of HFT and arbitrage argue, not without basis, that these strategies make markets more efficient. They narrow bid-ask spreads, speed up price adjustment, and maintain liquidity continuity across trading sessions.⁵⁰ Simulation-based research using real-world data also

⁴⁶Supra note 1, at 20.

⁴⁷Id.

⁴⁸Supra note 14, at 4.

⁴⁹Id.

⁵⁰Jonathan Brogaard, Terrence Hendershott & Ryan Riordan, High Frequency Trading and Price Discovery (2013/2014).

suggests that HFT can reduce volatility under certain conditions and improve the quality of trade execution.

India's experience, however, suggests a more complicated picture. The high leverage available in options trading, combined with the informational and technological advantages of HFT firms, creates a winner-takes-all environment in which retail investors are structurally outmatched. The sheer concentration of gains among a small number of sophisticated players raises questions that go beyond efficiency. They go to the question of whether the current market structure is fair in any meaningful sense, and whether unrestricted HFT serves any genuine social or economic purpose beyond enriching its practitioners.⁵¹

3. Evidence of Market Manipulation and Systemic Risk

SEBI's interim report on the Jane Street case identifies two specific manipulative practices: intra-day index manipulation and extended marking-the-close strategies. Both were directed at shifting index levels in ways that served Jane Street's large options positions.⁵² The report demonstrates how trades in relatively thinly traded cash and futures segments were able to move index values in ways that supported a much larger options portfolio, often at the direct cost of less informed and less sophisticated investors.⁵³

Whether these practices stayed technically within existing rules is a matter for the enforcement process. But their effect on market integrity is clear. They also raise systemic concerns. When a small number of global firms hold concentrated positions in instruments as widely held as NIFTY and BANKNIFTY options, the potential for coordinated strategies to trigger sudden liquidity disruptions or flash crashes cannot be dismissed.⁵⁴

4. Policy Implication

The evidence suggests that regulators need to reorient their focus toward distributional fairness and market stability, not just efficiency. This means considering position limits for individual and proprietary traders, with particular tightening on expiry days. It means requiring clearer

⁵¹A. J. Menkveld, *High Frequency Trading and the New-Market Makers* (2013).

⁵²Sandrine Jacob Leal et al., *Rock around the Clock: An Agent-Based Model of Low- and High-Frequency Trading* (2014).

⁵³Supra note 14, at 9.

⁵⁴Cina Aghamohammadi et al., 'Permutation approach, high frequency trading and variety of micro patterns', *Physica A* (2014).

and more honest disclosure of risk by brokers and product providers, including the publication of profit-and-loss distributions for different investor categories and the identification of counterparties holding concentrated exposures. It means introducing suitability checks before retail clients are permitted to trade leveraged derivatives. And it means exploring structural tools that reduce the most harmful forms of short-term churn, whether through minimum holding requirements on certain contracts or a carefully calibrated transaction levy applied to very high-frequency activity. These measures can and should be piloted and evaluated before full rollout, so that their effects on liquidity can be measured and managed.

C. BALANCING LIQUIDITY PROVISION AND MARKET INTEGRITY: THE CALIBRATION CHALLENGE

1. The Liquidity-Fairness Trade-Off

The central regulatory tension in this domain is the need to balance the genuine liquidity benefits that HFT and arbitrage can provide against the risks of abuse and unfair distributional outcomes.⁵⁵ The empirical literature is genuinely divided on this question. Some studies find that HFT reliably reduces bid-ask spreads and enhances price discovery,⁵⁶ while others link it to increased volatility, flash crashes, and a sustained erosion of market confidence.⁵⁷ The challenge for regulators is not to resolve this academic debate but to design rules that capture the benefits while limiting the harms.

2. Index Governance as a Systemic Safeguard

The Jane Street episode has made clear how important robust index governance is as a structural safeguard. In response, SEBI has moved to require formal registration of index providers, the adoption of governance policies, and regulatory approval for significant changes to index methodology.⁵⁸ This aligns India more closely with the EU's Benchmarks Regulation, which treats index administrators as critical market infrastructure.⁵⁹

Implementation, however, is genuinely difficult. Questions remain about the independence of index committees, the transparency of rebalancing schedules, and the management of conflicts

⁵⁵Brogaard, Hendershott & Riordan, *supra* note 50.

⁵⁶*Supra* note 49, at 8.

⁵⁷*Supra* note 51.

⁵⁸SEBI, Framework for Index Providers (Consultation Paper, 2023).

⁵⁹Regulation (EU) 2016/1011 (Benchmarks Regulation), O.J. L 171/1 (2016).

of interest in a market where the same actors often serve simultaneously as index providers, fund managers, and proprietary traders. Good intentions on paper can be undermined by structural conflicts that are not explicitly addressed.

3. Comparative Experience

Cross-jurisdictional experience reinforces the case for a dynamic, risk-based approach. The US SEC's Consolidated Audit Trail and Regulation SCI provide for real-time surveillance and mandatory kill-switch capabilities. The EU's MiFID II imposes strict requirements on algorithmic traders including circuit breakers and position reporting. These frameworks share an ex-ante orientation: they are designed to prevent harm before it occurs rather than simply to respond to it afterward. India's recent reforms represent a significant step toward that orientation, but further refinement and calibration are needed to address the specific features of the Indian market, including the high level of retail participation in derivatives and the dominance of a small number of exchanges and index products.

4. Policy Implication

The core regulatory challenge is to design a framework that preserves the genuine benefits of liquidity and efficiency while meaningfully reducing the risk of manipulation and the possibility of systemic crisis. That requires a layered approach: clear baseline rules on position limits and audit requirements, dynamic surveillance using real-time data analytics, and regular policy reviews that can adapt to market evolution. Static rules will always be outpaced by sophisticated practitioners. What India needs is a framework that is structurally capable of keeping up.

SUGGESTIONS AND CONCLUSION

A. RECOMMENDATIONS AND POLICY SUGGESTIONS

A. Codify Definitions and Expand the Statutory Perimeter

The most fundamental reform needed is a legislative amendment to the SEBI Act and/or the SCRA to incorporate express definitions and targeted regulation of high-frequency and algorithmic trading as distinct categories of market activity. This is not merely a matter of tidying up the statute book. Clear definitions would provide legal certainty, facilitate consistent

enforcement, and remove the definitional ambiguity that sophisticated market participants have exploited to design around existing rules. A framework that cannot name what it seeks to regulate will always struggle to regulate it effectively.

B. Direct Registration and Accountability for Algo Providers

SEBI should move toward direct registration and oversight of all significant algo providers, including offshore entities and non-broker fintech vendors. The current framework, which treats brokers as the primary regulated entities and algo providers as their agents, is structurally inadequate for a market in which the real decision-making authority over complex trading strategies often sits with firms that are several layers removed from the registered intermediary. Closing this accountability gap would align India's regime with the approach taken under MiFID II in the EU and would directly address one of the most important structural lessons of the Jane Street case.

C. Enhanced Investor Protection and Distributive Equity

The scale of retail losses documented in SEBI's own data represents a serious policy failure that demands a response more considered and comprehensive than the current framework provides. Regulators should act on several fronts simultaneously.

First, position limits should be imposed on both individual and proprietary traders, with specific tightening on index expiry days when leverage and volatility spike most sharply. Second, brokers and product providers should be required to publish clear, accessible information about the risk profile of leveraged products, including actual profit-and-loss distributions for different investor categories and information about counterparty concentration. Third, suitability checks and plain-language risk warnings should be mandatory before retail clients are permitted to trade leveraged derivatives. A basic questionnaire, combined with minimum capital and experience thresholds, would help ensure that leveraged products reach only those who can genuinely bear the associated risks.

Fourth, and more structurally, regulators should explore tools that reduce the most damaging forms of short-term churn, including minimum holding windows for certain contracts or a modest transaction levy calibrated to very high-frequency activity. These measures should be piloted carefully before wider rollout, so that their effects on market depth and price discovery

can be observed and evaluated. The goal is not to suppress legitimate market making but to target the trading behaviours that cause the most concentrated harm to less sophisticated participants.

D. Strengthen Index Governance and Transparency

Given the central role that indexes play in India's derivatives market, the governance of those indexes is a matter of systemic importance. All index providers should be required to register with SEBI and submit to regular independent audits that verify data sources, calculation methodologies, and governance procedures. Independent oversight committees should be established for major indexes, drawing their membership from regulators, academics, and market participants, with a mandate to review methodology changes before they are implemented.

Rebalancing rules and index constituent weights should be published in machine-readable form in real time, so that all market participants can adjust their positions without guessing at non-public information. Strict conflict-of-interest rules should bar index administrators, asset managers, and trading firms from acting on non-public rebalancing information or from designing index rules that advantage specific market players. These steps, taken together, would significantly raise the trustworthiness of India's index infrastructure and reduce the information asymmetries that sophisticated players have exploited.

E. Dynamic Surveillance and Technology-Enabled Regulation

Investment in real-time surveillance infrastructure is not optional. SEBI and the exchanges should invest in consolidated audit trails, machine learning tools capable of detecting anomalous trading patterns, and mandatory kill-switch capabilities for registered algo participants. Circuit breakers and dynamic alert systems should be calibrated to the specific risk profiles of different market segments, with particular attention to conditions that are known to be associated with manipulation, such as expiry-day trading in index options.

F. Drawing on Comparative and Hybrid Approaches

India should draw deliberately and selectively on the experience of other jurisdictions. The US framework, anchored by Regulation SCI and the Consolidated Audit Trail, provides a model for technology-enabled, real-time market oversight. The EU's MiFID II and Benchmarks

Regulation offer a comprehensive approach to the regulation of algorithmic trading and index governance. The UK's FCA guidance, with its emphasis on structural separation between algorithm developers and trading desks, addresses the conflict-of-interest problem that sits at the heart of many manipulation concerns.

A hybrid model drawing on these international frameworks but shaped by India's particular market realities, including its high retail participation, its derivatives-heavy structure, and its relatively concentrated exchange infrastructure, would be both principled and practically workable.

CONCLUSION

The regulation of high-frequency and arbitrage trading in India stands at an inflection point. The Jane Street episode has been important not because it is unprecedented in global markets but because of what it revealed about the specific vulnerabilities of India's legal and supervisory architecture. It showed that sophisticated global firms could operate in India's derivatives market at scale, using strategies that SEBI's general anti-manipulation provisions were not well-designed to detect or address in real time. And it showed, in data that SEBI itself has published, the extent to which ordinary retail investors were bearing the costs of that activity. SEBI's response has been serious and in many respects admirable. The wave of circulars and interim measures that followed the investigation represents a genuine effort to close the most obvious gaps. But circulars and interim orders are not sufficient as the long-term architecture of a regulatory regime. They are reactive and episodic by nature. What India needs is a statutory framework that is anticipatory, comprehensive, and structurally capable of keeping pace with market evolution. That framework should be built on a small number of principles that are already well-established in the comparative regulatory literature. Definitions matter: if the law cannot name what it regulates, enforcement will always be contested and incomplete. Accountability should follow decision-making authority: the entity that designs and controls a trading strategy should bear direct regulatory obligations, regardless of how it is structured or where it is domiciled. Surveillance must be real-time and data-driven: the complexity of modern market manipulation means that it cannot be detected after the fact through manual review of trading records. And investor protection must be taken seriously as a distributive concern, not just as a compliance formality. The balance between liquidity and fairness is not naturally stable. It has to be actively maintained through well-designed rules, honest data, and

a regulatory institution that is willing to use its powers. The Jane Street episode suggests that SEBI is moving in that direction. The task now is to make that movement durable, statutory, and self-reinforcing.