

Research on the Centralized Control System of Digital Platform Operators

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Abstract

With the continuous development of the digital economy, the concentration behavior of platform operators presents characteristics such as large quantity, large scale, and wide impact, which puts forward higher requirements for the centralized control system of platform operators. The Anti Monopoly Law of China stipulates a system for reviewing the concentration of operators, but there is little research on the concentration control system of digital platform operators, especially a lack of systematic analysis of the concentration control system of digital platform operators. Therefore, in the design of the centralized control system for digital platform operators, full consideration should be given to the particularity of the digital economy, and regulations should be made based on the types of digital platforms and the different characteristics of different types of platform operators. After clarifying the basic principles for defining the relevant market, specific market dominance standards can be selected to identify digital platform operators who have or may have dominance. In addition, based on the characteristics of the digital economy, this paper analyzes the potential risks of competition damage caused by the concentration of digital platform operators. The principles of fairness and reasonableness, as well as the protection of consumer interests, will be established as the analysis basis. By improving the application standards and review methods, China's digital platform operator concentration control system will be improved.

Keywords

Digital Platform; Concentration of Business Operators; Anti Monopoly Review; Relief Path.

1. Introduction

With the vigorous development of internet technology and the continuous deepening of digitization, the world has entered the digital era. Currently, the digital economy accounts for nearly 40% of China's total economy. As a new form of economy, it has become a new driving force for China's economic growth and social development, continuously stimulating the enormous potential for innovative development in various industries, and fundamentally changing people's lifestyles. Concentration of operators is one of the important manifestations of monopolistic behavior implemented by digital platforms. In recent years, the active concentration behavior of some large digital platforms has attracted widespread attention from domestic and foreign antitrust law enforcement agencies. According to relevant data, as of December 2022, China's antitrust law enforcement agencies have punished more than 170 cases of concentration of business operators that have not been declared in accordance with the law, including large internet companies such as Alibaba and Tencent. In the past 30 years, "MAGAF" in the United States has completed more than 800 mergers and acquisitions. A large number of illegal activities such as concentration of operators and stifling mergers and acquisitions of start-ups have formed monopolies, disrupted a fair and orderly market competition environment, damaged the legitimate rights and interests of consumers, and hindered innovation. Compared to the United States and the European Union, the development

of antitrust regulations on the concentration of operators on digital platforms in China is relatively slow. At the same time, due to the characteristics of digital platforms such as bilateral markets and network effects, traditional concentration regulations are difficult to apply to the platform field, lacking effectiveness and specificity. For example, how to identify concentration behaviors that have the effect of excluding or restricting competition, and how to implement centralized control, etc, No specific and clear regulations have been provided yet. Therefore, this article intends to study the centralized control system of digital platform operators and propose suggestions based on the actual development of China's digital platform economy, in order to provide useful reference for improving the system.

2. Definition and Characteristics of Digital Platforms

2.1. Definition of Digital Platforms

Platform economy is a form of digital economy, which is essentially a "Internet plus" business model with strong inclusiveness, enabling platform operators to gather users, operate businesses, provide services and generate economic benefits on the Internet platform. In this process, digital platforms not only create huge economic benefits, but also promote the development of the digital economy.

To clarify the digital platform, it is necessary to first clarify the meaning of the platform. The so-called "platform" refers to a cyberspace that has a large number of users and also provides services for them. In this space, operators can provide goods and services to users. The definition of digital platforms is not uniform across countries, such as the European Commission's view that digital platforms are "independent entities that provide online platform services"; The Federal Trade Commission of the United States defines a digital platform as a physical facility consisting of a set of electronic data streams using data, algorithms, servers, or software that interact digitally on a computer network and provide services to other users. Article 2 of China's E-commerce Law defines "e-commerce platforms" as "online business premises established by operators to sell goods or provide services. Some scholars believe that platforms have the dual attributes of enterprises and markets. In other words, platforms are not only the operators and maintainers of the effective operation of bilateral markets, but also the formulators of platform transaction rules, with a certain level of management authority [1].

Therefore, in general, the definition of digital platforms should be mainly carried out from the following two aspects: firstly, based on the standard of subject, that is, digital platforms are third-party entities independent of the providers of goods and services; Secondly, based on functionality, digital platforms can provide multiple functions such as online transactions and services. From these two aspects, digital platforms should be a comprehensive entity with multiple functions, which also means that they are not limited to providing information intermediary services or trading platform services. Meanwhile, according to Article 17 of the Anti Monopoly Law, the "Internet field" can be broadly defined as the "Internet", which includes various new economic forms based on Internet technology as infrastructure and data as key elements. Therefore, a comprehensive analysis should be conducted on the multifunctional features of digital platforms.

2.2. Characteristics of Digital Platforms

2.2.1. Double (Multi) Sided Market

The most prominent feature of the platform is the dual (multi) side market. Taking Alibaba e-commerce platform as an example, in e-commerce platforms such as Taobao and Tmall, merchants pay a certain fee and obtain the right to sell goods or services on the platform. Consumers can purchase goods or services on the platform for free, forming a bilateral market

where merchants and consumers coexist, while other Alibaba enterprises can form a multilateral market. For example, Alipay can provide financial and payment services for merchants and consumers, while Cainiao Logistics can provide goods detection, goods collection and other services for users at both ends. From this, it can be inferred that the monopolistic behavior of the platform has different characteristics from traditional monopolistic behavior, which may involve multiple fields or aspects [2]. Due to the strong resource allocation ability of the platform itself, It takes into account the dual attributes of both the enterprise and the market. In terms of market attributes, platforms have the power to formulate and execute transaction rules, which makes their monopolistic behavior mandatory internally and covert externally [3].

2.2.2. The Platform has Network Effects and Locking Effects

Network effect is a concept in economics that refers to the benefits that users receive from goods or services depending on the number of users of compatible products. It can be divided into two types: direct network effect and indirect network effect. The former refers to the interdependence between consumers in the same market, that is, the value of a product will change with the increase of users, and due to its strong external effects, it can lead to a continuous increase in the number of users. The latter refers to the change in the number of people using complementary products that determine the value of a particular product. Platforms that enter a certain field or market earlier can obtain funding support through disruptive innovation and occupy a more favorable position in subsequent competition, forming a Matthew effect of "the stronger, the weaker", which will further strengthen their monopoly position. The lock-in effect refers to the use of path dependence. When users become accustomed to a certain platform and the transfer cost is high, they will no longer choose to enter another platform similar to it. On the one hand, this effect further promotes the increase in user transfer costs by strengthening the platform's self-reinforcing mechanism, and on the other hand, it provides more space for the development of the platform by reducing the requirements for the platform. In addition, the platform continuously strengthens infrastructure construction services in their respective fields to achieve the goal of continuously strengthening platform monopoly.

2.2.3. High Data Concentration Ratio

With the continuous development of the digital economy, data has become the fourth largest factor of production after land, labor, and capital, and is also the core element of the digital economy. The competition between various platforms often unfolds through data. When the number of users on a certain platform continues to increase, it can further improve operations, optimize design, and bring more personalized experiences to users through data collection and use. After that, it can occupy an advantageous position in subsequent competition and bring exponential development to the enterprise. At the same time, the collected data can be combined with algorithms and blockchain technologies to achieve the purpose of rights confirmation, pricing, sharing, and empowerment. Moreover, the rights allocation mechanism of data sharing can be utilized to ensure that every participant can share the dividends of data value [4]. Of course, as the amount of data collected by the platform continues to increase, its market share continues to increase, and data monopolies are implemented at the source, such as certain data that can be accessed and used through encryption, verification, and other technologies, leading to monopolistic behaviors such as abusing data or refusing data access. The more common one is "big data killing" [5]. As the degree of data monopoly deepens, on the one hand, platform operators with advantageous positions will focus more on strengthening their monopoly position while neglecting the improvement of product quality. On the other hand, they will also continuously expand their data capacity and richness, using existing data and technological advantages to carry out acts of infringing on users' personal information.

3. The Regulatory Dilemma of Concentration of Operators on Digital Platforms

Currently, the platform economy is showing a rapid development trend worldwide, which has had a profound impact on the economic and social life of various countries. The platform economy has become an important component of China's national economy, with rapid growth in market subject size, industry scope, industrial structure, and employment. However, different from traditional enterprises, digital platforms belong to the bilateral market, with strong network externalities, lock-in effects, and high data concentration ratio, which lead to difficulties in the application of the traditional examination path of concentration of business operators and greater challenges for anti-monopoly regulation. Specifically, it mainly manifests in four aspects: application standards, relevant market definitions, competitive effect analysis, and punishment and deterrence.

3.1. Limitations in Application Standards

Operators engaging in concentrated mergers and acquisitions need to first declare in accordance with legal regulations, which not only helps law enforcement departments to timely grasp the situation of enterprise concentration, but also effectively prevent illegal concentration of operators. According to the current laws and regulations in China, concentration of operators is declared based on the turnover of enterprises. The "Regulations on the Declaration Standards for Concentration of Operators" applies to all concentration of operators in the market field, while the "Anti Monopoly Guidelines in the Platform Economy Field" (hereinafter referred to as the "Guidelines") only applies to the internet field. There are more considerations for concentration behavior in this field, and the prescribed declaration standards are also relatively reasonable. However, due to the unique nature of digital platforms, it is difficult to operate traditional industry based revenue calculation standards in the internet field. Therefore, in specific practice, the concentration behavior of digital platform operators is often excluded by law enforcement agencies on the grounds of "not being regulated by antitrust laws" due to the lack of clear identification standards. In addition, digital platform operators often do not proactively declare trading situations when engaging in concentration activities, which makes it difficult for law enforcement agencies to effectively determine whether concentration has caused harm to market competition. In the case of Didi's acquisition of Uber, after the merger, Didi will have a market share of 90% in the domestic ride hailing industry. However, Didi did not declare on the grounds that the two entities actually participating in the concentration of operators were not profitable and Uber's revenue in the previous fiscal year did not meet the required reporting standards. According to relevant data, the merger of the two companies will result in almost no replaceable competitors in the ride hailing market, which poses a great risk of excluding and limiting competition [6]. In addition, as a third party, there is currently no unified answer as to whether discounts such as red envelopes or consumption vouchers issued by the platform to merchants and consumers should be deducted when calculating revenue. So using only revenue as the declaration standard cannot cover all mergers and acquisitions on digital platforms.

3.2. The Definition of 'Relevant Markets' is Difficult to Apply

Defining the relevant market is a prerequisite for determining whether a company constitutes a monopoly. The relevant market refers to the range of goods and geographical areas where operators compete for specific goods or services (hereinafter collectively referred to as goods) within a certain period of time. The antitrust law enforcement department determines the impact of concentration of business operators on market competition by defining the relevant market, that is, the changes in anti-competitive factors such as whether the relevant market competition is sufficient and whether prices have risen before and after the occurrence of

mergers and acquisitions, thereby determining the dominant power of the enterprise in the relevant market. The analysis of demand substitution and supply substitution in the definition of related markets is an important analytical tool for law enforcement agencies to investigate monopoly cases. For example, China mainly uses the Supposed Monopolist Test (SSNIP) to define related markets based on commodity prices, but this method cannot be applied to the platform economy field characterized by bilateral markets. The reason is that, on the one hand, compared with the traditional unilateral market, the dual (multi) edge market characteristics of digital platforms with cross network externality enable such enterprises to derive one product or multiple products or one market or multiple markets, which brings difficulties to the definition of relevant markets. On the other hand, the platform's free subsidy behavior increases the difficulty of defining relevant markets. This behavior refers to that the platform collects fees from sellers while providing free services or goods to consumers to obtain users and data, and uses the price difference between the two to make profits, such as e-commerce platforms such as Taobao, JD, Tiktok, etc. The SSNIP testing method mainly defines the relevant market based on price, and this approach is not applicable to free products provided by platform enterprises. As some scholars have pointed out, in the field of the Internet, the competition among platform enterprises regarding product quality is greater than the competition for product price, and the SSNIP testing method may be difficult to accurately determine the demand substitutability of products [7]. In addition, there are deficiencies in the consideration of innovation and efficiency in practice. For example, in the Alibaba "two choice" monopoly case, the law enforcement department did not effectively evaluate the actual damage that this behavior may cause.

3.3. Incomplete Competitive Effect Analysis Framework

The framework for analyzing the competitive effects of concentration of operators is the top priority of the concentration control system, and its analysis results will be directly used as the basis for determining whether enterprises are allowed to carry out mergers and acquisitions. Currently, China's Anti Monopoly Law, Guidelines, and other laws and departmental regulations all contain the main factors that anti monopoly law enforcement agencies need to consider when conducting competition analysis. Although there are many elements listed, they lack integrity and logic. The market share of traditional enterprises is often obtained by calculating sales revenue, sales volume, and other data. However, according to the above analysis, most internet companies adopt a "cross subsidy" free business model, where users can enjoy it without paying any fees [8].

At present, the development of digital platforms is showing a trend of product ecology. With the help of their powerful data resources, they are constantly expanding across borders, involving multiple fields and businesses. This cross market competition behavior leads to the platform having strong control over the market. Based on this, the factors listed in the "Regulations" cannot effectively achieve scientific evaluation of platform market control.

In summary, although the current regulations provide detailed provisions for analyzing the competitive effects of platform operator concentration behavior, there are still many limitations in law enforcement practice.

3.4. Insufficient Punishment and Deterrence

With the development of the digital economy, enterprises will continue to engage in various forms of mergers and acquisitions based on their own development and scale expansion needs, which has led to a continuous increase in the number of concentration of operators, including many concentration of operators that have not been declared in accordance with the law. The reason is that on the one hand, the illegal cost of concentration of operators that have not been declared in accordance with the law is relatively low, and the deterrent effect on operators is small. On the other hand, the current standards cannot cover all concentration of operators. In

July 2022, the State Administration of Market Regulation announced 28 cases of concentration of business operators that had not been declared in accordance with the law. Among them, Tencent was involved in 12 fines, while Alibaba was involved in 5 fines. This is also the second time since 2022 that Tencent and Alibaba have been punished for failing to declare and illegally implement concentration of business operators, and the relevant companies involved have been fined 500000 yuan each. According to the relevant provisions of the Anti Monopoly Law, China currently adopts measures to restore the concentration status of illegal business operators who have not been declared in accordance with the law and fines. The former is mostly used for structural relief and has only been applied once in practice [9].

Through sorting out relevant cases, it was found that the ultimate punishment for failure to declare and implement concentration of business operators in accordance with the law is a fine, with a maximum amount of 500000 yuan. In addition, if the investigation reveals that failure to declare concentration of business operators in accordance with the law has not had the effect of excluding or restricting competition, the law enforcement department will also impose administrative penalties based on factors such as the nature, duration, and degree of implementation of the failure to declare in accordance with the law. These penalty decisions have caused controversy in society as soon as they were announced. Although from the perspective of strict law enforcement, imposing an administrative penalty of 500000 yuan on relevant enterprises is already the maximum amount stipulated by the current Anti Monopoly Law, compared to the profits and scale of the involved enterprises, the upper limit of the fine is only a drop in the bucket.

When enterprises apply for concentration of operators, they usually compare the costs such as declaration time and required fees with the benefits that can be obtained by direct merger without declaration. Direct merger without declaration often better meets the requirements of enterprise interests. Therefore, imposing a fine of only 500000 yuan on illegal concentration enterprises lacks legal deterrence and cannot achieve the purpose of preventing the occurrence of illegal concentration behavior and establishing a system. The amount of fines for illegal concentration behavior in the current Anti Monopoly Law should be appropriately adjusted to ensure the effective implementation of the concentration system for business operators.

4. Optimization and Improvement of the Concentration System for Digital Platform Operators

With the rapid development of the Internet, internet platforms based on data, algorithms, and technology play an important role in office work, learning, resource allocation, and other aspects. However, some leading internet companies use their monopoly position to implement exclusion and restriction of competitive behavior, posing challenges to the traditional competitive pattern and order. The newly revised Anti Monopoly Law clearly states that encouraging innovation and promoting fair competition policies are the key directions of anti monopoly supervision. It also responds to and improves the problems of the concentration system for digital platform operators, but it still cannot be effectively applied to digital platforms, such as limitations in application standards, incomplete competitive effect analysis framework. There is still a lack of clear regulations regarding the difficulty in applying relevant market definitions and insufficient punishment and deterrence. This article will improve China's centralized control system for digital platform operators from four aspects: application standards, competition analysis framework, relevant market definitions, and punishment and deterrence, in order to cope with the complex and ever-changing digital economy.

4.1. Optimize Application Standards

Although the business methods and profit models of various platform enterprises vary, the ultimate goal is to obtain stable user traffic through cross subsidies after users use the platform products and develop usage habits. The development of this new business model makes it impossible for the potential of start-up platforms to be fully reflected through revenue or market share, resulting in being excluded by law enforcement agencies due to not meeting the declaration standards. Therefore, it is necessary to optimize the application standards for concentration of business operators. Introduce transaction volume standards. In June 2022, the State Administration of Market Regulation formulated the application criteria for "turnover+market value or valuation standards+1/3 of the proportion of domestic turnover in China" in the "Regulations on the Application Standards for Concentration of Business Operators (Revised Draft for Comments)", Article 18 of the "Guidelines" stipulates that "in the field of platform economy... platform operators who specifically participate in market competition or play a leading role on one side of the platform can also calculate the transaction amount involved in the platform." According to China's national conditions, without increasing the turnover standard, the transaction amount standard is introduced as a supplement. This is conducive to including concentration of business operators whose turnover does not meet the declaration requirements but will have a significant impact on market competition in the future, effectively curbing the negative impact of stifling mergers and acquisitions. At present, EU countries such as Austria, Germany, and Italy use transaction volume as the declaration standard for concentration of internet enterprise operators. As the first country in the world to incorporate transaction volume into the concentration control system, Germany stipulated in the revision of its Anti Restriction Competition Law that when the transaction volume of internet enterprises reaches 400 million euros, they should actively declare concentration. Through the enforcement practices of countries such as Austria, it has been shown that introducing transaction volume will not cause significant difficulties for law enforcement agencies [10]. In addition, in the Facebook acquisition of WhatsApp case, it also reflects a direct reflection of the potential and economic value of transaction volume for internet startups. Therefore, based on the development of the digital economy and the merger and acquisition situation of start-up enterprises, China can set the transaction volume standard to 600 to 800 million yuan.

Require large platforms to bear the obligation of disclosure. The European Union has added a "gatekeeper" system to the passed Digital Markets Act, which stipulates that as long as the platform meets the "gatekeeper" conditions, the European Commission and relevant countries have the right to know about the concentration of operators it implements. Norway has already passed legislation to establish the obligation to disclose mergers and acquisitions of large platforms, and European countries such as Italy and France have also indicated this trend in relevant laws or proposals. According to the relevant cases of violating the concentration declaration standards issued by the State Administration for Market Regulation, it is not difficult to see that most of the companies that violate the concentration declaration standards are concentrated in large internet companies such as Alibaba and Tencent. In order to prevent disorderly capital expansion and deepen antitrust supervision in the digital economy field, China can refer to the "gatekeeper" system according to its national conditions, and require large platforms to bear the obligation of prior notification of merger and acquisition transactions. At the same time, in order to avoid the negative impact of excessive review on the concentration behavior of operators, the scope and objects that meet the mandatory declaration conditions should be strictly divided.

4.2. Methods for Defining Innovation Related Markets

Compared to traditional unilateral markets, the dual (multi) sided market characteristics of platforms make defining related markets more complex. If the scope of definition is too wide or too narrow, it will directly affect the accuracy of antitrust review. Therefore, it is necessary to innovate the methods for defining related markets.

The external network effect of the platform is one of the factors that affect the definition of the relevant market, and this effect will have different effects on users on different sides of different types of platforms. For example, for platforms such as Tiktok and Google that provide places for paying advertisers to place advertisements, the user end can enjoy services for free, which has a negative cross effect. The advertiser end pays for advertising, which has a positive effect. The change of platform price will not lead to the loss of customers on both sides, so the multi market analysis method can be used. On the contrary, platforms such as Didi and Meituan that require both merchants and users to pay fees have a positive cross effect on both users, and price changes will cause loss of users on both sides. Therefore, a single market analysis method can be used for this. Of course, law enforcement agencies should comprehensively examine the impact of centralized behavior on all users when conducting reviews, and then analyze specific issues.

China's Anti monopoly Law stipulates the methods of demand substitution analysis, supply substitution analysis and SSNIP testing in the relevant market definition methods. However, for the current competition between platforms, the price is no longer the first choice, but the free or low price competition mode is adopted, resulting in that the traditional relevant market definition methods based on price competition cannot objectively and truly reflect the overall market power of platform operators. It is difficult to apply the concentration review of operators in the platform field. In practice, the product performance testing method based on commodity performance (SSNDQ) and the profit model testing method based on profit model have been derived. Although their rationality has been applied in individual cases, they have not fundamentally solved the fundamental problem of defining the digital platform related market. Therefore, this article believes that law enforcement agencies should flexibly apply relevant market analysis methods in specific cases, using relevant market definition as a means rather than a necessary procedure. For monopoly cases that are difficult to define, relevant market definition can be weakened or even omitted, which is beneficial for saving judicial resources and law enforcement costs.

4.3. Improve the Framework for Analyzing Competition Effectiveness

The traditional competitive effect analysis framework cannot be well applied to the concentration behavior of digital platform operators, so it should be improved based on platform characteristics.

The first factor to include innovation damage. Innovation, as the primary driving force for development, occupies a core position in the overall development of the country. The internet field is the main battlefield for innovation and development, and innovation is considered a factor in the analysis of the competitive effect of digital platform operator concentration in relevant laws and regulations such as the "Guidelines" and the "Anti Monopoly Law". The Anti Monopoly Law aims to "encourage innovation" and makes relevant provisions in Article 1. Innovation is similar to indicators such as price and consumer welfare, and as an implicit indicator, it is difficult to quantify in practice [11]. The traditional competitive effect analysis framework cannot be well applied to the concentration behavior of digital platform operators, so it should be improved based on platform characteristics.

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4.4. Set an Appropriate Amount of Fines

According to the spirit of the 2020 Central Economic Conference, China's antitrust law enforcement departments have increased their enforcement efforts against concentration of business operators who have not been declared in accordance with the law. According to relevant data, the number of undisclosed cases of concentration of business operators publicly punished by the State Administration for Market Regulation in 2021 and 2022 was 106 and 32, respectively, an increase compared to 2019 and 2020. Although law enforcement agencies have increased their investigation and enforcement efforts, this does not effectively curb the occurrence of illegal activities. Before the amendment of the Anti Monopoly Law, penalties were only imposed on transactions that had the effect of excluding and restricting competition. However, in practice, most cases of concentration of operators did not have the effect of excluding and restricting competition. For example, in cases such as Alibaba's acquisition of Yintai equity and Fengchao's acquisition of Zhongyou Zhidi equity, concentration did not exclude the effect of restricting competition. Ultimately, fines could only be imposed without requiring them to return to their pre concentration state. The newly revised "Anti Monopoly" selects and applies different punishment schemes based on the different effects of illegal implementation of concentration of operators on market competition, taking into account relevant experience from abroad and the actual national conditions of China. The amount of fines has also been increased. When the concentration behavior has or may have the effect of excluding and restricting competition, a penalty of less than 10% of the previous year's sales will be imposed. If the concentration behavior does not have the effect of excluding and restricting competition, a fine of no more than 5 million yuan will be imposed. This gives antitrust law enforcement agencies a certain degree of discretion, so it is also required that law enforcement agencies should consider various factors comprehensively, follow the principle of proportionality, and set an appropriate amount of fines when determining the specific amount. In this regard, this paper suggests that law enforcement agencies can set a certain proportion of fines based on the enterprise's operating income and in combination with the specific circumstances of the case, so that the punishment can give full play to its deterrent power.

5. Conclusion

The digital economy is a hot topic in current international competition and an important growth point for high-quality development of China's economy. Its development has broken traditional market boundaries, promoted technological innovation, and improved consumer welfare. However, with the increasing phenomenon of digital platform enterprises enhancing their competitive strength through mergers and acquisitions, the traditional concentration control system for operators faces four challenges due to the characteristics of platforms such as dual (multi) edge market effects, network effects, and lock-in effects, such as limitations in application standards, difficulty in defining "relevant markets", incomplete competition analysis frameworks, and insufficient punishment and deterrence. How to effectively regulate the concentration behavior of digital platform operators has become an urgent problem to be solved. This article believes that first of all, China should establish a declaration standard system with transaction volume standards as a supplement and turnover standards as the main focus. Based on strict division of the scope and objects that meet the mandatory declaration conditions, large internet enterprises should be required to bear a certain obligation to inform

and improve the efficiency of antitrust law enforcement. Secondly, law enforcement agencies should flexibly apply relevant market analysis methods in specific cases to save judicial resources and law enforcement costs. Once again, improve the competitive effectiveness analysis framework by incorporating innovation damage factors and emphasizing user data and privacy protection, in order to adapt to complex and ever-changing platform monopolies. Finally, based on the enterprise's operating income, set the proportion and amount of fines according to the actual situation of the case, and enhance the deterrent power of punishment. In addition, we should continuously strengthen the research and practical exploration of antitrust theory in the digital economy, and achieve the improvement and innovation of the centralized control system for digital platform operators by combining traditional antitrust theory with the development of the digital economy.

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