

## Retraction

# Retracted: Legal Governance of Internet Platform Monopoly Based on Big Data Analysis: A Review of Alibaba Case

### Mobile Information Systems

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This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

- (1) Discrepancies in scope
- (2) Discrepancies in the description of the research reported
- (3) Discrepancies between the availability of data and the research described
- (4) Inappropriate citations
- (5) Incoherent, meaningless and/or irrelevant content included in the article
- (6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

### References

- [1] H. Lin, X. Feng, D. Wu, F. Ji, and X. Li, "Legal Governance of Internet Platform Monopoly Based on Big Data Analysis: A Review of Alibaba Case," *Mobile Information Systems*, vol. 2022, Article ID 1776598, 11 pages, 2022.

## Research Article

# Legal Governance of Internet Platform Monopoly Based on Big Data Analysis: A Review of Alibaba Case

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Numerous Internet platforms developed with novelty and innovation in knowledge society provide for the optimal utilization and integration of the Internet in allocation of social resources, development of digital trends, and absorption of new opportunities of the advanced digital economy. However, the corresponding challenges have come along with the development: the monopoly governance of Internet platforms has received more and more attention under the impetus of typical cases such as the “Alibaba case.” This paper considers the basic content of Internet platforms and their monopolistic qualities as well. This will further elaborate the monopolistic nature of Internet platforms including “two-for-one” behavior in relevancy to market and dominant position. This study will further explore the regulatory idea for the Internet platforms’ antimonopoly. The purpose is to establish a sound comprehensive Internet governance system and promote the healthy and sustainable development of the platform economy.

## 1. Research Background

Relying on the summary/outlines of the 14th Five-Year Plan for “accelerating digital development and building a digital China,” [1] public eye has been taken as a separate section. More urgent demand for the integration of the Internet platforms and the real economy, advancements of the Internet economy, promotion of the Internet industrialization, and the transformation of data value is witnessed in the initial year of the 14th Five-Year Plan.

Figure 1 represents the statistical analysis of growing Internet services’ provider from period 2019 to August 2020. According to statistics from Ministry of Industry and Information Technology (MIIT) of PRC, during the period from 2019 to August 2020, Internet services have become more closely integrated with industries such as cinemas, tourism, education, or the like in the context of China’s steady economic recovery [2]. The Internet companies have shown year-on-year growth in business revenue. Obviously, the Internet economy highlights today’s development process that can hardly ignore, and the Internet platform was born in such a context. In the new economic era, the

traditional platform economy model has been impacted by the explosive growth of big data [3]. In the wave of the digital economy, with the considerable scale effect, network effect, and information production influence of the Internet itself, more and more operators are turning their attention to the Internet platform to gain more advantages in Internet finance through the control of data, the seizure of user resources, and the occupation of market share. Along with the further development of the Internet and the essential functions such as communication and retrieval, the business benefits’ latent on the Internet has received much attention [4]. The e-commerce application mode of the Internet is classified as the first level of the Internet application mode alongside the e-government application mode, the application mode of network information acquisition, the network communication and interaction application mode, and the network entertainment application mode. The Internet has accelerated the process of information exchange, making it easier for people to share resources and reorganize them in a linked fashion while integrating different business units from which internal operating companies can acquire benefits.

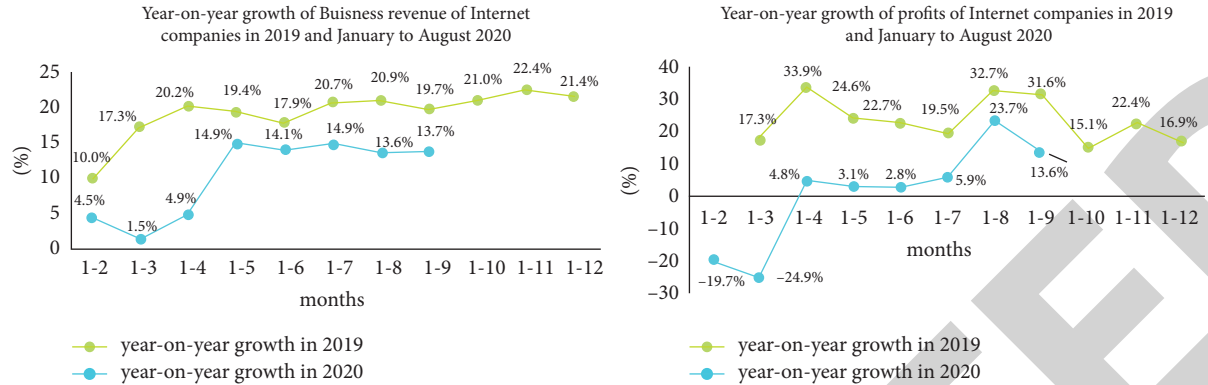


FIGURE 1: Yearly growth in revenue and profits of Internet companies in 2019 and January to August 2020.

Despite huge advantages from Internet platform, the rise of the Internet economy also makes numerous problems [5]. In the light of close link between the Internet and competition, it is the matter of great concern—both domestically and globally—to regulate the idea of Internet market economy to avoid the abuse of the Internet operators’ dominance in market that manipulates the development of the same industry in the digital era. Typical instances of such manipulation and then the redress in form of provision of platform commerce operation in bilateral markets to offer operators with more opportunities include the suit between Qihoo 360 Technology Co. Ltd. and Tencent, the merger between DIDI and China Uber, and the “two-for-one” case between Alibaba and JD.COM. However, the tests such as determination of rational guidelines, flexibility with the phenomenon of a platform monopoly, and the promotion of the smooth development of the data market persist today.

## 2. The “Alibaba” Case and the Monopolistic Behavior of Internet Platforms

The manipulation and the resulting penalty on Alibaba Group by the State Administration of Market Supervision and Administration is the best example of the monopolistic behavior of the Internet Platforms after the introduction of China Antimonopoly Law. The detailed discussion of Internet platform monopoly is discussed below [6]. The detailed discussion of Internet platform monopoly is discussed below.

**2.1. Overview of Internet Platform.** The connotation of the platform is open-ended. A platform is generally considered to be a trading space that exists in a bilateral market and facilitates the linking of products and services. In this transaction space, the transaction parties can efficiently complete the transactions conducted offline on the Internet. At the level of information technology, the Internet platform is a system of connecting information networks of different geographical locations, types, and sizes using communication devices. This provides operations for business modules of the global network [7].

This section discusses the classification and characteristics of Internet platform.

**2.1.1. Classification of Internet Platforms.** By virtue of different classification criteria, the Internet platforms can be classified accordingly.

- (i) Classification based on the platforms as a central business: under such classification criteria, two types of Internet platforms are most typical. The first type of Internet platform takes transaction intermediary as its central positioning. Promoting the circulation of goods and services is the most core function of this kind of platform. Through profound openness, the open business brings rich traffic for sellers, provides a variety of choices for buyers, and meets the need for full information exchange between sellers and buyers. The second type of the Internet platform is to open and circulate massive information and data in a search engine or social media.
- (ii) Segmentation by the application mode of the platform: with the application mode as the perspective of segmentation, Internet platforms can be divided into “Baidu” as an example of application platform of network information acquisition, “Taobao” as an example of e-commerce application platform, and “Sina Weibo” as an example of network communication and interaction platform. In addition, there are also online entertainment application platforms, e-government application platforms, etc.
- (iii) Classification by the nature of bilateral users of the platform: depending on the nature of bilateral users in a platform, platforms can be classified as vertical, horizontal, and audience platforms. The most crucial difference between vertical and horizontal platforms is whether the bilateral users of the platform will have close interaction with each other. In a horizontal platform, the status of users is equal, and in this case, it is more conducive to the development of communication and interaction

between users. If the platform users can only choose one identity between the buyer and the seller, the vertical property of the platform is more pronounced. The platform shows more of a function to facilitate the completion of transactions. The platform operators usually make profits by charging the users service fees, commissions, advertising fees, etc.

- (iv) Classification by the identity of the main platform operators: if classified from this perspective, Internet platforms can be divided into Internet companies and mobile operators' Internet platforms. Internet companies at the basic, service, and terminal levels are all covered within the broad Internet companies. Baidu, Sina, Tencent, and Alibaba are well-known Internet companies as a search engine, a comprehensive portal, instant messaging, and e-commerce. Under the development mode of market economy, the development and innovation of Internet platforms operated by Internet enterprises are fast. The highly iterative and interactive Internet platforms are built and operated by mobile operators which have a more familiar investment, stable value in industry, and better financing environment.

### 2.1.2. Internet Platform Characteristics.

- (i) Openness: openness is one of the outstanding characteristics of the Internet platform. The openness of the Internet platform is reflected in the platform operator's openness to business, services, traffic, data interfaces, and other resources to upstream and downstream industries, partners, and users in the form of resource sharing, facilitating the association of multiple scenarios and roles, allowing platform operators, third-party developers, and users to maintain positive interactive relationships, increasing customer stickiness, and giving traditional industries more opportunities to complete industry upgrades. It emphasizes the characteristics of platform interconnection and a harmonious and win-win industrial ecological environment. The mainstream open Internet platform is dominated by Baidu, Taobao, and other websites.
- (ii) Externality: in the field of economics, "externality" is also called "spillover effect" or "external effect." It is generally believed that the theory of externality was first proposed by a British economist, Alfred Marshall [8]. A common belief is that Alfred Marshall who was a British economist, first, proposed the theory of externality. The theory deals with an economic activity that brings visible impact affecting others than the party concerned. In case of the Internet platform, the externality greatly influences the effect of user transactions on the value of the platform and the common impact between different kinds of users.

- (iii) Other characteristics: in addition, the characteristics of the Internet platform can also be reflected in the diversification of means of transaction, highlighting the cluster scale effect, the younger audience, and so on. It is a reason in consideration of the characteristics of the Internet platform itself and the colossal scale effect of the Internet, the complexity and diversity of information, and the lag of government regulation that the Internet platform has a greater possibility of gaining a competitive advantage and occupying a dominant position in the market. Therefore, the regulation of the Internet platform's monopoly phenomenon has received unprecedented attention.

*2.2. New Qualities of Internet Platform Monopoly.* In the age of big data and Internet, the notion of monopoly and its resulting effects cannot be discussed in isolation. To search matters to a certain limit, the Internet search index data can reflect the degree of public attention [9]. Data analysis—in terms of geographical scope—can be used to determine that the degree of concern about Internet-related contents and the degree of concern about monopoly contents show a positive relationship for most provinces (Figure 2).

Article 17 of China's Antimonopoly Law lists how a market operator with a dominant position abuses its dominant position to commit monopolistic acts, including unfair overpricing sales and underpricing purchase, unjustified refusal to trade or designated trading, unjustified tying of goods, and unjustified differential treatment of trading counterparties on the same terms and conditions. The traditional monopolistic behavior takes on new forms and characteristics on the Internet platform.

*2.2.1. Exclusionary Transactions in Cross-Border Competition on Platforms.* Exclusive trading has not been clearly defined. General belief is that the contract of exclusion or restriction between upstream and downstream enterprises obliging downstream enterprises to only engage in exclusive sales in a particular area directly weakens the competitive environment of the upstream market by avoiding transactions with the competitors of upstream enterprises. This kind of transaction behavior can be called exclusive [10]. As a kind of corporate strategic behavior, exclusive trading can have the effect of increasing efficiency and revenue. Still, its practice of creating abnormally high market barriers and ring-fencing the market by excluding competitors may produce serious competition restriction problems. Therefore, from an antitrust perspective, it is necessary to pay attention to exclusive dealing.

The competition of Internet business models takes the competition among Internet platforms as the core content. From the typical cases [11] of Internet platform competition at home and abroad, both the famous social networking site Facebook's acquisition of the photo-sharing application Instagram for \$1 billion and Tencent v. 360 for unfair competition show that there is competition between platforms that cross market boundaries.



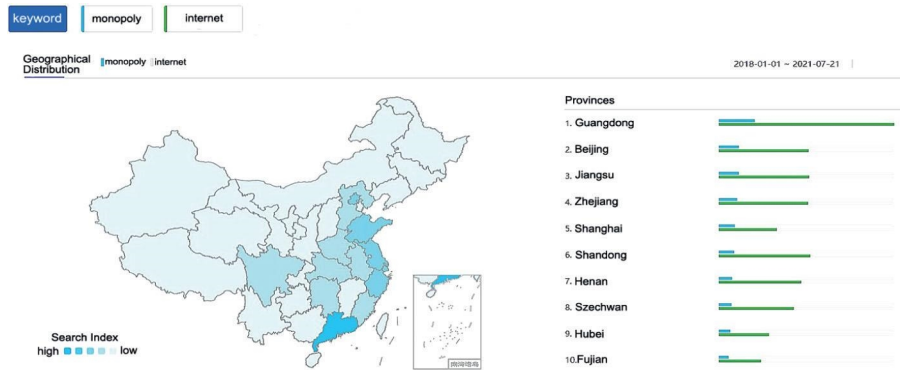


FIGURE 2: Geographical distribution of the search index for the two keywords “monopoly” and “Internet” on Baidu index.

There is a distinction between horizontal and vertical cross-border behaviors of Internet platforms. The main difference between the two is that, in the horizontal cross-border monopolistic behavior model, Internet platforms may involve many different industry markets when competing [12]. Bilateral platforms expand to multilateral platforms. Specifically, platforms often try to implant service content in another market based on the existing user base, thus completing the cross-border operations. With Alipay, a mobile payment platform, as an example, in its application, in addition to the core business of electronic payment, has gradually added products and services in the fields of life payment, transportation, medical and health services, investment and finance, and food and entertainment in recent years. The advantage of horizontal cross-border operations is that the original large base of users reduces the risk and difficulty for the platform to enter a new market. Considering the existence of the “lock-in effect,” the platform that enters the market first has the advantage of time, and the relationship built between the original users and the platform out of path dependence has the effect of releasing value when the users migrate to the new market. In vertical cross-border competition, the platform needs to cross the market within the platform and the market where the platform locates. This form of cross-border competition provides more choices for the consumers of the platform. At the same time, because the platform also needs to compete with the operators within the platform, the platform itself can use data, algorithms, and other means for self-preferential treatment, thus increasing the possibility of the Internet platform abusing its dominant position.

In the context of cross-border competition of Internet platforms, exclusive dealing manifests itself in more forms. In horizontal cross-border competition, the behavior of Internet platforms in providing free information and logistics services to consumers and implementing predatory pricing to exclude other businesses within the same platform shows the characteristics of exclusive trading [13]. The “two-for-one” behavior of e-commerce platforms, which is common in recent years, is a typical exclusive trading behavior in the development and operation of the platform economy in the vertical cross-border competition that accompanies the development of platform economy.

### 2.2.2. The Oligarchic Platform under the Matthew Effect.

The Matthew effect is a term in the field of economics, which originally refers to a polarization phenomenon that a strong is stronger and a weak is weaker. In the competition of today’s Internet platform, the Matthew effect has also been confirmed to a certain extent. The reasons behind this have a certain complexity. First, from the perspective of the economics of the network, in the Internet industry, the number of users is closely related to the platform’s profitability. The number of users within a considerable range requires a minor fluctuation in operating costs. The marginal cost is relatively low, coupled with the fixed cost of building a network platform. This has become one of the motives for the formation of barriers in the Internet industry and also constitutes the characteristics of the natural monopoly of the Internet industry. Second, under the influence of network externality, retailers will face the problem of pricing strategies of choosing profit maximization or revenue maximization. The strength of network externality, the fluctuation of market reservation price, and the cost level of theory will affect the adjustment and preference of profit maximization and revenue maximization of retailers. For a low-cost retailer, its profit grows with the rise of market reservation price and network externality, which also indicates that the network externality strengthens the competitive environment of the market. Therefore, this further leads to a phenomenon that, after gaining a dominant position, a network platform is more likely to maintain and expand its advantage based on the original position, using its scale effect to break the market equilibrium and consolidate the monopoly position, thus making the gap between the platforms widen, resulting in a situation of “winner takes all” for the oligarchic platform. Third, there is an actual situation of concentration of operators in the Internet industry, which specifically includes the purchase of assets or equity, contractual agreements, personnel or technical control, etc., so as to achieve the purpose of concentration of business power and acquisition of dominant market position. From the perspective of mergers between Internet platforms, they can be divided into horizontal, vertical, and mixed mergers. Horizontal mergers are mergers between platforms engaged in the same industry and located in the same field. Vertical mergers are mergers between platforms that manage

different processes of production and operation. Mixed mergers are not confined to the above restrictions and may be mergers between Internet platforms in different markets. Along with the influx of capital, the M&A market of Internet platforms remains hot, and the concentration of operators of diversified and mixed nature is expected. After the merger of platforms, Internet companies occupying a more significant proportion of market share are more likely to gain pricing power in the industry. In the context of a dominant player, oligopoly platforms naturally arise. Fourth, the established pattern of the Internet economy is relatively solidified when observed in the context of other factors. A few head platforms have significant advantage in the number of users, data content, technical services, and other aspects. The Internet platform with many users and in integrated development background can more conveniently enforce the locking of users and products so that small platforms which enter the market late are in the disadvantage of information asymmetry and extremely difficult to seize competitive resources. With the support of the brand effect, Internet platforms with greater visibility cultivate more solid user stickiness, and the strategic alliance between large platforms generates synergistic effects. The value of Internet platforms continues to rise, which also contributes to the creation of oligarchic platforms.

### 2.3. *The Monopoly of “Two-for-One” Behavior of Internet Platforms as Reflected by the “Alibaba Case”*

2.3.1. *Brief Description of the Case.* In December 2020, Alibaba Group Holdings Limited was investigated by State Administration of Market Regulation under the Antimonopoly Law because Alibaba allegedly abuses its dominant market position in the market for online retail platform services in China. Specifically, since 2015, Alibaba Group has been implementing “two-for-one” practices, which require that many branded merchants who reside on Tmall Mall may not operate on platforms other than Tmall Mall or participate in promotions conducted by other e-commerce platforms. In 2017, the owner of JD.COM filed a lawsuit with the Beijing High People’s Court, asking the court to judge that Alibaba Group, Tmall Network Co., Ltd. and so on relied on their market forces and used platform rules and data algorithms and other technical means to guarantee “two-for-one” behavior with a variety of incentives and penalties, which constituted an abuse of dominant market position to obtain an unfair competitive advantage. In April 2021, State Administration of Market Regulation issued an administrative penalty decision against Alibaba Group in accordance with the law, ordering the cessation of illegal acts and issuing an Administrative Guidance Letter while imposing a hefty fine, requiring Alibaba Group to carry out comprehensive rectification.

In the administrative penalty decision, the State Administration of Market Regulation was based on the administrative penalty on Article 17(1) (4) of the Antimonopoly Law, which prohibits operators with a dominant market position from engaging in the abuse of a

dominant market position by “limiting the trading counterparty to trading with it without justifiable reasons.” The court also decided to deal with Alibaba Group in accordance with Articles 47 and 49 of the Antimonopoly Law.

#### 2.3.2. *Brief Analysis of the Monopolistic Nature of the “Two-for-One” Behavior.*

- (i) The basic content of the “two-for-one” behavior: the so-called “two-for-one” behavior is not a normative concept. It refers to the Internet platform by virtue of its advantageous conditions to achieve its purpose of suppressing competitors, consolidating, or even strengthening its market position. For its resident e-merchants, it adopts multiple means to force their trading behaviors with other platforms to be restricted and force them to only conduct transactions with it. There are two issues here: first, the “two” in “two-for-one” is not definitive but instead emphasizes that the e-merchant can only choose one of the potentially available trading partners and the platform. Second, the specific operation of Internet platforms that implement “two-for-one” behavior can be divided into two categories from the perspective of typology analysis. The first type of behavior is expressed in an explicit manner, which can be reflected in the agreement signed between the Internet platform and the resident merchant, the rules and regulations for the merchant in the activities of participation in the platform, etc. A second kind of behavior is more covert providing business preferential subsidies and increasing the exposure of the party meeting the “two-for-one” condition from the Internet platform. However, if the conditions of the business are not met, the final result may be in the form of withdrawal of concessions, traffic restrictions, retro position promotion, technical blocking and even unshelving booths, banned sales, and other acts.
- (ii) Illegality of “two-for-one” behavior: the illegality of “two-for-one” behavior cannot be generalized. The “two-for-one” behavior can be simply categorized according to the actual implementation of the platform. In the case that the platform and the merchant reach consensus and agreement under equal conditions, there is no compulsory situation for the platform to impose on the merchant, and there is no adverse impact on the third party outside the contract and the risk of illegality of this type of “two-for-one” behavior is low. For the material incentive-type behavior that provides the merchant with subsidies, assistance in display, etc., the illegality of such acts should be determined by examining whether the platform has substantially deprived the merchants of their right to choose and whether it has violated the principle of fair trade. For the abuse of dominant position by the platform to infringe on the rights and interests of registered merchants and consumers by means of refusal to trade, store unshelving, and other

coercive means and to damage the competitive environment, these acts should be regulated by the Anti-Unfair Competition Law, the Antimonopoly Law, and the e-commerce Law.

- (iii) The “two-for-one” behavior in the “Alibaba” case: in the Alibaba case, Alibaba Group explicitly required its core merchants to choose Alibaba as their sole sales platform and not to participate in the promotional activities of other online e-commerce platforms in agreements and oral negotiations [14], such as the Strategic Merchant Framework Agreement, the Joint Business Plan, and the Strategic Cooperation Memorandum. In order to ensure the smooth implementation of the “two-for-one” practice [15], the platform also uses various reward and punishment measures such as preferential treatment and reduction of resources, cancellation of rights and interests, and search downgrading to exclude and restrict competition in the market of Internet retail platform services, which harms the interests of operators and consumers in the platform, hinders the free flow of goods and services and resource elements, and has seriously hindered the innovative development of the platform economy and the formation of a fair and orderly market environment.
- (iv) Judging the monopolistic nature of the “two-for-one” behavior: the monopolistic nature of the “two-for-one” [16] behavior can be judged from multiple dimensions. First, the mandatory “two-for-one” behavior undoubtedly deprives platform users of their original choice and trading opportunities, thus directly affecting the original multibelongingness of platform users. Within a single platform, due to the monopoly, the platform users may also face increased operating costs and difficulties in attracting new consumer groups. Second, for consumers, the direct consequence of the implementation of the “two-for-one” platform is that the original benign competitive environment and consumer welfare treatment are affected, thereby increasing consumer costs. Furthermore, from the perspective of the general environment, the “two-for-one” behavior makes other operators in the market lose the possibility to participate in the market competition. Other platforms suffer from the loss of brand merchants and many users. The trend of oligopoly is formed. The normal order of market competition is damaged. The public interest of society is seriously impaired. The vicious competition also violates the principle of sound unified, open, competitive, and orderly market system of the Antimonopoly Law.

### 3. Definition of Abuse of Dominant Market Position in the Internet Platform

The race in the Internet platform has become a key focus of the competition policy community. The size of Internet platform and their importance in the economy have gained

major attention. However, the subsequent problems also rose with dominance of the Internet platform in the market which leads to abuse of position in the market. Data of monopoly cases concluded in 2019 in China are shown in Table 1.

According to the 2019 Annual Report on China’s Antimonopoly Enforcement published by State Administration of Market Regulation (Table 1), among the monopoly cases filed for investigation in 2019, cases of abuse of market dominance accounted for about 8.7 percent of the total number of cases. The amount of fines for such cases was as high as 33.87 million yuan, which shows the importance of monopoly cases of abuse of market dominance in China’s Antimonopoly regulation process and the urgency of defining the relevant market and market dominance determination standards.

*3.1. Traditional Definition of Relevant Market and Dominant Position.* The relevant market is the scope of competition among all market players, including Internet players, while the dominant position directly reflects the relationship between market players and other competition objects. Better application of the theory of identifying the two to practices is almost the logical starting point for solving the problem of monopoly on Internet platforms.

*3.1.1. Definition of the Relevant Market.* According to the traditional theory of the relevant market, such relevance can be reflected as temporal relevance, geographical relevance, or product relevance, because, in Article 12 of the Antimonopoly Law, the relevant market is expressed as “the relevant market referred to in this Law refers to the range of goods and geographical area in which operators compete for specific goods or services (hereinafter collectively referred to as goods) within a certain period of time.” To determine the market share of a market player, to judge its market position, and to assist in antitrust review, China is required to define the relevant market in which competition takes place [17]. Referring to the methods applied by other countries in determining the relevant market, the following summary can be made.

In the first category, it starts from the perspective of demand. Specifically, the relevant market is defined by measuring the size of demand for a good or service, the degree of recognition, the ease of access, etc., by combining the substitutability between goods or services. If the substitutability between goods or services is high, based on this demand substitution analysis, these goods or services have a greater possibility of belonging to the same related market.

In the second category, we start from the supply perspective. This method of determining the relevant market is more from aspects such as the other operators transforming the production facilities of the input, the time to enter the target market, and risks that they take to determine the possibility of other operators entering the target market. If other operators can enter the market within a reasonable period of time and produce goods meeting the demand substitutability, the degree of substitution can help the



TABLE 1: Data of monopoly cases concluded in 2019.

Case types	Number of cases closed (pieces)	Amount of confiscation (million yuan)
Monopoly agreement	12	27,713
Abuse of dominant market position	4	3387
Illegal implementation of concentration	18	725
Abuse of administrative power to exclude and restrict competition	12	—
Total	46	31,825

definition of the relevant market. Several criteria for the above definition are covered in Article 6 of the “Guidelines of the Antimonopoly Committee of the State Council on the Definition of Relevant Markets” of China [17].

In the third category, we start from the perspective of a hypothetical monopolist. By selecting the target market, assuming that a specific commodity or service is in the monopoly, we analyze the different situations after the monopolist raises the price. If the operators cannot profit after the price increase, it indicates that consumers choose more substitutes for the commodity. Thus, the operators need to further expand the scope of the target market until consumers no longer consume substitutes. This method of defining the relevant market is also known as the SSNIP test [18].

*3.1.2. Determination of Market Dominance.* As an economic phenomenon, market dominance reflects the relationship between an enterprise and its competitors and the relationship between consumers and market competition. Theoretically, several criteria such as enterprise profitability, market behavior, and market share can determine whether an operator has a dominant position in the market. According to the provisions of China’s Antimonopoly Law, the market share of the operator, and the competitive situation in the relevant market, the operator’s ability to control the market, the financial and technical conditions of the operator, the dependence of other operators on the operator in transactions, the ease of entry of other operators into the relevant market, and other relevant factors are used as references for determining the dominant market position. However, the provisions of Article 19 of the Antimonopoly Law [19] concerning the share of the operator in the market share seem to be more in line with the reality of meeting the operational requirements. This also confirms that market share plays the most significant role among many measurement criteria.

### 3.2. The Definition Dilemma in the Internet Platform

*3.2.1. The Dilemma of Defining the Relevant Market in the Internet Platform.* In the context of the development of the Internet economy, the traditional way of identifying the relevant market is facing impacts and challenges (Figure 3).

First, the interaction of network externalities and bilateral markets will affect the definition of relevant markets. In terms of demand substitution analysis and supply substitution analysis, when using demand substitution analysis

to define the relevant market in the traditional context, the analysis of the substitution of products or services is often based on factors such as quality, price, and performance of products or services. However, when applied to Internet platforms, there are some special issues to consider: with cross-network externalities, the growth or decline in the number of users on one side of the platform can quickly affect the number of users on the other side [20]. This bilateral market interaction will not only have an impact on the value of the whole platform but also become a typical factor that is ignored when defining the relevant market by substitution analysis.

Second, the Alibaba case shows that there is a tendency to blur and merge the boundaries between the business areas operated by Internet merchants, making it more difficult to define the relevant market. In terms of overall business, Alibaba Group’s business covers e-commerce, online payment, B2B online marketplace, cloud computing, advertising services, cross-border trade, etc. There is business overlap in e-commerce, finance, online entertainment, etc. Online sales categories also overlap in digital products, home appliances, clothing, auto parts, furniture, cosmetics, food, books, and many other categories. From the perspective of product services, products with different attributes and functions offline may be shelved on the same platform and receive the same management and domination. From the statistical results of the search index trend study shown in Figure 3, it can be visually seen that the frequency of Internet users’ visits to Tmall and JD.COM Mall in the “Alibaba case” has shown a synchronous change for most of the time in terms of Internet search data alone.

In the booming development of “Internet Plus,” the barriers between different categories of products are gradually broken down, and more and more products are being updated at a faster pace to meet the diversified needs of users. Value-added services are constantly being developed, making the market boundaries of their respective fields unclear. This all means that the complexity and convergence of target business, product content, information technology, and management models among many Internet platforms, such as Alibaba and JD.COM, undoubtedly add to the difficulty of defining the relevant markets at the practical level.

Third, the close connection between the operation of Internet platforms and users’ preferences also has an impact on the definition of the relevant market. In the case of Alibaba, both Alibaba and JD.COM platform, in the operation of e-commerce, they will invariably use various data mining techniques through browsing records analysis,



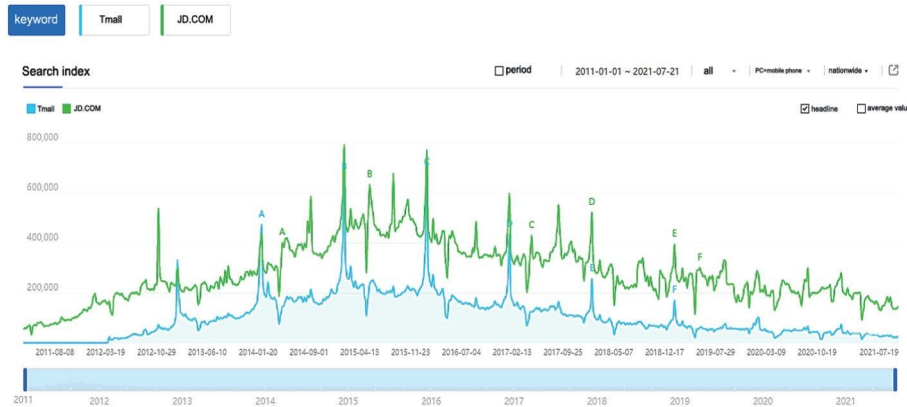


FIGURE 3: Research chart of search index trend of Baidu index of two keywords “Tmall” and “JD.COM.”

questionnaires, etc., extract consumer preferences by processing consumer information and network structure, and construct preference perception models in the network platform. Based on consumer portraits, consumer content analysis, and consumer tendency prediction, corresponding personalized recommendations are made for goods and services, thus leading consumers to form a dependence on products more efficiently. In the traditional approach of defining the relevant market by substitution, the factor of consumer preference is not given enough attention [21].

A similar dilemma is faced in defining relevant markets using SSNIP tests in Internet platforms. First, the structure of bilateral markets has certain peculiarities that make the hypothetical monopolist test more complicated than when it is conducted offline. Second, there is uncertainty in defining the relevant market for Internet platforms due to the externalities of the network. Third, free services, as a common business model for Internet platforms, may make it difficult to hypothetically monopolize free products in SSNIP tests. In other words, that is, it may be difficult to directly apply the traditional SSNIP test to the innovative business model in the Internet platform. Fourth, the SSNIP test also has the problems of how to determine the benchmark price and profit, and how to allocate the price increase on each side.

**3.2.2. The Dilemma of Determining Dominant Position in the Internet Platform.** Similarly, the characteristics of the Internet platform itself should be considered in determining the dominant position of the operator. These include the fact that Internet platform intermediaries are easily relied on by consumers, such as the “Alibaba case” in which the platform’s “two-for-one” behavior further increases the influence of its own platform by controlling the number of intermediaries. In the determination of dominant position in the market, the intermediary platforms should consider network externalities and economies of scale. In addition, the traditional method of determining market dominance through the market share may also be in danger of failing in Internet platforms. This is because under the influence of the “Matthew effect,” the positive feedback effect generated by the Internet platform can also play a significant role in the competitive influence of the platform. Still, this positive

feedback effect based on network externalities and lock-in effect is not directly synchronized with the change of market share, which would make the method of judging dominance by market share too rigid in the Internet economy. And finally, the impact of the “Matthew effect” on the difficulty of competitors is considered to determine that whether an Internet platform has a dominant position or not, the similar kind of service or product is offered to enter and compete in the target market. It is because “a strong is stronger.” Large Internet platforms are more likely to use their advantages in technology, resources, and management to suppress potential competitors who want to enter the market and make it more difficult for them to enter the relevant market. Therefore, this can also be a factor to determine whether an Internet enterprise has a dominant position in the market.

## 4. Suggestions for the Regulation of Internet Platform Monopoly

**4.1. Extraterritorial Study.** Before studying the regulation of monopoly on the Internet platform, we can consider the relevant governance experience of extraterritoriality for reference.

**4.1.1. Germany.** In the Ninth Amendment to the Law against Restriction of Competition, which came into effect on June 9, 2017, Germany has regulated for cartel liability, concentration of operators, and the implementation of the EU Cartel Damages Directive; the basic content of it can be summarized as “one encouragement, five freedoms, and four prohibitions.” “One encouragement” means to encourage SMEs to cooperate and actively participate in market competition. “Five freedoms” means to guarantee the freedom of enterprises in production, operation, investment, employment, and labor negotiation. The “four prohibitions” are most closely related to monopoly governance, including the prohibition of monopoly agreements between enterprises on production, prices, sales, and market division, the prohibition of mergers or consolidations of enterprises that prevent or destroy market competition, the prohibition of monopolies in foreign trade, and the prohibition of the establishment of monopolistic organizations or groups

without the need to reach agreements and decisions. By introducing the theory of bilateral markets, the “direct and indirect network effects,” “simultaneous use of multiple services by users and switching costs,” “scale advantages linked to network effects,” “access to competition-related data,” and “innovation-driven competitive pressure, or other factors,” Section 18 of the German Law against Restrictions of Competition also provides new criteria for assessing market position in a network environment.

*4.1.2. The United States.* In the United States, the Sherman Act of 1890, the Clayton Act and the Federal Trade Commission Act of 1914, the Robinson Patman Act of 1936, and the Trade Act of 1974 all addressed the governance of monopoly issues. In determining the relevant market, U.S. jurisprudence has used the “cross-elasticity of demand” to determine the boundaries of a product market, which is a measure of the responsiveness of demand for a product to changes in the price of its substitutes or complementary products under other conditions are unchanged [22]. The ratio between the percentage change in demand and the percentage change in the price of substitutes or complementary products can be used to calculate the price elasticity of demand differentials, which can help determine the relevant market for a product by determining the substitute or complementary relationship between products. In terms of determining market dominance, U.S. jurisprudence tends to use the “key facilities principle,” which means that a market player who has the key facilities of the market in that area is necessary to allow other competitors to enter the market to have reasonable access to the key facilities. Otherwise, it may be regarded as an act of exclusion and restriction of competition. Obviously, how to define “key facilities” and “reasonable use” is an issue that deserves further study in the process of introducing this principle into the regulation of Internet monopolies.

*4.1.3. European Union.* In the Treaty on the Functioning of the European Union, several types of conduct, such as restricting production and controlling technological development in the market, are considered by the EU as conduct capable of affecting the internal market of a member state [23]. The judicial practice of the EU antitrust law tends to interpret the traditional principle of territorial jurisdiction in an expansive manner. In the EU Dye case in 1972, ICI [24] was involved in a monopoly agreement, but the company was registered in the UK, which was not an EU member state at the time. Although the case thus involved the extraterritorial application of the EU antitrust law, the CJEU held that foreign enterprises with subsidiaries within the EU were also subject to the EU antitrust law under certain conditions, thus establishing the principle of corporate uniformity and defining the relevant market criteria that have influenced many subsequent similar cases. On July 12, 2021, the European Commission issued a summary of its evaluation of the Notification on

the Definition of Relevant Markets (the “Notification”), which has been in use in the EU competition law for more than twenty years. The assessment concluded that the original Notification might not be able to meet all the needs of the developing market. How to define the market demand and how to define the market need to be reflected in the revision of the Notification.

It is significant to note that the European Union, Germany, and the United States have specific experiences in monopoly governance.

Based on the same point, the monopoly regulations of these states show the same free competition doctrine with the value orientation of promoting the joint behavior of the market under free and fair competition without intervention. For this purpose, the market monopoly phenomenon requires a dialectical view which affirms that the promotion of the quantity of industrial R&D and the improvement of the quality of goods require the increased competition in the industries. It also promotes to identify the illegality of monopolizing to secure undue and unreasonable benefits through practices. Such practices include commodity pricing, division of geographical markets, and allocation of product markets. In context of relationship and linkages, the Antitrust Laws of the U.S serves as a model for the creation and development of German and European antitrust policies and regulations.

When taken in terms of different points, antitrust experience of German witnesses its civil law tradition valuing the significant role of bilateral market theory in the modern times for confining competitive behavior in the market which paves the way for traditional legislative measures to regulate monopolies by focusing on the market behavior of operators. Contrary to the European and German practice of establishing and maintaining market power by prohibiting the abuse of market dominance, the U.S takes more critical and severe attitude toward market dominance. For the purpose, the benefits, harms, and risks of agreements and the existence of barriers to market entry in U.S are critically evaluated.

The notion of relevant market doctrine is constantly improved through judicial practice and case law. The attitude in defining relevant market is, therefore, more flexible in comparison to EU that continues to use the traditional alternative analysis method in addition to the special characteristics of the Internet market and continue to follow the enhancement and developments of antitrust enforcement efficiency through evaluation while referring to the U.S. cases [25].

In the absence of globally integrated view and unified position on the scope of the relevant market definition and the method of determining the abuse of dominant position, new theoretical and practical approaches are practiced by various States to adapt to the complexity of monopoly cases on Internet platforms. It is evident from practice that the use of traditional theories and earlier

laws to regulate Internet antitrust issues is a common issue of many countries that needs to be resolved immediately.

#### 4.2. Exploration of Antitrust Legal Governance

*4.2.1. The Way to Improve the Relevant Market Consideration Standards.* To adapt to the rapid development of the Internet and digital economy, it is necessary to improve the criteria for considering the relevant market. First of all, the free operation model of Internet platform operators makes it difficult to obtain accurate results by the traditional method of calculating market share based on the amount of sales [26]. In this case, we can consider introducing new criteria in defining the relevant market, such as user base, data scale, network effect, and mastery of key facilities, based on the relevant foreign practices and the actual situation in China. Secondly, the development of Internet platforms is fast and innovative, and the boundaries between different products are always changing, which makes it difficult to define the relevant market. In order to cope with such a situation, we can consider delineating a time frame when defining the relevant market and judging the relevant market within the established time can effectively enhance the certainty of the judgment results. Finally, to determine whether the behavior of the Internet platform has the nature of monopoly, it is also possible to consider combining it with other characteristics, which is not a rejection of the traditional method of determining the relevant market and dominant position, but a reference to other realistic situations based on this, such as whether the Internet platform is practicing a two-for-one behavior such as the Alibaba case and the substantial impact on the same industry after such behavior, performing a comprehensive review of suspected monopolistic behavior.

*4.2.2. The Way to Improve the Legal Interpretation of the Antimonopoly Law.* As far as the method of interpretation of applying the laws is concerned, it constitutes all grammatical, logical, systematic, historical, and other types of legal interpretation. Monopoly regulations of Internet platforms are directly affected by legal provisions that need the extended interpretation of some provisions of the Antimonopoly law [27]. Article 18(5) of the Antimonopoly Law, for instance, determines that a market player has a dominant market position by considering “the ease of entry into the relevant market by other operators.” The expanded interpretation of “ease of entry into the relevant market” can be used in the following directions: the cost of material and technical and human resources invested by the operator in entering the relevant market, whether the operator can obtain sales channels for its products or services after entering the relevant market, whether potential competitors can enter the target market, whether the competition between products and services is obstructed, and the ability to substitute between products and services. A platform company that has the advantage in terms of time sequence is more likely to abuse its influence to start monopolistic behavior and disrupt competition in the industry. For

example, in the Alibaba case, the Alibaba Group’s “two-for-one” platform behavior, if we look at it from the perspective of an expanded interpretation, this act undoubtedly makes it significantly more difficult for other operators to enter the relevant market, i.e., unreasonably raised the market barriers. This naturally justifies the regulation of such behavior by the Antimonopoly Law.

*4.2.3. The Way to Improve Market Regulation.* The improvement of market supervision is the way to put the system design into practice. First of all, from the perspective of law enforcement mechanism, attention should be paid to the deployment of the team of law enforcement agencies responsible for market supervision, unifying the objectives, clarifying the tasks, compacting the responsibilities, taking the direction of antitrust online and offline governance, consolidating the theoretical roots, precisely defining the relevant market, locating the market subjects with dominant positions, clarifying the chain of responsibilities, forming a pattern of joint management, gathering efforts to attack forcefully, and forming a professional, independent, and authoritative Antimonopoly enforcement agency. We should combine the network effect of the Internet platform with the characteristics of the bilateral market and network externalities, innovate the criteria for determining the dominant market position of Internet platform enterprises, and ensure the expected effectiveness of the offline Antimonopoly work. In addition, in terms of administrative supervision, Internet technology should be used to strengthen administrative supervision measures. With reference to similar cases such as the “Alibaba case,” some enterprises may quickly occupy the market and have a dominant position through relying on some technological advantages, forming a highly unstable market monopoly. Therefore, more consideration should be given to the competitive market environment, including the real and potential competition and real-time supervision of large online platforms, focusing on strengthening the supervision before and during the event and combining with policy guidance and incentives to maintain the order of competition in the Internet market.

## 5. Conclusion

The Internet business model has achieved a competitive edge in the digital economy. It has an increasingly significant impact on market competition. In recent years, Internet platforms have been showing new forms of market monopoly due to their distinguishing characteristics of the bilateral market, network externality, lock-in effect, and Matthew effect. These platforms acquired the market monopoly, such as “two-for-one, predatory pricing, and traffic hijacking. The emergence of typical cases, such as Alibaba, highlights the need to address monopoly regulation on Internet platforms, in theory, policy, and implementation. Based on the reference to foreign governance experience and national conditions, it will be useful to establish an antimonopoly sound system for the Internet platforms, improve



the applicability of the Antimonopoly Law in the Internet era, manage market chaos, optimize the governance model, and promote healthy competition among Internet platforms. This will promote the development of the Internet economy.

### Data Availability

The data underlying the results presented in the study are available within the article.

### Disclosure

The authors confirm that the content of the study has not been published or submitted for publication elsewhere.

### Conflicts of Interest

The authors declare that there are no potential conflicts of interest in our paper.

### Authors' Contributions

All authors have seen the manuscript and approved to submit to the journal.

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