

ALGORITHMIC COLLUSION AND THE LIMITS OF SECTION 3 OF THE COMPETITION ACT, 2002: RETHINKING ‘AGREEMENT’ IN THE AGE OF AUTONOMOUS PRICING

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ABSTRACT

Section 3 of the Competition Act, 2002 prohibits anti-competitive agreements, but its core requirement of a “meeting of minds” sits uneasily with pricing algorithms that can produce cartel-like outcomes without any human communication at all. This paper examines the Supreme Court's decision in *Samir Agrawal v. Competition Commission of India*, arguing that it settles only a narrow, single-platform fact pattern and leaves genuinely untested the harder case of independent competing platforms whose algorithms learn to track each other's prices. Drawing on the American plus-factors doctrine and the European Union's shift toward ex-ante regulation, the paper proposes a two-track Indian response: a doctrinal clarification of concerted practice for provable algorithmic monitoring, and a narrowly targeted ex-ante framework, along the lines of the proposed Digital Competition Bill, for the small set of platforms capable of sustaining purely autonomous coordination.

I. INTRODUCTION

Every time a consumer books an Ola or Uber ride during peak hours, or notices that a food delivery app's prices seem to rise and fall together with its competitor's, they are witnessing pricing decisions made not by a person but by a piece of software. These algorithms respond to demand, supply, weather, and dozens of other signals in real time, adjusting prices far faster and far more precisely than any human ever could. This is, in most respects, a genuine efficiency gain. But it also raises a question competition law was never designed to answer cleanly: what happens when the outcome of this automated pricing looks exactly like the outcome of a cartel, without anyone having actually agreed to fix prices at all?

Section 3 of the Competition Act, 2002 prohibits agreements that cause or are likely to cause an appreciable adverse effect on competition in India.¹ The word doing all the work in that sentence is “agreement.” Indian law, following a long tradition borrowed from both English and American antitrust doctrine, has always required some proof of a meeting of minds —

¹Competition Act, No. 12 of 2002, § 3 (India).

concerted action, communication, or at least a conscious decision to align conduct with a rival. Algorithms complicate this in a very specific way. Two competing platforms can each independently deploy pricing software that reacts to the same market signals, including, sometimes, each other's prices, and arrive at parallel, supra-competitive pricing without either firm's human decision-makers ever communicating with the other. The economic effect can be identical to a cartel. The legal test for proving one may simply not fit.

This paper examines whether Section 3, as currently interpreted by Indian courts and the Competition Commission of India (“CCI”), is equipped to deal with this problem. Part II traces the doctrinal foundation of the “agreement” requirement and its most significant application to algorithmic pricing so far, the Samir Agrawal litigation. Part III looks at how algorithmic collusion actually works in practice, distinguishing between different degrees of algorithmic coordination that current doctrine treats identically. Part IV addresses the practical evidentiary problem of proving such coordination. Part V works through a concrete illustrative scenario. Part VI considers the comparative position in the European Union. Part VII evaluates recent Indian regulatory responses, including the Competition (Amendment) Act, 2023 and the CCI's own market study on the digital economy. Part VIII sets out this paper's central argument: that India does not need to abandon the agreement requirement, but does need either a doctrinal reinterpretation of what counts as a meeting of minds in an algorithmic context, or a narrowly targeted ex-ante regulatory supplement for the small set of firms most capable of sustaining algorithmic coordination.

II. THE AGREEMENT REQUIREMENT AND SAMIR AGRAWAL V. COMPETITION COMMISSION OF INDIA

The most significant Indian authority on algorithmic pricing remains *Samir Agrawal v. Competition Commission of India*², decided by the Supreme Court in 2020. The informant, an independent legal practitioner, alleged that Ola and Uber's dynamic pricing algorithms facilitated price-fixing between drivers, and effectively operated as a hub-and-spoke cartel with each platform as the hub. The CCI dismissed the information at the threshold stage under Section 26(2), finding no evidence of an agreement or concerted practice among drivers, and no communication of competitively sensitive information through the platforms as a central hub. The NCLAT upheld this dismissal, and the Supreme Court, while widening the standing rules

²Samir Agrawal v. Competition Comm'n of India, (2021) 3 S.C.C. 136 (India).

for informants under the Act, agreed on the merits that no contravention of Section 3 had been established.

The reasoning underlying this outcome is instructive. The Commission found that drivers were unaware of each other's fares, retained the freedom to accept or reject individual rides, and could operate on competing platforms simultaneously. Ola and Uber were held to be acting as principals in their own right, not as passive hubs exchanging pricing information between otherwise independent competitors. Critically, the dynamic pricing algorithms themselves were treated as responding to real-time supply and demand conditions, rather than implementing any predetermined, collusive price. On this reasoning, algorithmic pricing alone — in the absence of proof that the algorithm was itself an instrument of a prior agreement between competing firms — does not establish a contravention of Section 3.

Samir Agrawal is often read as settling the question of algorithmic pricing under Indian law. This paper suggests that reading is too broad. The specific facts before the CCI and the courts involved a single platform's algorithm setting prices for a large number of formally independent drivers — a vertical, single-firm scenario, not a case of two or more independent competing platforms whose separate algorithms react to each other's pricing signals and converge on a common, elevated price level. The Supreme Court's finding that no “meeting of minds” existed between Ola and Uber themselves was almost incidental to the case, since the informant's central allegation concerned coordination among drivers, not between the two platforms. Whether the same reasoning would hold where two rival platforms' pricing algorithms are shown to systematically track and respond to each other's prices, producing a stable, supra-competitive equilibrium neither platform could sustain on its own, remains genuinely untested in Indian law.

III. DISTINGUISHING DEGREES OF ALGORITHMIC COORDINATION

Competition law scholars have generally identified a spectrum of algorithmic pricing behaviour, and treating all of it as a single undifferentiated category is where much of the current doctrinal confusion originates. At one end sits what might be called messenger collusion: firms that have already reached an explicit human agreement to fix prices, and then simply use algorithms to implement and monitor that agreement more efficiently. This is, and always has been, a straightforward Section 3 violation — the algorithm is merely the tool, and

the underlying agreement remains provable through conventional evidence such as communications, meeting records, or witness testimony.

A second, more difficult category is what might be termed hub-and-spoke facilitation, where independent competitors do not communicate with each other directly but each independently uses the same third-party pricing algorithm or platform, which itself coordinates pricing across all of them. This was the theory the informant attempted, unsuccessfully, to establish in *Samir Agrawal*. Existing Indian hub-and-spoke doctrine, borrowed largely from English cases on vertical information exchange, could in principle capture this scenario, but only where the shared algorithm can be shown to actually exchange competitively sensitive information between the otherwise independent competitors using it — a demanding evidentiary standard that a well-designed algorithm can be built to avoid triggering, for instance by using only each firm's own historical data rather than pooling data across firms.

The third and most conceptually difficult category is genuinely autonomous parallel pricing: independent firms deploying separate algorithms that were never designed to communicate with each other, but which each independently learn to respond to observable market prices — including competitors' prices, which are often visible in real time on digital platforms — and converge on stable, supra-competitive pricing purely through repeated interaction. Some competition economists describe this as algorithms “learning to collude” without any human ever intending or even understanding that outcome. This is the scenario existing Indian doctrine is least equipped to address, because there is no agreement in any traditional sense to point to — no communication, no shared intermediary exchanging information, just two or more independent optimisation processes reacting to publicly observable prices and arriving at a jointly profitable outcome that no single firm could achieve by unilateral pricing alone.

IV. THE EVIDENTIARY PROBLEM: PROVING COORDINATION WITHOUT COMMUNICATION

Even setting aside the doctrinal question of what counts as an agreement, Indian competition law faces a separate, more practical problem: how would a regulator actually prove algorithmic coordination even if it wished to? Section 3(3) of the Act creates a rebuttable presumption of an appreciable adverse effect on competition for certain categories of horizontal agreements, including price-fixing, once an agreement is established.³ But the presumption only operates once an agreement is shown to exist in the first place; it does nothing to help establish the

³Competition Act, No. 12 of 2002, § 3(3) (India).

underlying agreement itself. In conventional cartel cases, investigators rely on direct evidence such as emails, meeting minutes, or leniency applicants' testimony, or on circumstantial evidence such as parallel price movements combined with additional “plus factors” suggesting the parallelism was not independently arrived at.

American antitrust law has developed the plus-factors doctrine specifically to address this evidentiary gap in cases of tacit coordination: courts look for indicators such as parallel conduct that would be against each firm's individual self-interest absent an assurance of reciprocal action, opportunities for indirect communication, and conduct inconsistent with independent decision-making. Indian courts have not yet developed an equivalent, algorithmic-specific plus-factors framework, and this paper suggests that this is precisely the gap that most urgently needs filling. In an algorithmic context, plausible plus factors might include: whether a firm's algorithm was demonstrably trained on or fed competitors' pricing data; whether price increases initiated by one firm's algorithm are followed, within an implausibly short window, by matching increases from a rival's independently coded algorithm; and whether the resulting price level is one that either firm's own historical data suggests it could not profitably sustain acting alone. None of this requires proof of an explicit agreement in the traditional sense. What it requires is a shift in evidentiary focus, from looking for communication between people to looking for patterns of adaptive interaction between systems — a shift Indian competition law has not yet formally undertaken, though nothing in the text of Section 3 obviously forecloses it.

A further complication is technical rather than legal: proving these plus factors in an algorithmic context typically requires access to the algorithms themselves, or at minimum to detailed logs of their pricing decisions and the data inputs behind them, neither of which the CCI has historically needed to demand in cartel investigations built around human communication. This suggests that any doctrinal reform of the kind proposed in Part VIII would need to be paired with expanded CCI investigative capacity — the power to compel disclosure of algorithmic logic and training data, and the technical expertise within the Commission to interpret what is disclosed. Without this, even a well-designed legal test for algorithmic concerted practice risks remaining unenforceable in practice.

V. AN ILLUSTRATIVE SCENARIO: FOOD DELIVERY PLATFORMS

The abstract distinctions drawn in Part III become clearer with a concrete, India-specific illustration. Consider two competing food delivery platforms operating in the same city, each

independently running a dynamic pricing algorithm that adjusts delivery fees based on distance, demand, weather, and rider availability. Suppose both platforms' algorithms also take into account the delivery fee currently displayed by the other platform for a comparable order — a data point that is, in practice, freely observable, since either platform's live pricing is visible to any user with both apps open. Over time, if both algorithms independently learn that matching or slightly undercutting the rival's price produces better outcomes than aggressive discounting, which merely triggers a matching discount from the rival and erodes both platforms' margins, the two pricing systems may settle into a stable equilibrium of relatively high, closely matched delivery fees — without either platform's engineers or executives ever discussing pricing with their counterparts at the rival firm.

Under the reasoning in Samir Agrawal, this outcome would likely escape Section 3 entirely: there is no communication, no shared hub exchanging information, and each platform's algorithm can credibly claim to be responding only to observable market data rather than executing a predetermined collusive strategy. Yet the economic outcome is, for consumers, indistinguishable from a cartel — delivery fees settle at a level higher than either platform could sustain if it were genuinely trying to win market share through price competition. This is precisely the scenario the plus-factors framework proposed in Part IV is designed to address: not by presuming collusion whenever prices happen to move together, which would be both economically naive and legally unsound, but by asking whether the pattern of adaptive price-matching is more consistent with genuine independent competition or with each algorithm treating the other's price as a coordination signal it would not otherwise have relied upon.

VI. A COMPARATIVE GLANCE: THE EUROPEAN APPROACH

The European Commission has grappled with a similar problem, though its doctrinal starting point under Article 101 of the Treaty on the Functioning of the European Union is broadly similar to Section 3, requiring an agreement or concerted practice.⁴ European competition scholars and regulators have generally converged on the view that autonomous algorithmic tacit collusion, of the kind described in Part III above, sits at or beyond the outer edge of what Article 101 can currently reach, since concerted practice doctrine, even in its most expansive form, has historically still required some form of contact or communication between the parties, whether direct or indirect. Rather than stretching Article 101 doctrine to cover purely autonomous algorithmic parallelism, European regulators have instead leaned more heavily on

⁴Consolidated Version of the Treaty on the Functioning of the European Union art. 101, 2012 O.J. (C 326) 47.

ex-ante regulatory tools — most notably the Digital Markets Act, which imposes structural obligations directly on designated “gatekeeper” platforms regardless of whether any specific anti-competitive agreement can be proven.⁵

This comparative experience is instructive for India in a specific way: it suggests that trying to force purely autonomous algorithmic pricing into an agreement-based framework may be the wrong battle to fight. If even a mature, well-resourced regulator like the European Commission has found it more practical to build parallel ex-ante tools rather than stretch concerted-practice doctrine to its breaking point, Indian competition law may be better served by a similar two-track approach: retain the agreement requirement for provable coordination, and build a separate, narrowly targeted regulatory response for the specific structural conditions under which autonomous algorithmic collusion becomes likely.

VII. RECENT INDIAN REGULATORY RESPONSES

India has begun moving, cautiously, in this direction. The Competition (Amendment) Act, 2023 introduced the Deal Value Threshold for merger control, aimed principally at closing a different gap — the escape of high-value, asset-light digital acquisitions from merger scrutiny — but its broader legislative intent signals a recognition that traditional competition tools, built for an industrial-era economy, need updating for digital markets.⁶ More directly relevant is the CCI's own 2025 market study into digital markets, which found that even relatively simple pricing algorithms can, under the right conditions, settle on prices higher than what a competitive market would produce, and explicitly flagged that traditional evidentiary standards developed for human cartels may not translate well to algorithm-driven coordination.⁷

This study matters because it represents the CCI acknowledging, in its own analytical work, precisely the doctrinal gap this paper identifies: the possibility that algorithmic markets can produce cartel-like outcomes that existing Section 3 jurisprudence, built around Samir Agrawal's fact pattern, is not well designed to catch. What the study does not yet do is translate that acknowledgment into either a formal guidance note on algorithmic pricing or a legislative amendment. There remains a meaningful gap between the CCI recognising the problem in a study and Indian law actually possessing the doctrinal or regulatory tools to act on cases that fall into the autonomous-collusion category described in Part III.

⁵Regulation (EU) 2022/1925 (Digital Markets Act), 2022 O.J. (L 265) 1.

⁶Competition (Amendment) Act, No. 9 of 2023 (India) (amending the Competition Act, No. 12 of 2002).

⁷Competition Commission of India, Market Study on the Digital Economy (2025); see also Invisible Cartels in Digital Markets: Algorithmic Pricing and the Limits of Competition Law, CICTL Blog (2026).

The proposed Digital Competition Bill, developed following the Committee on Digital Competition Law's 2024 report, represents the most concrete legislative response under discussion. Modelled loosely on the EU's Digital Markets Act, it would impose ex-ante conduct obligations on a defined category of “Systemically Significant Digital Enterprises,” shifting away from the case-by-case, harm-proven-after-the-fact model of Section 3 enforcement toward upfront structural rules for the largest digital platforms. As of this writing, the Bill has not been enacted, and its eventual scope and thresholds remain subject to ongoing consultation.

VIII. TOWARDS A WORKABLE FRAMEWORK

This paper does not argue that Section 3's agreement requirement should be discarded. Requiring proof of coordination, rather than punishing firms merely for pricing in parallel with competitors, remains sound competition policy — parallel pricing can, after all, simply reflect a competitive market responding efficiently to the same underlying conditions, and treating all price parallelism as presumptively unlawful would chill exactly the kind of responsive, efficient pricing that benefits consumers. The correct target is not algorithmic pricing as such, but the narrower set of circumstances under which algorithms produce coordination that would not otherwise be sustainable.

Two complementary reforms would help close the gap identified in this paper. First, Indian courts and the CCI should clarify, ideally through a formal guidance note, that where independent firms' pricing algorithms can be shown to systematically monitor and respond to each other's real-time prices — as opposed to merely responding to underlying demand and supply conditions — this pattern of conduct itself can constitute sufficient circumstantial evidence of a concerted practice, shifting the evidentiary burden onto the firms to show their pricing convergence reflects genuine independent competition rather than algorithmic coordination. This would not require legislative amendment, only a doctrinal clarification building on existing concerted-practice principles already recognised in Indian and comparative law.

Second, for the narrower category of genuinely autonomous algorithmic collusion, where no evidence of even indirect algorithmic monitoring of competitors exists but stable supra-competitive pricing nonetheless emerges, an agreement-based framework may simply be the wrong tool regardless of how creatively it is interpreted. Here, the CCI's existing market study function and the proposed Digital Competition Bill's ex-ante obligations for the largest

platforms represent the more promising path — not because every digital platform requires such oversight, but because the handful of platforms large enough to structure a market's pricing dynamics are precisely the ones capable of triggering this kind of autonomous coordination in the first place.

IX. CONCLUSION

Samir Agrawal was, on its own facts, correctly decided: a single platform's dynamic pricing algorithm responding to genuine supply and demand conditions is not a cartel, and treating it as one would misunderstand both the technology and the economics involved. But the case should not be read as having closed the door on algorithmic collusion as a competition law problem in India. The scenario Indian doctrine has not yet been tested against — independent competing platforms whose separate algorithms learn to track each other's prices and settle into a stable, supra-competitive equilibrium — remains a live and, on current trends, increasingly likely feature of India's digital markets. The CCI's own 2025 market study suggests the regulator is aware of this gap. What remains is the harder work of translating that awareness into either a clearer doctrinal test for algorithmic concerted practice, or a targeted ex-ante framework of the kind currently under discussion in the proposed Digital Competition Bill. Until one or both of these develops, Indian competition law risks treating the most sophisticated form of price coordination as the one it is least equipped to see.