Original Paper

Dilemma and Breakthrough: Review on Substitution Analysis of the Definition of Relevant Markets and Platforms—From the Perspective of Guideline on Anti-Trust Platform Economy by the Anti-Trust Committee of the State Council

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Abstract

The prosperity of platform economy posed new issues for antitrust law enforcement and new challenges to the definition of relevant markets in antitrust investigations. Substitution analysis is not only a traditional method of relevant market definition, but also the underlying logic throughout the process of relevant market definition. It can still be applied to relevant market definition in the context of platform economy. Based on the Guideline of Platform Antitrust, this paper starts with the regulations about the definition of relevant markets in platform economy. It briefly analyzes the dilemmas of traditional methods of defining relevant markets in platform economy. Then, it reviews the limitation and rationality of substitution analysis of relevant market definition.

Keywords

platform economy, relevant market definition, antitrust

1. Introduction

With the deep integration of information & communication and digital data technologies, the constantly growing platform economy has become a field of innovation in modern economy. In addition to optimizing the allocation of resources and accelerating economic transition, it is also reshaping the traditional ecology of competition. The various new forms of monopoly are also causing impacts on existing competitive legal systems. In the ordinary logic and context of anti-monopoly regulations, regardless of competitive behaviors, the definition of relevant markets is the essential step. Due to the

unique features of pricing strategies and platforms like dynamic competition, multilateral market structures and cross-network externality, it has become significantly difficult to clearly define the scope of competitive relations. In this regard, the reasonable definition of relevant markets in platform economy becomes the focus and difficulty in the academic and practical domains of antitrust jurisdiction (Chen & Guo, 2021). Guideline on Anti-Trust Platform Economy by the Anti-Trust Committee of the State Council (hereinafter referred to as Guideline of Platform Antitrust) clearly stipulates: substitution analysis is the essential method of commodity market definition in platform economy. The primary purpose of substitution analysis is to clarify and assume the scope of commodities relevant to the functions provided by monopolists. The expansion and superposition of commodity functions, caused by trans-boundary competition of platform operators, have made it more difficult to conduct substitution analysis of commodities. In particular, when using substitution analysis, it is necessary to consider the dynamic competition and business model of platform economy, and the updating of technological applications. The limitation of reasonable justification of substitution analysis should be realized as well (Chen, 2021).

2. Relevant Market Definition in Platform Economy According to Guideline of Platform Antitrust

The definition of relevant markets is the logical beginning of the abuse of market-dominant positions. All forms of competition take place within a scope of markets. Defining relevant market means the defining market scope of competition between operators. According to the Antitrust Law and Guidance on Relevant Market Definition by the Antitrust Committee of the State Council, "relevant markets" refer to the commodities and regions for operators to compete in terms of specific goods or services. Other than stipulating the purposes and principles of antitrust in platform economy, Guideline of Platform Antitrust also explains the methods of definition of relevant commodity markets and regional markets, and places emphasis on the necessity and importance of adhering to individual case analysis, as well as the role of relevant market definition in various cases. In spite of the challenges in platform economy posed by network externality, unique business operation, pricing strategies and high market concentration (SSNIP test could not be applied in some specific cases), substitution analysis is still a basic method. Other methods, such as SSNDQ and SSNIC, have been put forward on this basis as well in recent years (Han, 2021). Compared with the previous version of Antitrust Guidelines on Platform Economics (Exposure Draft), Guidelines of Platform Antitrust deleted statements concerning "relevant markets without being defined", which reveals the prudential regulation of antitrust supervision sectors. To some extent, it also prevents the risk of uncertain application of the "direct evidence act" in practice (Chen & Guo, 2021).

3. Dilemmas: Traditional Methods of Defining Relevant Markets in Platform Economy and Causes of Failure

When it comes to defining relevant markets, factors like commodity, region and time should be taken into consideration. For Internet platforms, defining relevant commodity markets is the key. Confirming the substitution of goods is the most important element in defining relevant markets. Substitution analysis is one of the conventional ways of market definition, including the analysis of demand substitution and supply substitution. To be more specific, demand substitution is the primary method, and supply substitution is the secondary and complementary method. In addition, different from traditional economy, the homogeneity of goods in platform economy is constantly enhanced along with the expansion and superposition of commodity functions. If substitution of commodities is identified according to offline standards, it is likely to excessively expand the scope of relevant markets.

Traditional demand and supply substitution methods and the assumed trustbuster testing method pay more attention to the functions and prices of goods in unitary markets. With the impact of new features on the Internet platform, traditional methods of relevant markets revealed obvious defects and weaknesses. Influenced by bilateral/multilateral markets, there are two causes for the failure of traditional methods to define relevant markets:

Firstly, different users groups are involved in bilateral/multilateral markets. Moreover, different markets are interdependent and complementary, i.e., the services are interdependent and complementary promoting trades among bilateral/multilateral users. Besides, positive cross feedback effects may magnify the impact on unilateral users. The conducts of any platform about the users of one side can have an influence on the demand on the other side. Charge increases on users of Side A not only lead to the reduction in user demand of this side, but also less appeal to the platform users of Side B. Cross-side feedback mechanism gives rise to significant declines in total revenues of platforms (Tang Yaojia & Tang Chunhui, 2021). One change in market value can cause another change in price changes. The changes in supply and demand in another market can have reverse impacts on this market, thus causing the results of price tests to deviate from original anticipation (Zhang, 2017). In contrast, the traditional market definition is to assume the premise of no connection existing between markets and mutual independence between operators' markets, so as to analyze the behaviors of operators in individual markets.

Secondly, in general, if price is equal to marginal cost, it is feasible to maximize profit. Due to the Influence of bilateral/multilateral markets on price and cost structures, reasonable enterprises focus on overall benefit maximization rather than the profit maximization of the platform market at both ends, which is different from unilateral market analysis structures. Furthermore, in antitrust regulation, measuring the market power of trading platforms means more than just the price mark-up of users on one side while ignoring the network externality of the other side and between the two sides. It is imperative to measure the total price markups of users on both sides (Zhang, 2017).

4. Deconstruction: Methods of Relevant Commodity Market Definition Oriented by Demand-Substitution Analysis

4.1 Commodity Definition

Commodity definition plays an important part in relevant market definition. Identifying the functions that affect the replacement selection of consumers is the key to confirming essential commodities. Primary functions of users' commodities should be determined by essential demands. "Primary functions" refer to certain functions or sets of functions that can satisfy the basic needs or purposes of consumers when using the commodities. Identifying "primary functions" aims to judge the sources of restrictions in relevant commodity competition. If commodities have the same primary functions, it means both of them may satisfy consumers' demands, i.e. replaceable. However, platform commodities tend to be complex. For this reason, it is likely to face challenges due to the fuzziness of identifying basic commodities (Chen, 2021). In multilateral market analysis, it is necessary to focus on the demand substitution of commodities and services, and comprehensively adopt substitution analysis and quantitative analysis (Huang, 2019).

4.2 Demand Substitution

Demand substitution analysis is the basic method for antitrust law enforcement agencies to define relevant markets, which is highly intuitive and operable. Demand substitution analysis starts from the perspective of consumers. When prices, functions, quality and supply status of commodities change, the substitution of different commodities is determined by the difficulty of converting the demand side.

As for price factors, theories of the Harvard structurist school proposed the model of cross elasticity of demand. The economic definition of cross elasticity of demand refers to the ratio of relative variations caused by commodity prices and commodity demand volumes. Substitutional relations, complementary relations or irrelevancy between commodities can be determined by arithmetical operation of the cross elasticity of demand and price (Lai & Zhong, 2022). Consumers are likely to choose other commodities due to price changes. Such a correlation is the cross-elasticity of demand. For functions, commodity functions have a direct influence on the realization of consumer demands and selections of substitute goods. If commodities have similar or identical functions, they are considered to be replaceable and highly competitive. If commodities have so different functions as to fail to meet the same purposes of usage, they are not quite likely to have substitution. It's worth noting that customers' actual demands cannot be ignored when analyzing the substitution of commodity functions. Special attention should be given to the primary commodity functions that satisfy consumers' basic demands. If commodity functions are differentiated without considering consumers' basic demands, the scope of relevant market definition may be excessively extensive (Chen, 2020).

4.3 Supply Substitution Analysis

Demand substitution analysis starts from the consumers' perspective, while the supply substitution analysis focuses on the operators' perspectives. Supply substitution analysis is conducted based upon factors like operator's input to transform production facilities, the risks and the time to enter target

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markets, so as to define relevant markets according to the degree of substitution among different commodities from operators' perspectives. If changes occur in relative commodity prices and demands, it is less difficult for operators to switch to other productions and utilize production equipment and resources in producing substitute goods. In this regard, the degree of supply substitution is higher, which means they perhaps belong to the same market. Some researchers pointed out supply substitution analysis needs to consider the logic of demand substitution. According to supplier's "demand", it can be understood as the substitution perspective on "willingness or motivation to conduct commercial activities", so as to discuss two factors: the difficulty of production switch and market access (Chen, 2021).

Guidelines of Platform Antitrust also stipulate supply substitution analysis. When it comes to substitution judgment, attributes and applications of commodities can not be ignored. Cross-price elasticity of commodities should be considered as well. But practical situations indicate that demand substitution analysis is used more frequently than supply substitution.

5. Breakthrough: Review the Limitation and Rationality of Defining Relevant Markets Based on Substitution Analysis

5.1 Limitation and Rationality of Substitution Analysis in Platform Economy

Substitution analysis is the essential and primary method of defining relevant markets. It has become a new normal in Internet platform economy, cross-platform competition and mixed operation. Due to digital data and network information technology, marginal costs of platforms providing new goods are quite low. Substitution analysis expands the scope of relevant commodity markets. Commodities with complex functions make it hard to conduct substitution analysis. Meanwhile, due to the influence of multilateral market business model and network effect, it is difficult to identify the amount of relevant commodity markets. Hence, Guidelines of Platform Antitrust responded, "Relevant commodity markets can be defined according to the multilateral commodities involved in platforms. mutual relations and impacts among relevant commodity markets should be considered. If the cross-platform network effects can enable platform operators to implement adequate restraints on competition, relevant commodity markets can be defined according to overall platforms." In addition, the priority of consideration is: according to different network effects of various platforms and specific traits of individual cases, identify effective competition restraints of platform markets. Lastly, based on consumers' demand substitution, define the amount of relevant commodity markets (Chen & Guo, 2021).

Although platform economy has multiple impacts on market definition, the accurate grasp of consumer demands and constant competition is the core for operators in the field of platform economy. Hence, identifying the direct and effective competition among operators still focuses on the substitution of consumer demands. To make the results of relevant markets more accurate and conform to practical market conditions, demand substitution analysis needs to conduct further verification of the rationality,

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i.e., based on consumers' practical status in platform economy, appropriately detail the influential factors of substitution analysis.

5.2 Perfection of Substitution Analysis in Platform Economy

5.2.1 Increase Factors of Substitution

Increasing factors of substitution is conducive to reducing the error terms in relevant market definition, enhancing the accuracy and predictability of conclusions.

Take the number of users for instance. Platform benefits stem from massive users, and network externality will magnify the scope. Hence, user control is the core for platforms. The number of users in platform economy is the factor that needs urgent consideration. Notification on Application of Competition Rules of Access Agreements in Telecommunications Sector, released by the EU, pointed out: the importance of access economy is decided by the coverage of connected networks. What can be predicted is: due to network effects, even if for the advertising platforms of search engines, doubts and questions still exist concerning the substitution between search engines with massive users and those with minor users. network effect is actually incorporated in the consideration of the number of users, thus enhancing the accuracy of substitution analysis (Zhang, 2017).

5.2.2 The Assistance of Data Analysis Tool

In the massive information amount of platform economy, data analysis tool can play a subsidiarity role in identifying consumer switch during different periods and variables of commodities when it comes to demand substitution analysis. Moreover, economic models and certain facts can be utilized in the process of analysis and judgment. For example, some free/odd pricing commodities are charging more to the user side, i.e. original free/odd pricing commodities are offered to VIP users. In other cases, the quality of free/odd pricing service is lowered only to guarantee the experience of users who paid fees. On this basis, analyzing the situation of user and commodity switch will undoubtedly and vividly demonstrate the practical situation of demand substitution in relevant markets (Chen, 2021).

To sum up, although relevant market definition according to substitution analysis has some limitations, the corresponding impacts can be counteracted to some extent. Substitution analysis still has great and practical significance to relevant market definition, especially resolving the issues about relevant market definition in platform economy.

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