



Competition law challenges in India's digital payment ecosystem: Dominance, interoperability, and regulatory overlaps competition law

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Abstract

India's digital payment landscape, largely propelled by the Unified Payments Interface (UPI), has witnessed remarkable expansion, processing over 15 billion transactions per month as of early 2026 and significantly advancing financial inclusion. However, this rapid growth has also given rise to critical competition law concerns, including the market dominance of a few major players such as Phone Pe, Google Pay, and Paytm; persistent challenges in achieving full interoperability despite UPI's design; and substantial regulatory overlaps involving the Competition Commission of India (CCI), the Reserve Bank of India (RBI), and emerging frameworks such as the Digital Competition Bill (DCB). This research paper adopts a doctrinal approach, integrating theoretical perspectives, an extensive literature review, comparative regulatory analysis of the EU and the US, detailed case studies, and judicial interpretations to examine these issues. It identifies key enforcement gaps related to network effects, data concentration, and inter-regulatory conflicts. The study aims to propose a robust and coherent regulatory framework that balances the promotion of competition with the preservation of innovation. Key recommendations include the introduction of ex-ante obligations for systemically significant digital intermediaries (SSDEs), mandatory data-sharing mechanisms, enhanced coordination among regulatory authorities, and structural reforms of the National Payments Corporation of India. Drawing on international best practices, the paper advocates for proactive regulatory intervention to prevent the entrenchment of oligopolistic market structures and to ensure the long-term sustainability of India's digital payments ecosystem.

Keywords: Competition law, digital payments, UPI, market dominance, interoperability, fintech regulation, big tech platforms, regulatory overlaps

Introduction

The demonetization policy introduced in November 2016 marked a pivotal shift in India's financial landscape, triggering a rapid transformation in digital payments. The Unified Payments Interface (UPI), launched by the National Payments Corporation of India in 2016, emerged as the backbone of this transformation by enabling real-time, interoperable fund transfers through mobile applications without requiring traditional banking details. By March 2026, UPI transactions had surged to approximately 15–20 billion per month, accounting for over 80% of retail digital payments. This growth has been supported by the JAM trinity (Jan Dhan–Aadhaar–Mobile), onboarding more than 500 million active users and bridging the urban–rural divide. As a result, dependence on cash has declined significantly—from nearly 90% to below 50% of total transactions. Despite these achievements, serious competition concerns have emerged. Market concentration remains high, with PhonePe (47%), Google Pay (37%), and Paytm (11%) collectively controlling over 95% of transaction volume. Dominance is reinforced not only by scale but also by data asymmetries, predatory pricing strategies (such as cashback incentives), and ecosystem bundling—particularly integration with Android.

Moreover, interoperability challenges persist despite UPI's design goals, partly due to policy constraints on non-bank participants and fragmentation across digital wallets. Regulatory complexity further compounds the issue, involving overlapping mandates of the Competition Commission of India, Reserve Bank of India, and new frameworks such as the Digital Personal Data Protection Act, 2023 and the proposed Digital Competition Bill (DCB).

Conflicts arise between ex-post antitrust enforcement and prudential oversight under the Payment and Settlement Systems Act, 2007.

Recent global developments, including fintech cooperation prospects following the re-election of Donald Trump, have renewed discussions around open banking and cross-border payment integration. However, domestic structural challenges persist. Without timely intervention, India's digital payments ecosystem risks replicating global Big Tech monopolistic patterns, potentially stifling innovation crucial for achieving the vision of a \$5 trillion economy and Viksit Bharat 2047.

Theoretical Background

Traditional competition law is rooted in industrial organization economics, which assumes relatively static markets with clearly defined barriers to entry. Digital payment ecosystems, however, challenge these assumptions through features such as network effects, multi-sided platforms, and near-zero marginal costs.

Network effects play a central role. Direct network effects arise when the value of a UPI application increases with user adoption—for instance, wider merchant acceptance of PhonePe QR codes enhances its utility. Indirect network effects link different user groups (payers and merchants), creating “tipping points” where markets evolve into winner-takes-most structures.

Such dynamics lead to the formation of “data moats,” where incumbents leverage transaction data for fraud detection, personalized services, and merchant analytics—creating high entry barriers. Several theories of competitive harm emerge in this context:

1. **Leveraging Theory:** Dominance in one market extends into adjacent markets (e.g., integration of payment apps with the Android ecosystem).
2. **Predatory Pricing:** Platforms use below-cost pricing strategies (cashbacks) to eliminate competitors and later recover losses through cross-selling.
3. **Self-Preferencing:** Platforms prioritize their own services, distorting consumer and merchant choice.

The interoperability theory advanced by scholars such as Stanley Liebowitz and Stephen Margolis supports open standards to reduce lock-in effects, as seen in telecommunications (e.g., GSM). However, India’s regulatory constraints—such as volume caps for non-bank entities—moderate these benefits. Regulatory overlap further complicates governance. Digital payments intersect with multiple domains: consumer protection, financial stability, competition law (under Section 4 of the Competition Act, 2002), and data governance. Competing theoretical perspectives also shape policy debates:

1. **Brandeisian Approach:** Warns against excessive concentration (“curse of bigness”).
2. **Schumpeterian View:** Argues that temporary monopolies foster innovation through creative destruction.

India’s reliance on ex-post enforcement faces limitations due to “envelope theorem” effects, where small anti-competitive practices scale massively due to large datasets. In contrast, ex-ante regulatory models—such as the EU’s Digital Markets Act—introduce preventive obligations. Behavioral economics also highlights how default settings and status quo bias reinforce digital dominance.

Literature Review

The Unified Payments Interface (UPI), as the cornerstone of India’s digital payment ecosystem, has attracted significant academic and policy attention due to its rapid growth and evolving competition challenges. Following demonetization in 2016, UPI transaction volumes expanded dramatically—from negligible levels to over 15 billion monthly transactions by 2026—prompting extensive scholarly inquiry into market concentration, regulatory adequacy, and antitrust implications.

Existing literature emphasizes three major themes

1. **Market Concentration and Platform Dominance:** Studies highlight the increasing concentration of market power among a few dominant platforms, raising concerns regarding entry barriers, data monopolization, and long-term competition.
2. **Regulatory Frameworks and Gaps:** Research critiques the fragmented regulatory architecture involving the Competition Commission of India, Reserve Bank of India, and other bodies, pointing to coordination challenges and enforcement inefficiencies.
3. **Digital Market Dynamics and Network Effects:** Scholars analyze how network externalities,

interoperability constraints, and platform economics influence competitive outcomes in digital payment markets.

Comparative studies draw lessons from jurisdictions such as the European Union and the United States, particularly regarding ex-ante regulation, data-sharing mandates, and platform neutrality. These insights are increasingly relevant for India as it navigates the balance between fostering innovation and ensuring fair competition. Drawing upon peer-reviewed publications, policy studies, rulings of the Competition Commission of India, and international comparisons up to March 2026, this review synthesizes key contributions on dominance, interoperability, and regulatory overlap in digital payments.

Abuse and Dominance in Digital Payments

Early scholarship focused on the use of leveraging strategies by Big Tech firms. A 2021 study by Wolters Kluwer analyzing the CCI’s investigation into Google Pay highlights how the dominance of Android (with an estimated 95% market share) enables pre-installation through revenue-sharing agreements (RSAs) with OEMs. This creates a status quo bias, limiting consumer choice and foreclosing competition from rivals such as PhonePe.

The CCI’s prima facie findings suggest that such financial arrangements may lead to de facto exclusivity, distorting competition in the “market for UPI-facilitating applications.” Similarly, the CCI Journal on Competition Law and Policy (2020) evaluates abuse of dominance under Section 4, highlighting evidentiary challenges in proving data-driven market power, where incumbents leverage transaction data to develop superior AI systems for fraud detection and personalization. A 2020 study by CUTS-CIER further argues that the dual role of the National Payments Corporation of India—as both operator and promoter—may create structural bias, particularly in favor of BHIM, thereby disadvantaging non-bank payment service providers. The study also notes high market concentration, with Herfindahl–Hirschman Index (HHI) levels exceeding 3000. Predatory pricing has also been identified as a key concern. Platforms such as PhonePe and Paytm invested over ₹10,000 crores in cashback incentives between 2018 and 2024, often pricing below average variable cost. However, under effects-based analysis, such conduct may evade per se illegality if long-term recoupment strategies (e.g., cross-selling financial products) are demonstrated.

Recent literature emphasizes emerging harms unique to digital markets. Khanna & Associates (2025) ^[6] highlights the risks of self-preferencing, suggesting that stricter enforcement could result in significant penalties (up to 10% of turnover). Additionally, analyses in LiveLaw (2026) examine AI-driven data foreclosure, where platforms such as Amazon Pay leverage merchant data while limiting interoperability for smaller businesses.

Research Questions

1. To what extent do dominant UPI players abuse market power through leveraging, predatory pricing, and data advantages? Is Section 4 of the Competition Act, 2002 adequate to address such digital-specific harms?
2. What are the key interoperability barriers in UPI infrastructure (e.g., volume caps, wallet silos), and how do they affect entry and competition?

3. How do regulatory overlaps between the Competition Commission of India, Reserve Bank of India, DPDP Act, and the Digital Competition Bill (DCB) lead to enforcement inconsistencies?
4. What lessons can India draw from international frameworks such as the EU Digital Markets Act, the U.S. antitrust regime under the Sherman Act, and the UK's open banking model?
5. What integrated policy reforms can best balance competition, innovation, and financial stability in the digital payments ecosystem?

Research Objective

This study aims to critically examine competition law challenges—namely dominance, interoperability, and regulatory overlaps—in India's digital payments ecosystem. It seeks to develop evidence-based policy recommendations for a flexible, multi-stakeholder regulatory framework that sustains the inclusive growth of the Unified Payments Interface while addressing emerging oligopolistic risks.

Research Methodology

This research adopts a doctrinal (black-letter law) methodology, which focuses on the systematic analysis and interpretation of legal texts. This approach is particularly suitable for competition law, as it allows for an in-depth examination of statutes, judicial precedents, regulatory guidelines, and policy frameworks.

The study employs a multi-layered qualitative design, including:

1. **Legal Analysis:** Examination of the Competition Act, 2002, RBI regulations, and the proposed DCB.
2. **Case Law Review:** Analysis of CCI decisions and enforcement trends.
3. **Comparative Study:** Insights from the EU, U.S., and UK regulatory frameworks.
4. **Descriptive Analysis:** Use of official datasets to trace UPI's growth since 2016, the role of NPCI, and market concentration (e.g., PhonePe 47%, Google Pay 37%).

This methodology enables identification of doctrinal gaps and regulatory inefficiencies in addressing digital market dynamics.

Legal Issues

India's digital payments ecosystem, dominated by UPI, presents complex competition law challenges under the Competition Act, 2002. These issues—particularly dominance, interoperability, and regulatory overlap—are intensified by strong network effects, data asymmetries, and institutional fragmentation.

1. Abuse of Dominant Position (Section 4, Competition Act, 2002)

Section 4(1) prohibits abuse by an enterprise or group holding a dominant position, defined as the ability to operate independently of competitive forces or affect competitors and consumers in its favor. Market definition plays a critical role. The Competition Commission of India has identified the “market for UPI-facilitating applications” as distinct from underlying payment infrastructure. Within this market, leading players—PhonePe (47%), Google Pay (37%), and Paytm (11%)—collectively exceed traditional dominance thresholds. High concentration is reflected in

HHI levels above 3200, indicating a highly concentrated market structure. Key concerns include:

1. Leveraging dominance from adjacent markets (e.g., Android ecosystem)
2. Predatory pricing through sustained cashback strategies
3. Data-driven competitive advantages creating entry barriers
4. Self-preferencing and ecosystem integration

These factors challenge traditional competition law tools, which were designed for static markets rather than dynamic, data-driven digital ecosystems.

Digital Payments' Manifestations of Abuse of Dominance

The application of Section 4 of the Competition Act, 2002 to digital payment markets reveals distinct forms of anti-competitive conduct shaped by platform economics, data concentration, and ecosystem integration.

Leveraging from Adjacent Markets

Sections 4(2)(a)(i) (imposition of unfair conditions) and 4(2)(e) (leveraging dominance) are implicated where firms extend power from one market into another. The dominance of Android (approximately 95% market share) enables Google Pay to secure preferential positioning through pre-installation arrangements and revenue-sharing agreements (RSAs) with original equipment manufacturers (OEMs). In Case No. 39/2020, the Competition Commission of India observed prima facie foreclosure effects, noting that default settings create a status quo bias, whereby users tend to retain pre-installed applications. Unlike traditional tying arrangements, digital defaults generate path dependence, reinforcing market dominance without explicit coercion.

Predatory Pricing

Section 4(2)(a)(ii) addresses predatory pricing, defined as selling below cost with the intent to reduce competition. Digital payment platforms such as PhonePe and Paytm reportedly invested over ₹15,000 crores in cashback incentives between 2018 and 2025. These pricing strategies often fall below average variable costs (with transaction fees around 0.1%) and are later recouped through cross-selling, particularly high-interest merchant lending and financial services. However, in zero-price markets, proving exclusionary intent and consumer harm under the effects-based test becomes significantly more complex, posing enforcement challenges for the Competition Commission of India.

Data Moats and Self-Referencing

Access to large-scale transaction data (exceeding billions of records) enables platforms to develop advanced AI capabilities for fraud detection, personalization, and credit scoring. This creates data moats, which act as structural entry barriers and may be interpreted as a form of denial of market access under Section 4(2)(c).

Additionally, platforms may engage in self-referencing by prioritizing their own in-app services or wallets, thereby influencing merchant and consumer choices. This distorts competitive neutrality and limits visibility for rival applications.

Regulatory enforcement in this domain is further complicated by the Digital Personal Data Protection Act, 2023, particularly its consent-based data-sharing requirements, which may restrict access to data necessary for ensuring a level playing field.

NPCI's Institutional Dominance

As the central operator of the Unified Payments Interface (UPI), the National Payments Corporation of India occupies a structurally dominant position within India's digital payments ecosystem. Concerns arise that this dual role—as both infrastructure provider and ecosystem promoter—may lead to discriminatory practices against non-bank payment service providers, particularly through preferential promotion of the BHIM application. Such conduct may raise issues under Section 4 of the Competition Act, 2002, especially in relation to abuse of dominant position through discriminatory practices and denial of market access. The absence of strict institutional separation between governance and market participation intensifies concerns regarding neutrality in platform administration.

Enforcement Gaps

A key enforcement limitation in India's digital competition framework is the increasing reliance on effects-based economic analysis, particularly after recent amendments and evolving CCI jurisprudence. Start-ups and smaller firms often face evidentiary burdens requiring advanced econometric proof of anti-competitive harm, including pricing pressure and foreclosure effects. In practice, such requirements are difficult to meet in dynamic digital markets characterized by zero-price services and indirect monetization models.

Additionally, the Competition Commission of India's remedial toolkit remains largely behavioral rather than structural, relying on:

- Cease-and-desist orders
- Monetary penalties (up to 10% of global turnover)

However, there is limited use of structural remedies, such as divestiture or functional separation, which are often necessary in platform-based markets to address entrenched dominance.

2. Interoperability Barriers (Sections 3(4) and 4(2)(c))

UPI's Promise vs. Reality

The Unified Payments Interface was designed as an interoperable real-time payment infrastructure, enabling seamless transfers across applications (e.g., from PhonePe to Google Pay). Despite this design, several structural and regulatory barriers limit full interoperability.\

Volume Caps

The National Payments Corporation of India has historically imposed a 30% market share cap on non-bank payment service providers (PSPs), aimed at preventing excessive concentration. Although introduced as a risk-management measure, such restrictions may indirectly limit growth and raise concerns under Section 4(2)(c) (denial of market access), particularly for firms like Paytm.

Wallet Fragmentation

Closed-loop ecosystems such as Amazon Pay and other wallet-based platforms create switching costs and reduce interoperability. This fragmentation weakens UPI's core objective of seamless cross-platform payments and may constitute exclusive dealing arrangements under Section 3(4)(e) of the Competition Act, 2002.

BBPS and QR Standardization Issues

Variations in QR standards (static vs. dynamic) and the dominance of the NPCI-led billing infrastructure (BBPS)

create inefficiencies for merchants and increase compliance costs. Limited competition in bill aggregation services may slow innovation and restrict alternative payment solutions.

Technical Barriers

Issues such as fragmented KYC frameworks, API rate limiting, and inconsistent technical protocols create operational friction for seamless peer-to-peer (P2P) and person-to-merchant (P2M) transactions.

Legal Interpretation

Such practices may fall under:

- **Section 3(4):** Anti-competitive agreements (exclusive dealing, refusal to supply)
- **Section 4(2)(c):** Denial of market access

The absence of a statutory interoperability obligation—similar to the EU Digital Markets Act—creates enforcement uncertainty. While judicial developments (including Delhi High Court observations in 2023) emphasize openness in digital infrastructure, a codified interoperability mandate remains absent.

Impact

These barriers contribute to:

1. High entry thresholds due to network effects
2. Reduced innovation among fintech startups
3. Increased operational costs for SMEs (estimated 20–30%)
4. Regulatory Overlaps and Jurisdictional Conflicts

Institutional Landscape

India's digital payments ecosystem is governed by multiple overlapping authorities:

1. Competition Commission of India – ex-post competition enforcement
2. Reserve Bank of India – payment system regulation under the Payment and Settlement Systems Act, 2007
3. Digital Personal Data Protection Act, 2023 – data governance and consent frameworks
4. Draft Digital Competition Bill (DCB), 2024 – proposed ex-ante regulation of digital gatekeepers
5. Additional regulators such as TRAI and MCA in overlapping digital domains

Manifestations of Conflict

1. Forum Shopping

Jurisdictional ambiguity allows cases (e.g., Google Pay investigations) to shift between CCI and RBI depending on legal framing—competition vs. licensing.

2. Normative Conflict

The CCI focuses on market fairness, while the RBI prioritizes systemic financial stability, leading to inconsistent regulatory objectives.

3. Enforcement Duplication

Data protection rules under DPDP may conflict with competition remedies requiring data sharing. Similarly, the DCB's self-preferencing prohibitions overlap with Section 4 enforcement.

4. Coordination Deficit

Despite a 2019 Memorandum of Understanding between the CCI and RBI, operational coordination remains limited, as noted by the Parliamentary Standing Committee (2023) ^[12].

Legal Consequences

India's constitutional framework (Article 246) permits concurrent jurisdiction, but lack of harmonized interpretation results in inconsistent rulings and regulatory uncertainty. This increases litigation risks and may delay innovation in fintech markets.

Broader Implications

India's ambition of Viksit Bharat 2047 depends heavily on maintaining a balance between competition, innovation, and financial stability. Without regulatory coherence, UPI's inclusive success—serving over 500 million users—risks being undermined by oligopolistic consolidation.

Recommendations

A hybrid ex-ante and ex-post regulatory framework is essential:

1. Strengthen Ex-Ante Regulation (DCB Framework)

- Define Systemically Significant Digital Intermediaries (SSDEs)
- Impose interoperability and data portability obligations
- Introduce structural remedies for persistent violations

2. Ensure Full Interoperability

- Remove or sunset market share caps by 2026–27
- Mandate open APIs and uniform QR standards
- Encourage competitive BBPS participation

3. Institutional Coordination Reform

- Establish a statutory CCI–RBI–DPDP coordination council
- Create a unified fintech regulatory sandbox
- Harmonize data-sharing rules under clear exemptions

4. Strengthen Enforcement Capacity

- Introduce sector-specific market studies for UPI
- Adopt structural remedies in repeated abuse cases
- Improve economic evidence standards for digital markets

Conclusion

India's digital payments ecosystem, anchored by the Unified Payments Interface, represents one of the most successful large-scale financial inclusion systems globally. However, as transaction volumes exceed 15 billion per month and concentration increases among a few dominant players such as PhonePe, Google Pay, and Paytm, the risks of market foreclosure, regulatory fragmentation, and data-driven dominance intensify. Without timely reform, India risks replicating global Big Tech monopolistic structures in a sector that is foundational to its digital economy. A coordinated regulatory framework—balancing competition, innovation, and stability—is therefore essential to ensure that UPI continues to function as an inclusive public digital infrastructure rather than evolving into a concentrated oligopolistic market.

References

1. Whish R, Bailey D. *Competition Law* (10th ed.). Oxford University Press, 2021.
2. Janis MD. *European Union Competition Law*. Oxford University Press, 2020.
3. Somanathan VS, Verma S. *Competition Law in India*. Oxford University Press, 2019.

4. Competition Commission of India. *CCI Journal on Competition Law and Policy: Competition Issues in Digital Platforms*. New Delhi: CCI, 2020.
5. Wolters Kluwer. *Competition law implications of Google Pay investigation in India*. Wolters Kluwer Legal Reports, 2021.
6. Khanna & Associates. *Self-preferencing and antitrust enforcement in digital markets*. Mumbai: Legal Policy Review, 2025.
7. Liebowitz S, Margolis S. Network effects and market structure in digital platforms. *Journal of Economic Perspectives*, 1994;8(2):133–150. <https://doi.org/10.1257/jep.8.2.133>
8. Competition Commission of India. *Market study on the telecom sector in India*. New Delhi: CCI, 2021, 45–78.
9. Competition Commission of India. *Advocacy booklet on competition in digital markets*. New Delhi: CCI, 2022, 12–34.
10. Reserve Bank of India. *Payment system vision document 2021–2025*. Mumbai: RBI, 2021, 5–27.
11. National Payments Corporation of India. *UPI product statistics and annual reports*. Mumbai: NPCI, 2023–2026, 1–56.
12. Parliamentary Standing Committee on Finance. *Report on anti-competitive practices by big tech companies*. New Delhi: Parliament of India, 2023, 18–49.
13. Ezrachi A. *Virtual competition: The promise and perils of the algorithm-driven economy*. Harvard University Press, 2018, 101–140.
14. Crémer J, de Montjoye YA, Schweitzer H. *Competition policy for the digital era*. European Commission Report, 2019, 20–65.
15. U.S. Federal Trade Commission. *Big Tech platform competition investigation report*. Washington, DC: FTC, 2023, 10–52.
16. European Commission. *Digital Markets Act (DMA): Explanatory memorandum*. Brussels, 2022, 1–30.
17. Reserve Bank of India. *Digital payment ecosystem in India: Trends and challenges*. RBI Bulletin, 2023, 14–41.
18. Competition Law Review Committee. *Report on competition law reforms in India*. Ministry of Corporate Affairs, 2019, 55–92.