

Research on Antitrust Regulation of the Internet Platform Economy

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ABSTRACT

While driving global growth, the platform economy has spawned novel monopoly risks such as data monopolies and algorithmic collusion. This paper, based on landmark domestic and international cases (e.g., the EU Apple Tax case, China's Meituan "Exclusive Dealing" case), reveals the challenges posed by platform characteristics to traditional antitrust theories and the resulting regulatory conflicts. The research indicates that a synergistic approach combining legal precision, enhanced enforcement efficacy, and innovative technological oversight is needed to break the deadlock. This will facilitate the construction of a Chinese governance system characterized by "Prevention as the Priority, Punishment as the Supplement, and Technology as the Enabler."

KEYWORDS

Internet platform economy; Antitrust regulation; Data-driven monopoly; Algorithmic collusion; Regulatory approach

1 Platform economy antitrust regulation: problem statement and research basis

1.1 Research background and significance

Leveraging technological innovation and novel business models, the internet platform economy has become a core engine of global economic growth. As of 2024, internet platform enterprises occupy 6 out of the top 10 spots in global market value rankings (e.g., Apple, Microsoft, Amazon), with businesses spanning diverse fields such as e-commerce, social networking, and cloud computing. However, while creating convenience, the platform economy has also fostered market monopoly risks—for instance, a food delivery platform restricting merchants from operating on multiple platforms through "exclusive dealing" (2021 Meituan case), or an e-commerce platform employing big data to implement price discrimination against frequent users (2023 platform "algorithmic price discrimination" case). Against this backdrop, systematic research on antitrust regulation holds urgent practical significance for maintaining fair competition, safeguarding consumer rights, and stimulating innovation vitality.

1.2 Research status

International: The EU focuses on the interplay between data control and market dominance (e.g., Facebook case); the US debates the definition of platform "relevant markets" (e.g., Google Search case).

Domestic: Emphasis is placed on the harms of platform network externalities (e.g., Alibaba case) and data lock-in hindering resource flow (e.g., CNKI case).

1.3 Research objectives and methods

To deconstruct the mechanisms generating data monopolies and algorithmic collusion through typical cases, and to construct an antitrust regulatory framework adaptable to the characteristics of multi-sided markets and dynamic competition.

2 The challenge of platform economy characteristics to antitrust theory

2.1 Concept definition and feature analysis

Definition: The internet platform economy is an economic form that uses digital technology as a nexus to connect users on both the supply and demand sides (e.g., e-commerce platforms connecting merchants and consumers), creating value through network effects.

Core Features:

Multi-sided market attributes

Data-driven nature (user behavior data optimizing algorithmic recommendations)

Dynamic competitiveness (e.g., Tik Tok disrupting the social media landscape within three years)

2.2 Adapting antitrust theory to the platform economy

Market Dominance Assessment: Requires incorporating user multi-homing costs and data control capabilities (e.g., a mapping platform controlling 70% of geographic data)

Typification of Monopolistic Conduct:

Algorithmic collusion (e.g., online travel platforms synchronizing price adjustments)
 Killer acquisitions (e.g., Meta's acquisition of Instagram allegedly killing potential competition).

3 Development dilemmas and monopoly risks in the internet platform economy

3.1 Global development trends

Market Scale: China's platform economy reached USD 8.3 trillion in 2024, a 12% YoY growth, accounting for over 15% of GDP. **Leading Enterprise Ecosystems:** Douyin (TikTok) boasts over 700 million daily active users, building market barriers through its "content platform + e-commerce + local services" ecosystem. **Risk Warning:** 62% of global platform enterprise mergers and acquisitions involve data asset acquisitions (e.g., a social platform acquiring a data analytics company).

3.2 Typical manifestations of monopolistic conduct

3.2.1 Monopoly agreements: technology-enabled covert coordination

Data Lock-in Agreements: A ride-hailing platform required cooperating automakers not to open vehicle location data to other platforms, deemed a competition restriction by the SAMR (2023 fine: CNY 120 million).

Algorithmic Tacit Collusion: Two major instant delivery platforms automatically matched delivery fee standards through algorithms, creating a "price following" effect (2024 joint admonition case).

3.2.2 Abuse of market dominance: multidimensional manifestations of power expansion

"Exclusive Dealing" Hegemony:

Alibaba Case (2021): The platform required merchants to exclusively settle on Tmall, causing a 30% decline in merchants on platforms like JD.com, resulting in a final fine of CNY 18.228 billion.

3.2.3 Concentration of undertakings: the "gradual effect" of innovation suppression

Meta Acquisition of Instagram (2012): At acquisition, Instagram had only 30 million users but was seen as a potential competitor threatening Facebook. The FTC sued 8 years later for "systematic acquisitions to kill innovation."

Didi-Uber Merger (2016): Post-merger market share exceeded 90%. Driver commission rates rose from 20% to 25% the following year, and user subsidies dropped by 40%.

3.3 Harm transmission of monopolistic conduct

Competition Ecosystem Destruction: An e-commerce platform's "exclusive dealing" squeezed the survival space of SMEs, leading to a 28% drop in mid-sized merchants on the platform within two years. **Consumer Welfare Erosion:** "Algorithmic price discrimination" caused loyal users to spend approximately CNY 500 more annually (2023 Consumer Association survey data). **Innovation Suppression:** "Killer acquisitions" in Silicon Valley reduced the survival rate of new social apps to less than 5% in recent years.

4 Lessons from international antitrust regulation practices

4.1 United states: judicial-led ex post deterrence model

4.1.1 Google search monopoly case (2020)

Economic Debate on Market Definition: Scholars diverge on whether general search constitutes an independent relevant market. Posner (2021) argues that vertical search platforms (e.g., Amazon for products) serve distinct consumer intent, thus belonging to separate markets. Conversely, Evans & Schmalensee (2022) counter that overlapping functionalities create competitive constraints, necessitating a broader "digital attention market" definition. FTC's econometric analysis revealed Google's search traffic dropped by less than 5% when Amazon increased product search ads, suggesting low cross-elasticity—a key factor in the court's preliminary ruling.

Core Antitrust Focus: Entry blocking effects built through exclusive agreements. The DOJ alleged Google paid massive fees (e.g., billions annually to Apple) to make its search service the default option on key digital entry points (Default Setting), significantly raising competitors' user acquisition costs (multi-homing costs). This leveraged its influence in mobile OS and browser markets to erect insurmountable barriers in the general search market.

Legal Challenge: Complexity of "Relevant Market" definition. Google argued it faced broad competition (e.g., Amazon product search, Facebook newsfeed). The core dispute was whether general search constituted a distinct relevant market. The DOJ emphasized its uniqueness in fulfilling core "information navigation" needs and its distinct ad revenue model.

Ruling Logic & Potential Impact: Case ongoing. A DOJ win could lead to remedies like banning exclusive agreements, mandating competitor choice screens, or even divestiture, structurally impacting tech industry defaults and competition. This case highlights the US model's reliance on lengthy, costly ex post litigation against entrenched market power in complex digital markets. **Economic Analysis of Default Settings:** The DOJ's expert witness Dr. Carl Shapiro demonstrated

that default placements capture >85% of user engagement (DOJ Exhibit 34, 2023). This creates a self-reinforcing data advantage: more usage → better algorithms → greater user retention → higher advertising rates. Google's internal memo revealed a 40:1 ROI on default placement payments to Apple (2021 FTC subpoena [+]).

4.1.2 Amazon "most favored nation" clause case (2019)

Core Antitrust Focus: Covert form of vertical price restriction. Amazon required third-party sellers to offer the lowest prices on its platform compared to all other sales channels. This superficially ensured low prices for consumers but restricted sellers' ability to price flexibly elsewhere (e.g., their own sites, other platforms), weakening inter-platform price competition and potentially inflating base prices or suppressing other platforms.

Legal Challenge: Assessing competitive effects of vertical restraints. Unlike direct horizontal price-fixing, the competitive impact (efficiency promotion vs. competition reduction) requires nuanced economic analysis. The EC found it significantly limited sellers' multi-channel freedom and harmed cross-platform competition.

Enforcement Characteristic: The EU fined Amazon first, followed by a US FTC investigation, showcasing the cross-border nature of digital monopolies and jurisdictional convergence on the same conduct. It illustrates the US model grappling with non-traditional, vertical restraints.

4.2 European union: ex ante regulatory path via systematic legislation

4.2.1 Apple "app store tax" case (2021)

DMA Enforcement Mechanics: Gatekeepers must submit monthly compliance reports detailing data flows between core services (Art. 9(3)). Non-compliant platforms face progressive penalties: 5% of daily turnover for initial breaches, escalating to 20% for systemic violations (Case AT.40452, Apple Compliance Review 2023). Meta's appeal against data commingling restrictions was rejected by the EU Court in May 2024, reinforcing DMA's extraterritorial jurisdiction.

Core Antitrust Focus: Abuse of core gatekeeper platform access. Using the new Digital Markets Act (DMA), the EU designated Apple's App Store as a "Core Platform Service" of a "Gatekeeper." The core charge was Apple forcing the use of its in-app purchase system (IAP) with up to 30% commission ("Apple Tax"), while prohibiting developers from informing users about cheaper external options or providing links. This was deemed an abuse of dominance in iOS app distribution, bundling payment services, and restricting developer/consumer choice.

Legal Innovation: Ex ante regulation & conduct prohibitions. The DMA defines "Gatekeeper" criteria upfront (user size, platform importance, entrenched position) and directly prohibits behaviors deemed harmful to fair competition and innovation (e.g., self-preferencing, data commingling, restricting multi-homing, unfair terms). It avoids proving traditional "dominance" in a specific market, instead imposing rules based on "Gatekeeper" status.

Penalty Logic & Impact: The EU required Apple to open third-party payment channels and allow external links. Violations of DMA rules can incur fines up to 20% of global annual turnover. This landmark DMA enforcement case pioneers an ex ante, structural regulatory model for systemic platform power, directly impacting Apple's business model and revenue (affecting ~USD 20 billion annually). It aims to break platforms' absolute control over key access points within their ecosystems.

4.2.2 facebook data abuse case (2020)

Core Antitrust Focus: Data as a source and means of abusing market power. Initiated under GDPR (data privacy rules) for insufficient consent in collecting/merging WhatsApp user data, its antitrust significance lies in the EC's subsequent investigation explicitly stating Facebook's massive collection and exclusive control of user data significantly strengthened its dominance in social networking and online advertising markets. Data scale, scope, and uniqueness were seen as key elements reinforcing and maintaining dominance.

Enforcement Impact: This case spurred the DMA's inclusion of strict data usage/sharing rules, requiring Gatekeepers to avoid commingling user data across services for unfair advantage and to provide data portability with user consent. It reflects the trend of directly regulating data as a key antitrust factor.

4.3 Lessons learned & experience revelation

4.4 Drawing on international experience

(Repeats the table above)

Dimension	International Practice	China Adaptation Plan
Legal Framework	EU DMA Ex Ante Regulation	Formulate "Platform Economy Antitrust Regulations"
Technical Oversight	US FTC Algorithm Review Team	Establish Digital Economy Antitrust Tech Expert Group
Cross-border Collaboration	US-EU Enforcement Mutual Recognition	Sign Data Forensics Agreements with RCEP Nations

5 The realities of China's antitrust regulation and directions for breakthrough

5.1 Institutional framework and enforcement practice

The 2022 amendment to the *Anti-Monopoly Law* added a dedicated chapter on the platform economy, explicitly prohibiting "monopolistic conduct implemented using data, algorithms, and technological means." Supporting *Guidelines for Anti-Monopoly in the Platform Economy* refined "relevant market" definition, incorporating factors like "user stickiness" and "multi-homing costs."

5.1.1 Meituan case (2021)

Core Antitrust Focus: Platform-enforced "exclusive dealing." SAMR found Meituan abused its dominant position in the online food delivery platform market (key evidence: high market share, strong market control, substantial financial resources, highly dependent merchant resources) by imposing punitive measures (e.g., increased commission rates, suspended services, reduced delivery zones, canceled promotions) to force merchants into exclusive cooperation agreements, restricting them from opening shops, operating, or promoting on rival platforms.

Legal Challenge & Breakthrough: "Abuse of Market Dominance" (restricting transactions) determination. Successfully defined the relevant market (Mainland China online food delivery platform services), assessed Meituan's dominance (market share >60%, high merchant/user multi-homing costs, high market concentration). Key breakthrough: detailing and proving Meituan's specific "exclusive dealing" tactics and their coercive effect on merchants, demonstrating exclusion/restriction of competition (e.g., limiting rival platform development).

Penalty Logic & Impact: Fine (CNY 3.442 billion) calculated at 3% of previous year's China sales (CNY 117 billion), demonstrating the AML's deterrent power. Meituan was also ordered to fully refund exclusive cooperation deposits (CNY 1.289 billion). This case is a landmark ruling against abuse of dominance in the platform economy, clearly establishing the illegality of "exclusive dealing," freeing merchant choice, and promoting competition. Its logic aligns closer with the EU's focus on abusive conduct, but the penalty basis remains the traditional "dominance + abuse" framework.

5.1.2 CNKI case (2022)

Core Antitrust Focus: Data lock-in and unfair pricing by a knowledge infrastructure platform. SAMR found CNKI held a dominant position in the Chinese academic journals online publishing services market. Abuses included:

(1) **Data Lock-in/Refusal to Deal:** Requiring exclusive cooperation with academic journal publishers, blocking necessary content resources from rivals, restricting academic resource flow and competition.

(2) **Unfairly High Prices:** Continuously and significantly raising database service prices for individuals and institutions (especially universities), with price hikes far exceeding cost increases, and lacking justification for trading terms (e.g., long-term bundling).

(3) **Legal Challenge & Breakthrough:** Application of "Essential Facilities" doctrine and determination of "unfairly high prices." Innovatively addressed CNKI's "essential facility" nature in academic resource access. Price analysis focused on the significant gap between price hikes and cost changes ("cost-price" divergence) and users' severely suppressed bargaining power. This provides crucial precedent for tackling monopolistic pricing by knowledge/data platforms.

(4) **Penalty Impact (Rectification Focused):** Considering knowledge service particularity, SAMR mandated cessation of violations (including ending exclusive agreements) and comprehensive rectification. CNKI committed to: opening direct registration for individuals, lowering prices (avg. 18% reduction), optimizing pricing, and protecting author rights. This case pioneered the handling of data monopoly and pricing issues in academic information platforms, highlighting antitrust's role in ensuring fair knowledge access and academic dissemination.

5.2 Analysis of structural conflict

5.2.1 Legal rule Lag

Lack of quantitative standards for data market dominance (e.g., a mapping platform controlling >70% data share cannot be directly deemed a monopolist).

Ambiguous legal qualification of algorithmic collusion (e.g., a food delivery platform and merchants "tacitly" adjusting fees via algorithms).

5.2.2 Enforcement capacity bottlenecks

Nationwide, fewer than 200 antitrust enforcement personnel possess data forensics capabilities.

Cross-departmental data sharing barriers lead to "algorithmic price discrimination" investigations taking up to 18 months.

5.3 Improvement pathways

5.3.1 Legal precision

Formulate *Guidelines on Antitrust in Data Markets*, clarifying methods for calculating data market shares (e.g., indicators like user data volume, data processing capability).

Establish an algorithm filing system requiring platforms to conduct competition impact assessments for core algorithms.

5.3.2 Enhancement of enforcement efficacy

Establish a "Digital Economy Antitrust Bureau" under SAMR, staffed with legal and data science interdisciplinary talent.

Create a cross-departmental case consultation mechanism ("Market Regulation + Cyberspace Administration + Public Security") for real-time data sharing.

5.3.3 Innovation in technological supervision

Develop an "Intelligent Monitoring Platform" using machine learning to identify monopoly signals like abnormal price fluctuations or data flow anomalies.

Pilot "Regulatory Sandboxes" in cities like Hangzhou and Shenzhen for inclusive and prudent supervision of emerging business models.

Cross-Case Comparative Analysis (Representative Cases: China, EU, US)

Table 1

Dimension	China (Meituan Case)	China (CNKI Case)	EU (Apple Tax Case)	US (Google Search Case)
Core Monopolistic Behavior	Abuse of Dominance: Restricting Transactions ("Exclusive Dealing")	Abuse of Dominance: Refusal to Deal, Unfairly High Prices	Abuse of Dominance: Bundling Payments, Restricting Steering (DMA Gatekeeper)	Monopolization: Exclusive Dealing, Maintaining Monopoly
Relevant Market Definition	Clear (Online Food Delivery Platforms)	Clear (Chinese Academic Journals Online Publishing)	Based on "Gatekeeper" status (iOS App Distribution)	Core Dispute (General Search vs. Broader Market)
Market Power Assessment	Traditional Dominance (Market Share etc.)	Traditional Dominance + Essential Facility Attribute	"Gatekeeper" Status (DMA Statutory Standard)	Traditional Monopoly Power (Market Share, Entry Barriers)
Behavior Focus	Restricting Downstream (Merchant) Choice	Locking Data Resources, Unreasonable Pricing	Controlling Core Access, Restricting Developer/User Choice	Controlling Key Entry Points, Raising Rival Costs
Legal Framework	<i>Anti-Monopoly Law</i> + Ex Post Penalty	<i>Anti-Monopoly Law</i> + Ex Post Penalty	<i>Digital Markets Act (DMA)</i> + Ex Ante Conduct Prohibitions	<i>Sherman Act Sec. 2</i> + Judicial Litigation
Enforcement Core Logic	Dominance + Exclusionary/ Restrictive Effects	Dominance + Essential Facility + Unfair Pricing	Violation of Statutory Gatekeeper Prohibited Conduct List	Illegally Obtaining/Maintaining Monopoly via Exclusion
Main Remedial Measures	Heavy Fine + Deposit Refund + Cessation	Order to Cease Conduct + Rectification (Openness, Price Cut)	Conduct Order (Open Payments, Allow Steering)	Pending (Possible: Injunction, Divestiture)
Salient Features/ Impact	Landmark Case Against "Exclusive Dealing"	First Case on Knowledge/ Data Platform Monopoly, Fair Access Focus	Milestone for Ex Ante Rules, Reshaping "Gatekeeper" Rules	Challenge of Traditional Judicial Model vs Digital Giants

5.3.4 Key points for China's adaptation

Direct experience proving coercion and harm of "exclusive dealing" (Meituan)

Local solutions for data/knowledge monopoly and pricing issues (CNKI).

Beneficial reference for ex ante rules, conduct prohibitions, gatekeeper system (EU DMA).

Judicial experience and cautionary tale on relevant market complexity (US Google).

6 Research conclusions and governance prospects

6.1 Research conclusions

Monopolistic behaviors in the platform economy exhibit technological sophistication and concealment (e. g., algorithmic collusion, data lock-in), necessitating an upgrade from traditional regulatory frameworks to a "Technology + Law" integrated model.

China needs to learn from the EU's ex ante regulation and US judicial experience to construct a new governance

system characterized by "Prevention as the Priority, Punishment as the Supplement, and Technology as the Enabler." Landmark cases like the Alibaba and Meituan penalties demonstrate the resolve for "strict regulation."

International comparative studies show that faced with novel challenges like data monopolies, algorithmic collusion, platform "exclusive dealing," and killer acquisitions, reliance solely on traditional, ex post penalty-focused antitrust models is insufficient (e.g., protracted US Google case, CNKI case handled but needing ex ante prevention). The EU's *Digital Markets Act (DMA)*, representing an ex ante regulatory model, provides a more proactive and efficient framework against systemic platform power through clear "Gatekeeper" criteria, prohibited conduct lists, and mandatory data portability/interoperability. While China has accumulated valuable enforcement experience in localized cases like Meituan "exclusive dealing" and CNKI data monopoly, effectively safeguarding market fairness, it still needs to deepen efforts in rule foresight (e.g., qualifying algorithmic collusion), technical supervision capability (e.g., monitoring algorithmic price discrimination), and systemic regulation of super-platform ecosystems (similar to the EU Gatekeeper regime). Therefore, constructing a distinctive Chinese antitrust regulatory system urgently requires synergistic advancement in legal precision (refining data/algorithm rules), enhancing enforcement efficacy (strengthening professional expertise and technical means), fully drawing lessons from the EU ex ante regulatory concepts and tools (e.g., conduct prohibition lists), and exploring a comprehensive "Prevention as the Priority, Punishment as the Supplement, Technology as the Enabler" governance path suited to national conditions. For instance, consider piloting Gatekeeper-like obligation rules for core platforms with "infrastructure" or "critical access point" attributes, requiring them to bear higher responsibilities for fair competition, data openness, and interoperability.

6.2 Future outlook

Future attention must be paid to monopoly risks in emerging fields like generative AI and the metaverse (e.g., AI agents automatically reaching price agreements).

It is recommended to establish an annual "Platform Economy Competition Status White Paper" system to support policy iteration with dynamic data. As generative AI deeply integrates into platform operations, prospective research on identifying and regulating frameworks for AI agent-driven collusion agreements is needed; the rise of the metaverse will introduce novel monopolistic and exclusionary behavior risks within closed virtual economies. Institutionally, exploring an annual "Platform Economy Competition Status White Paper" system is advisable, dynamically monitoring key indicators (e.g., expansion speed of leading platform ecosystems, data openness/sharing levels, SME survival metrics, user multi-homing ratios, survival rates of innovative apps) to provide precise data support for policy refinement. Simultaneously, deepen mechanisms for cross-border data forensics and antitrust enforcement cooperation with partners like RCEP nations to tackle the monopoly challenges posed by global digital platforms.

7 Emerging challenges and institutional innovation: antitrust perspectives on generative AI and the metaverse

7.1 Generative AI's antitrust implications

Autonomous pricing algorithms now employ reinforcement learning (RL) to optimize collusion. A 2024 MIT experiment demonstrated RL agents achieving tacit collusion 73% faster than rule-based systems, evading conventional detection. Proposed solutions include:

Algorithmic Auditing: Mandatory access to RL reward functions for regulators (OECD AI Principle 7.2).

Data Sandboxes: Synthetic market environments to test emergent collusion (e.g., EU's "SimuMarket" initiative).

7.2 Institutional innovations

China's regulatory sandbox in Hangzhou (Q1 2025) requires:

- (1) Algorithm impact assessments for real-time pricing models.
- (2) APIs for SAMR to monitor input data sources.
- (3) Quarterly stress tests simulating market shocks.

References

- [1] Ezrachi, A., & Stucke, M. E. (2016). *Virtual Competition*. Harvard University Press.
- [2] Wang, X. (2021). Challenges in Platform Economy Antitrust Supervision. *China Legal Science*, (4), 20 – 36.
- [3] Motta, M. (2004). *Competition Policy*. Cambridge University Press.
- [4] Mettam, G. R., & Adams, L. B. (2009). How to prepare an electronic version of your article. In B. S. Jones & R. Z. Smith (Eds.), *Introduction to the Electronic Age*(pp. 281- 304). E-Publishing Inc.
- [5] Organisation for Economic Co-operation and Development (OECD). (2020). *Abuse of Dominance in Digital Markets*. [Conference Paper/Report]
- [6] Cancer Research UK. (1975). *Cancer statistics reports for UK*.<http://www.cancerresearch.org/aboutcancer/statistics>.
- [7] OECD. (2020). *Abuse of Dominance in Digital Markets*[R/OL].