

# The Anti-nonopoly Law Regulation of Big Data Killing in the Background of Digital Economy

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**Abstract:** In the era of digital economy, technologies such as algorithm recommendation and big data analysis have brought convenience to the production and life of modern society, but they have also generated potential risks. Big data killing not only directly infringes on consumer rights, but also disrupts market competition order. At present, there is no law to determine the legal nature of big data killing behavior, and there is no unified view in the qualitative academic community, which further affects how to use existing laws for regulation. However, the differential treatment of consumers by big data in terms of price constitutes price discrimination, which needs to be regulated by anti-monopoly laws. The characteristics of big data, such as strong concealment and high harm, have brought some problems to the regulation of anti-monopoly laws. Based on these issues, relevant suggestions are proposed for the anti-monopoly law regulation of big data killing, in order to protect consumer rights, ensure effective market competition, and maintain dynamic competition order.

**Keywords:** Digital Economy; Big Data Kill; Price Discrimination; Anti-monopoly Law Regulation

## 1. Introduction

With the development of the information age, technologies such as algorithm recommendation and big data analysis have brought many conveniences to the production and life of modern society, but they have also generated huge potential risks. For example, the emergence of the phenomenon of big data killing is precisely due to the nature of capital chasing maximum profits, which leads to the abuse of data advantages. At the beginning of 2018, the event that Ctrip, Feizhu and other platforms differentiated pricing for users in

terms of air tickets and hotel prices was exposed by the media, and the word "big data killing" was known by the public. Later, there were frequent events such as ticket fees, commodity prices, and member package differential pricing in the process of consumers' consumption on the Internet platform. The phenomenon of big data killing has always attracted people's attention and discussion.

The phenomenon of big data killing frequently occurs in multiple fields and platforms, and the relationship between consumers and Internet platforms is becoming increasingly tense. Generally, when consumers find that they are confronted with big data blackmail and want to protect their rights, Internet platforms will use reasons such as consumption time, region, inventory, and activity preference changes to justify, which makes it very difficult for consumers to protect their rights. Although there is ongoing discussion on how to qualitatively classify big data plagiarism in academia, there is still no consensus on how to do so. Due to various reasons, consumers have weak awareness of protecting their rights after experiencing "plagiarism", and there are not many precedents related to big data plagiarism until now.

## 2. Overview of Big Data Killing Behavior

### 2.1 The Meaning of Big Data Killing Behavior

Since the emergence of commodity exchange, "killing off" behavior has existed, specifically manifested as merchants using their understanding and trust in customers to obtain customer wealth through improper means. Merchants analyze the appearance, clothing, and behavior of customers through multiple direct contact with them, and use personal experience to determine their personal preferences, consumption ability, and other characteristics. Based on the characteristics

they possess, different customers are priced differently. However, this kind of "killing" behavior requires a large cost and energy consumption, limited information is obtained, the harm of infringement is weak, and the scope involved is relatively small, ultimately not affecting market competition and order.

And big data familiarization occurs in the context of the big data era, where the use of big data analysis technology makes the platform much more familiar with users than in the past. Once a user registers as a member of the platform or has a relative relationship with the operator, every move they make on the platform will produce "traces". The operator can use relevant data processing techniques to collect, filter, encompass, and predict personal information such as transaction habits, personal preferences, and consumption ability of each user, and achieve differential pricing through specific algorithms. Moreover, the effectiveness and targeting of big data analysis technology can also enable large-scale differential pricing, involving a wide range of factors that will fundamentally affect market competition and order.

So, big data killing refers to the price discrimination behavior of operators in the digital economy era, who use big data technology to collect personal preferences, consumption ability, and other information of users in order to seek maximum profits. By analyzing the user information they possess, they allow prices to fluctuate according to user characteristics and discriminate against old customers [1].

## **2.2 Characteristics of Big Data Killing Behavior**

Firstly, the anonymity of big data killing behavior is strong. From the beginning of the "connection" between platform operators and consumers, operators have been constantly obtaining data from various consumer behaviors. As long as consumers engage in activities through devices, data traces will be left behind. Then, operators use relevant data processing technologies to condense information that can bring benefits to themselves, and use relevant information to create personalized push notifications and differential pricing to extract the greatest unfair benefits. Throughout the entire process, firstly, the process of data collection, analysis,

and utilization is very covert; Secondly, differential pricing is directly implemented using algorithmic tools, and how algorithmic tools operate is protected by trade secrets and not known to consumers; Finally, it is difficult to detect whether or not they have been killed by big data. Because Internet platforms use algorithmic tools for differential pricing, consumers are independent and have no opportunity to exchange and compare prices, so it is difficult to find consumers even if they have been killed by big data.

Secondly, the targeting of big data killing behavior is strong. Big data anonymization behavior utilizes user personal information through algorithmic tools to determine their payment ability, preferences, habits, and other factors. Compared to ordinary "anonymization" that can only be collected based on experience and appearance, data processing technology collects a larger amount of information and summarizes user characteristics more accurately and effectively. By utilizing this information data, Platform operators can provide more targeted personalized recommendations and differential pricing to consumers or potential consumers, thereby significantly improving the success rate of big data analytics.

Thirdly, the harm of big data killing is significant. The use of data processing technology for big data ripening is not limited by geographical and object conditions. Compared with the traditional "ripening" behavior, which has the characteristics of less impact and harm, big data ripening can simultaneously carry out large-scale differential pricing, involving a large range. It not only directly affects every consumer who has been "ripened", infringes on consumer rights, but also damages the overall interests of consumers, affecting a wide range, Unbalanced market order that promotes fair competition will ultimately hinder the innovation capabilities of related industries, and most importantly, it will trigger a series of serious information security and trust issues.

## **3. The Illegal Analysis of the Data Killing Behavior Under the field of Anti-monopoly Law**

### **3.1 The Qualitative Nature of Big Data Killing Behavior**

Some scholars believe that the act of big data fraud belongs to the price fraud stipulated in Article 6 of the Regulations on Prohibiting Price Fraud, which refers to the use of fraudulent or misleading pricing methods by operators to induce consumers to engage in improper transactions and harm the legitimate rights and interests of consumers. Generally speaking, there must be fraudulent intent to constitute price fraud, so this viewpoint also proposes to broaden the scope of price fraud and not impose necessary limitations on the subjective elements of price fraud [2].

However, this viewpoint is not appropriate because in the context of big data targeting behavior, operators only price based on the analysis and prediction results of consumer information, and there are no improper pricing or pricing methods. In addition, the theory of price fraud also overlooks the situation where operators excessively collect consumer information during the early stage of big data fraud and abuse consumer personal information to achieve precise differential pricing.

At present, most scholars believe that the act of using big data to kill consumers belongs to price discrimination. They believe that operators collect various consumer information, use big data analysis and judgment, automatically make decisions to form user "profiles", and personalized push or differential pricing to consumers, in order to maximize residual profits for those who cancel fees [3]. In order to obtain maximum benefits, platform operators use big data to collect, organize, and mine real-time information of users, and differentiate their prices without reflecting cost differences.

It can be said that in the era of platform economy, big data killing is a new form with monopolistic nature. Therefore, the academic price discrimination theory believes that big data killing is a more reasonable form of algorithmic pricing discrimination. There are two basic conditions for the realization of big data killing: user's personal information and differential pricing. Differential pricing is the focus of research. In essence, it is a way to treat different consumers differently. It is consistent with price discrimination in the anti-monopoly law in behavior. It can be regulated by the anti-monopoly law, which can regulate the behavior of operators who use information

advantages and algorithm tools to have a monopoly position in the field of Internet transactions to undermine the competitive order of the market.

### **3.2 Big Data Killing Can Constitute Price Discrimination in the Anti-monopoly Law**

At present, the problem of big data maturity is a very prominent one, which has seriously brought huge impacts to consumers and the market. At its root, big data crowdsourcing refers to platform operators using algorithms to set different prices based on user data, but this pricing does not reflect cost differences. At present, both the Price Law and the Anti Monopoly Law have provisions to regulate price discrimination. However, the Price Law regulates price discrimination against other operators, while big data fraud mainly targets price discrimination against consumers. Therefore, the Anti Monopoly Law has the greatest regulatory effect on big data fraud. Article 17, paragraph 6, prohibits the abuse of market dominance to impose price discrimination on counterparties with similar conditions.

The ultimate goal of big data maturity is to achieve price maturity, which is a differential treatment implemented for consumers. When operators with a dominant market position implement big data killing, it is entirely possible to constitute price discrimination. In addition, the Platform Anti Monopoly Guidelines also have provisions prohibiting platform operators from using big data technology for price discrimination. Therefore, using the Anti Monopoly Law to regulate big data plagiarism behavior is in line with its legislative purpose and logic [4]. However, the determination of price discrimination based on big data familiarity should meet the following conditions:

Operators have a dominant market position. In the study of any legal act, the subject of the act is the first element, which determines the goal and scope of the study, and in a sense affects the ideas and methods of the study. The Anti Monopoly Law stipulates that operators who implement price discrimination must have a dominant market position. Market dominance refers to the ability of operators to control trading conditions such as prices in a certain market, or to influence the market entry and exit of other operators. Because operators with

dominant market positions have greater control and influence over the market, once they abuse their dominant position for price discrimination, the competitive order of the market will be disrupted, thereby affecting economic benefits and social welfare. Therefore, in the anti-monopoly law, only pricing discrimination carried out by monopolistic operators can be regulated by the anti-monopoly law.

Implement differential pricing for counterparties with the same conditions. The Anti Monopoly Law has made clear provisions on the constituent elements of price discrimination: "Different treatment shall be given to counterparties with equal conditions in terms of price.". Therefore, the "killing off" behavior in big data constitutes price discrimination and must meet the following conditions:

Firstly, trading counterparties are limited to those with the same conditions. According to the Provisional Regulations on Prohibiting the Abuse of Market Dominance, the meaning of "having the same conditions" can be divided into two categories: one is the trading object, such as trading ability, trading quantity, trading income, etc.; the other is the trading process, such as trading links, trading procedures, trading security, etc. In short, in the context of big data, it is necessary to meet the non substantial impact of differences to a certain extent in order to be considered price discrimination.

Secondly, the target of big data killing is "transaction counterparties", which are not limited to transactions between operators. The Anti Monopoly Law also stipulates that operators discriminate against consumers in pricing. In fact, the most common phenomenon of "cooking" is aimed at consumers. Of course, there are also cases of "killing off" operators in practical operations, such as between upper and lower level distributors.

Thirdly, the mastery of big data should comply with the principle of differential treatment of transaction pricing. Here, the differential treatment in meaning refers to the fact that different trading counterparties receive different transaction prices. However, in practical operation, it is necessary to have a flexible understanding of "price", as the price can be reflected in various forms such as

product price, promised discounts, rebates, and points. Specifically, "cooking" is a behavior of price differentiation, which involves differences in the price of goods, inconsistent transaction prices despite the same original price, and inconsistent cost expenditures due to rebate methods.

Competitive damage results. This is the substantive standard for illegal identification of price discrimination in practice. Therefore, in the illegal identification of big data killing, one should also judge whether it has caused competitive damage. The past market differential pricing can promote economic operation, but under the conditions of the network economy, differential pricing behavior has evolved into big data killing behavior that undermines fair competition and reduces economic efficiency. Although operators in a monopolistic position may be regulated by anti-monopoly laws when engaging in big data fraud without a legitimate defense basis. However, due to the special nature of big data plagiarism, when determining its infringement, attention should be paid to the determination of its substantive value to avoid overcorrection and the correct crackdown on "plagiarism" behavior that appears to have price discrimination but has not actually caused competitive results; At the same time, to prevent regulatory loopholes, attention should be paid to distinguishing between "kill and kill", which may not seem to have obvious price differences, but have caused great harm to competition.

Without justifiable reasons. The Anti Monopoly Law stipulates that there is no justifiable reason for abusing market dominance for price discrimination. So, even if big data fraud meets the requirements of price discrimination, if it is determined that the behavior is carried out based on reasonable reasons, then the anti-monopoly law cannot punish it, even if it has adverse effects on market competition.

What is a legitimate reason can refer to the Provisional Regulations on Prohibiting the Abuse of Market Dominance. Firstly, the purpose of this clause is to exclude price discrimination in specific transactions or industries based on trading habits and industry practices; Secondly, first-time transaction discounts, with terms indicating that it is reasonable to offer special offers for first-time

transactions within a certain time frame; Thirdly, other reasons include changes in circumstances, cost defenses, and adaptation to competition. In terms of changing circumstances, if platform operators can prove that market conditions have changed and previous pricing has lost its rationality, then their differential pricing for different consumers is reasonable; In terms of cost defense, price discrimination is not opposing all price discrimination, but rather limiting differential pricing imposed at the same transaction costs. So, when the operator can prove that their "killing" is due to different costs, the difference in pricing is also reasonable. In the online environment, especially in the era of big data, the competition among platform operators is becoming increasingly fierce. Intelligent algorithms can price products in real-time, and if other operators cannot respond in a timely manner, they will be eliminated. So, if "killing" is a response measure that is forced to be taken due to market competition demand, then this "killing" is reasonable, because "killing" can benefit consumers to some extent, without causing harm to competition or social benefits, which is a legitimate reason.

#### **4. The Dilemma of Regulating Big Data Killing in the Anti Monopoly Law**

Big data analytics is a product of the combination of big data technology and algorithms, with unique technical characteristics and operational methods compared to the past. Due to its high technological content and high degree of concealment, the anti-monopoly law has not fully met the regulatory requirements for price discrimination in big data killing. Currently, the anti-monopoly law has the following problems in regulating big data killing:

##### **4.1 The Scope of the Behavior Subject Is Limited to Too Narrow**

Article 17 of the Anti Monopoly Law and Article 19 of the Interim Provisions on Prohibiting the Abuse of Market Dominance stipulate the prohibition of price discrimination through the abuse of market dominance. The prerequisite for its application is that the subject has a dominant market position. In practice, the prerequisite for big data maturity is to have sufficient user information in order

to accurately profile users and differentiate pricing. Therefore, when implementing big data maturity, although most operators accused of implementing big data maturity have a dominant market position, in the digital economy era, due to the innovation of the big data industry and possible data barriers, some enterprises have strong competitiveness and occupy a large market share, but they may not necessarily have a dominant market position. Therefore, the size of market share does not fully represent that the enterprise has a dominant market position. Therefore, the "maturity" behavior implemented for operators with market advantages also needs to be regulated.

##### **4.2 Difficulty in Determining Market Dominance**

Article 18 of the Anti Monopoly Law provides for the definition of market dominance. In traditional anti-monopoly cases, determining market dominance first requires the relevant market, and then it is often determined by calculating its market share. Article 19 stipulates that in the case of presumed market dominance, when the operator's relevant market share reaches half, it is presumed to have market dominance [5]. Market share is reflected by the proportion of the company's sales revenue to the total sales in the relevant market. However, big data price discrimination mostly occurs in the Internet environment, with a large cross industry and dynamic competitive behavior. It is more difficult to identify "market share" [6]. In the era of the big digital economy, in the early promotion stage, in order to gain popularity and quickly seize the market, operators often adopt high subsidies. At this time, from the book, the operator only has very small sales or even no sales, but they have obtained a certain user model and user data. In this situation, sales cannot accurately reflect the company's market share. In the rapidly changing field of Internet and big data, due to the influence of various aspects, the change of market dominance in the digital economy era is faster than that in the traditional market, which will also make the definition of market dominance more difficult.

### 4.3 The Plea of Justification Was Abused

"Legitimate reasons" are exempt from liability for price discrimination, but there is no regulation on what constitutes "legitimate reasons" [7]. Although "legitimate reasons" have been further refined in Article 19 of the Provisional Regulations on Prohibiting the Abuse of Market Dominance, there is no clear definition. When platform operators are identified as engaging in big data fraud, they often deny the implementation of big data fraud based on reasons such as changes in consumption time, regions, activity discounts, promotion benefits, etc. For ordinary consumers who encounter big data fraud, it is impossible to know whether their explanations are true because they are not clear about the specific pricing algorithm and rules of the platform operator. In the case of infringement liability dispute between Liu Quan and Beijing Sankuai Technology Co., Ltd., the operator used the change in consumption time as a defense; In the Meituan "killing off" membership incident, Meituan's response was that positioning deviation led to differences in delivery fees; The incident of Qunar website raising product prices for Apple phone users on the same flight and time, arguing that there are bugs that lead to price differences displayed by different consumers. In short, due to the concealment of the algorithmic process and operation of big data killing, legitimate reasons are abused, and there are various "legitimate" reasons, which leads to significant uncertainty in the recognition of big data killing and makes it difficult for the Anti Monopoly Law to regulate big data killing [8].

### 4.4 The Private Litigation System Is Not Perfect Enough

For individuals, it is difficult to collect evidence to determine the maturity of big data. The key evidence is mostly in the hands of platform operators, making it difficult to obtain evidence. As mentioned earlier in the infringement dispute between Liu Quan and Sankuai Technology, Liu Quan can only provide payment invoices, while the key evidence is controlled by Sankuai Technology. As an individual, Liu

Quan is difficult to obtain, and it is even more difficult to prove the existence of big data maturity behavior. According to the principle of "who claims, who provides evidence", when consumers request relief, they should prove that they have suffered harm in the big data killing behavior, and that the platform operator has committed the damage behavior and is at fault. In practice, due to the inability of consumers to access enterprise data and price rules, platform operators have obvious advantages in information and data, so consumers often find it difficult to fulfill their burden of proof when defending their rights, and thus bear the risk of failure in safeguarding their rights. Currently, in the context of high cost and low success rate of rights protection, consumers are not enthusiastic about "big data anti maturity" rights protection.

## 5. Suggestions on Improving the Regulation of Big Data Killing and Ripe Anti-monopoly Law

### 5.1 Moderate to Broaden the Scope of Behavior Subject

In the era of digital economy, the main body that utilizes various technological barriers to implement big data killing should not only be limited to operators with monopolistic market positions, but also regulate some operators who implement price discrimination with strong competitiveness. Therefore, it is necessary to appropriately break through the limitations of "market dominance", moderately expand the scope of subjects, and regulate the non dominant platform operators who use their data advantages to have a coercive effect on trading counterparties. For example, platforms such as Meituan and Ctrip have significant advantages over other operators or consumers in their industries. Although they do not have a dominant market position, they can fully utilize their advantages to discriminate against counterparties or customers in terms of price. In this regard, the theory of relative advantage position can be used as a reference to regulate price discrimination caused by the abuse of relative advantage, thereby achieving comprehensive regulation of big data killing.

### 5.2 Comprehensive Identification of the Dominant Market Position

Usually, market share is mainly calculated by the proportion of the company's sales revenue to the total sales volume in the relevant market. However, given the nature of the big data market, Article 11 of the Provisional Regulations on Prohibiting the Abuse of Market Dominance stipulates that whether operators in the digital economy era have a market dominant position can consider the competitive characteristics of industry operations, the number of users, key technological breakthroughs, and data control capabilities [9]. The first paragraph of Article 11 of the Anti Monopoly Guidelines of the State Council Anti Monopoly Commission on the Platform Economy stipulates that the market share of platform operators can be considered based on the characteristics of the platform economy, including user numbers, click through rates, usage time, and platform business models. So, in terms of determining market share, it is necessary to pay attention to the proportion of data factors. This can be based on the ability of platform operators to process and master relevant data, that is, the number of platform users, activity, and stickiness should be the primary factors for determining market share, so as to comprehensively judge whether enterprises have a dominant market position [10].

### **5.3 Clarify the Criteria for Judging Good Reasons**

To prevent the abuse of "justifiable reasons" due to unclear standards, the criteria for determining "justifiable reasons" should be further clarified. Combined with the value goals of anti-monopoly law, the following standards are mainly summarized, which are interrelated and need to be comprehensively considered in practice.

Firstly, efficiency standards. Good competitive behavior can improve the overall economic efficiency of society. First, it can be determined whether the big data killing behavior is necessary to improve competitive efficiency. If so, it can be judged whether the big data killing behavior is legitimate. If not, it can be judged whether the behavior can bring about an increase in production or allocation efficiency from the perspective of consumer rights and overall social welfare. Once the implementation of big data killing does not improve the competitive efficiency of the

enterprise, nor does it reduce production costs, and may even hinder innovation, reduce output, and reduce competitive benefits, then the platform operator's implementation of this behavior is not justified.

Secondly, fairness standards. Any competitive behavior may involve consumers, platform operators, social public interests, etc., and big data killing is also involved. It determines whether the mastery of big data can achieve coordination among the interests of multiple stakeholders, including the balance between buyers and sellers, market operators, local and overall social welfare. If big data killing only adapts to fair competition among competitors to maintain normal competitiveness without causing harm, then this behavior is justifiable.

Thirdly, the overall interest standard. If the general consumer has not been harmed or can benefit, then this behavior is legitimate. If big data killing can benefit consumers as a whole, there is no possibility of harming a single consumer. On the contrary, big data killing behavior has to some extent improved the overall social welfare level and protected the legitimate rights and interests of operators.

### **5.4 Improve Antitrust and Private Litigation**

The regulation of big data censorship requires public power protection and private litigation intervention. Due to the significant information gap between operators and consumers, and the fact that big data analytics involves professional technical knowledge, consumers often face the challenge of being unable to provide evidence, which further increases the risk of losing a lawsuit. So in order to solve the problem of difficulty in providing evidence for consumer rights protection and strengthen private enforcement of big data anti-monopoly measures, two approaches can be taken:

Firstly, adopt an inversion of the burden of proof. In private litigation under the Anti Monopoly Law, there is a provision for the inversion of the burden of proof, but in cases of abuse of market dominance, the principle of "whoever claims shall provide evidence" still applies [11]. In the case of platform operators abusing big data to kill, the burden of proof for consumers can be reduced, and the operator should bear some of the burden of proof. In this regard, the provisions of private antitrust litigation can be used as a reference. The

plaintiff only needs to prove the existence of damage facts, and the defendant needs to prove that there is no subjective fault in the pricing behavior, in order to balance the disadvantaged position of consumers [12].

Secondly, expand the scope of private litigation and establish public interest litigation. Big data killing usually targets all consumers on the platform. Due to the large number of victims, it often causes serious damage to the overall interests of consumers, with minimal individual losses. Therefore, in the judicial relief of big data killing, a collective relief mechanism is more needed. Anti monopoly public interest litigation is a lawsuit that can gather most consumers together to engage in adversarial actions against platform giants. It helps to enforce anti-monopoly laws and regulate illegal monopolies on platforms, and can provide fair, timely, and effective legal assistance to the public, consumers, and even small and medium-sized enterprises.

## 6. Conclusion

Big data ripening is the result of improper use of algorithm analysis technology. The original intention of this technology is to improve efficiency and enhance the user's sense of use. However, some operators use market advantages to obtain the maximum surplus of consumers and misuse algorithm analysis technology for big data ripening, which is harmful and may also reduce market economic efficiency. The mature behavior of big data varies in different stages, with the initial stage being information collection and the mid-term being algorithm calculation, but ultimately presenting as differential pricing for consumers. Regarding differential pricing behavior, if the price discrimination requirements of the Anti Monopoly Law are met, it constitutes price discrimination regulated by the Anti Monopoly Law. However, in practice, due to the characteristics of big data defamiliation and Internet platforms, there are many problems in the anti-monopoly law's regulation of big data defamiliation, such as the narrow scope of actors, difficulties in identifying market dominance, abuse of legitimate reasons, and imperfect private litigation system. The anti-monopoly law should be based on the current and future needs of the real dilemma of big data anti-monopoly law regulation. By moderately expanding the scope of behavior

subjects, comprehensively identifying market dominance, further clarifying "legitimate reasons", and improving the private litigation system, various types of market behavior can be carried out in an orderly manner, fully exerting the regulation and guidance of anti-monopoly law on market behavior, creating and maintaining a good market competition environment, and also ensuring that the legitimate rights of consumers are fully protected by the law.

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