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E-commerce and Market Segmentation: A Literature Review

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Abstract: ***Based on the existing literature research results, this paper systematically combs the important research conclusions of the impact of E-commerce on market segmentation, including the measurement and causes of market segmentation, as well as the impact mechanism of E-commerce on market segmentation. Finally, combined with the existing research deficiencies, proposes that specific theoretical or empirical analysis can be carried out for the dual impact effect of E-commerce on market segmentation in the future, in order to provide reference for the academic community to re-examine the relationship between E-commerce and market segmentation, and provide ideas for promoting the formation of a domestic unified market.***

Keywords: E-commerce, Market segmentation, Domestic unified market.

1. Introduction

The proposal of the new development paradigm of "double cycle" marks a major change in China's economic globalization strategy which change from export-oriented away economic globalization to home economic globalization based on domestic demand (Liu and Ling, 2020)[1]. China's economic development will rely more on the domestic market. Accelerating the construction of a domestic unified market is the key of the construction of a robust domestic market, which is related to the smoothness of the national economic cycle. However, in reality, the phenomenon of market segmentation is still prominent, which makes it difficult for China's potential super large-scale market advantage to be transformed into actual competitive advantage, which is an urgent problem to be solved in China's market development.

At the same time, driven by 5G, Artificial Intelligence, Industrial Internet, The Internet of Things and other new infrastructure, E-commerce burst out with great vitality. E-commerce can overcome the limitations of traditional offline business activities. Compared with offline markets, E-commerce is more unified and complete, with higher transaction efficiency. To a certain extent, it weakens the regional "boundary effect" and helps enterprises realize cross regional operation. According to the data of the NBSPRC, in 2019, 109000 enterprises in China carried out E-commerce sales or procurement activities through the Internet, accounting for 10.5%. However, E-commerce may also lead to the intensification of market segmentation. In recent years, monopoly chaos such as "profiteering on big data" and "one out of two" on E-commerce platforms has occurred frequently. Many platform enterprises have monopolized and controlled businesses and users based on their dominant market position. E-commerce has gradually become an important means for platform enterprises to carry out differentiated marketing and misplaced operation, which has seriously damaged the rights and interests of consumers and disturbed the market order, and is not conducive to the formation and development of the unified market. Therefore, does E-commerce help break the market segmentation? Based on this consideration, this paper systematically combs and summarizes the relevant research, including the measurement and causes of market segmentation, as well as the impact mechanism of E-commerce on market segmentation. Finally, based on the existing literature, this paper puts forward the prospect of future research, in order to provide enlightenment for accelerating the construction of domestic unified market.

2. Measurement of Market Segmentation

Many scholars have carried out in-depth analysis on the measurement of market segmentation. The corresponding measurement methods include production method, trade flow method, price method, economic cycle method, questionnaire method and so on. Among them, the production method takes the division of production among regions under the condition of unified market as the starting point, and holds that if goods can flow freely among regions, the industrial structure of various regions should show differences, that is, if the industrial structure among regions converges, then the degree of market segmentation is high (Young, 2000)[2]. However, for developing countries, the convergence of industrial structure does not indicate the intensification of market segmentation. This trend may also be caused by the rapid industrialization process or the catch-up upgrading of consumption structure in underdeveloped areas and extended to production links (Zhang, 2014)[3]. Different from the production method, some scholars start with circulation trade and use the trade flow method to measure it, so as to reflect the degree of market segmentation with the change of inter regional trade flow (Poncet, 2003)[4]. However, the trade flow method also has some defects, which are mainly reflected in many factors affecting trade flow and difficult to fully control, thus affecting the accuracy of measurement results. Domestic trade flow data are often difficult to obtain and have weak operability (Xu, 2002)[5].

Based on the "law of one price", the price method judges the market segmentation according to the change trend of commodity price difference between regions. Price method can be divided into static price method and dynamic price method. Most studies use the static price method to measure market segmentation, pay attention to the price difference between regions (actual price difference or price index difference) (Plarsley and Wei, 1996; Dvir and Strasser, 2018)[6-7], investigate the statistical indicators such as the mean and standard deviation of price difference, and use the matching method of adjacent provinces or all provinces to calculate. Because of its advantages in theoretical meaning and data availability, static price method is widely used in empirical research. However, the calculation of static price method is based on the simultaneous production of goods in multiple places and mutual arbitrage. This condition can not be fully met when the pattern of division of labor and production is formed among regions. Therefore, it is particularly important to use the dynamic price method that pays attention to the linkage characteristics of price difference between regions to measure market segmentation. The dynamic price method uses the first-order autoregressive coefficient or the sum of autoregressive coefficients of the price difference between the two places calculated based on the time series regression model to measure the dynamic fluctuation characteristics of the price difference, which can more accurately reflect the sensitivity of commodity flows between regions to price signals, and has a broader application prospect when the availability of micro data is improved (Zhang, 2020)[8].

In addition, some scholars use the business cycle method and questionnaire survey method to measure market segmentation. As far as the economic cycle method is concerned, it highlights the intertemporal and dynamic nature, and measures the market segmentation by measuring the correlation degree of each regional economic cycle (Mody and Wang, 1997)[9]. However, the relevant research has not fully considered the negative impact of the uncertain factors of China's transition economic stage on the asynchronous changes of the economic cycle, and the estimation results may be biased. Fan and Wang (2000)[10] and Li (2004)[11] used the questionnaire survey method to measure the market segmentation, and obtained the first-hand data about the regional markets through field research. It was found that the overall degree of market segmentation caused by local protection is gradually decreasing. Although this method can more truly reflect the degree of market segmentation, field research is often time-consuming and inefficient.

3. Causes of Market Segmentation

The causes of market segmentation are complex, which can be roughly divided into three categories: natural factors, technical factors and institutional factors. First, natural factors. Affected by physical factors such as spatial distance, the two places constitute a natural market segmentation. On the one hand, the information barrier caused by geospatial hinders the trade between regions to a certain extent, which is not conducive to the cross regional flow of commodity factors (Zhao, 2012)[12]. On the other hand, the customs, dialects, religious beliefs and other cultural backgrounds are obviously different between different regions, resulting in the difference of consumption demand between regions, which makes enterprises tend to invest limited resources locally, that is, there is the effect of "local market preference", thus forming market segmentation (Ding et al., 2018)[13].

Second, technical factors. Transportation conditions are regarded as an important factor affecting market segmentation, which is related to the smooth flow of goods between regions, and the transportation conditions are determined by the technical level. The difference in the maturity of technical level between regions often leads to technical market segmentation. Existing studies have pointed out that the difference of infrastructure level between regions is closely related to market segmentation (Fan et al., 2017)[14]. In terms of trade infrastructure, the research of Wang and Zhang (2012)[15] shows that the continuous expansion of the scale of circulation enterprises may aggravate the market segmentation, and enterprises focus more on their local business activities. At the same time, the "branch" channel structure formed by circulation reform also helps manufacturers realize regional price discrimination and continuously strengthen themselves in path dependence, It is not conducive to market integration. In terms of transportation infrastructure, many studies have found that the insufficient supply of transportation infrastructure may lead to the limited flow of goods and factors between regions and the further intensification of market segmentation (Dong and Jiang, 2020)[16].

Third, institutional factors. Compared with natural market segmentation and technical market segmentation, institutional market segmentation characterized by local protection is more common. On the one hand, while the reform of fiscal and taxation system has brought development impetus to local governments (Cai and Treisman, 2006)[17], it has also strengthened the self-protection consciousness of local governments, hindered foreign investors from entering the local market and the outflow of local manufacturers through various administrative means, resulting in serious market segmentation (Fan and Song, 2020)[18]. The political game launched by local government officials due to promotion incentive and rent-seeking incentive also has a strong distorting effect on the commodity and factor market, accelerating this segmentation process. On the other hand, the market segmentation largely comes from the implementation of the government led heavy industry priority development catch-up strategy. At the beginning of the founding of new China, in order to catch up with the British and American countries, the central government implemented the catch-up strategy of ignoring the factor endowment structure and comparative advantage, resulting in the loss of self-generating ability of enterprises in market competition. For the need of enterprise protection, the government increased local protection, and the market segmentation also intensified. After the decentralization reform, local governments continued this strategy and launched a new round of catch-up, resulting in more serious market segmentation (Lin and Liu, 2004)[19].

4. Influence Mechanism of E-commerce on Market Segmentation

4.1 Market Integration Effect of E-commerce

Some studies show that E-commerce can reduce market segmentation and accelerate market integration, which is mainly reflected in three aspects. First, compared with the offline market, the online market eliminates geographical and administrative boundaries and can weaken the negative impact caused by the distance effect. On the one hand, E-commerce transactions do not need a fixed trading place, which can gather the supply and demand sides in different regions on the network platform for real-time transactions, greatly breaking through the spatial distance limit of transactions, saving transaction costs and reducing information asymmetry (Payne et al., 2017; Fan et al., 2018)[20-21], through unified access conditions, transaction rules, credit system, it services Financial and logistics systems have broken the inherent market segmentation (Guan et al., 2015)[22], and the natural market segmentation has been significantly weakened. On the other hand, under the E-commerce environment, the liquidity of various production factors, especially intangible assets such as knowledge and technology, has been greatly enhanced, making it difficult for local protection to make a difference (Shen and Ni, 2021)[23]. The institutional market segmentation caused by local protectionism is mostly concentrated in the offline market. The control ability of local governments over the online market is very limited. It is difficult to restrict the entry of goods into the region through online channels (Ma and Fang, 2020)[24]. When online goods are sold everywhere, they will no longer face too many market checkpoints and hidden tax burden.

Many empirical studies also confirm the argument that “the boundary effect of online market is lower than that of offline market”. Gomez-Herrera et al. (2012)[25] found that the distance effect has a lower impact on online trade flow than offline trade by comparing the online and offline trading modes of similar goods in 27 EU Member States. Li et al. (2014)[26] Based on Taobao data, used the online trade flow method to measure the boundary effect of online trade. After comparing with offline trade, they found that the average boundary effect of online trade was about 3, which was significantly lower than that of offline trade. Similarly, Lendle et al. (2016)[27] reached the same conclusion based on the research of eBay online and offline trade data of similar commodities in 62 countries. On this basis, Zhan(2018)[28] quantified the development level of E-commerce and the degree of commodity market segmentation respectively, analyzed the impact of E-commerce on commodity market integration from both theoretical and empirical levels, and found that E-commerce helps to reduce commodity market segmentation, and the level of opening to the outside world and the impact of financial crisis have a certain regulatory effect on this effect.

Second, the development of E-commerce is conducive to enhancing the degree of market competition, promoting the optimal allocation and free flow of resource elements among regions, and reducing the segmentation of regional markets. First of all, E-commerce platforms use big data to concentrate procurement, transaction, payment and logistics on one platform, bringing more fair and transparent competition (Lin, 2018)[29], which is highlighted by the continuous improvement of commodity price transparency, The competitiveness of sales links has been greatly improved (Moraga-González et al., 2017; Gorodnichenko et al., 2018; Ellison and Ellison, 2018)[30-32]. Secondly, with the in-depth development of E-commerce, the differentiated competition focusing on product quality and service is becoming increasingly fierce. The emergence of E-commerce platform provides new opportunities for cross regional competition among enterprises and drives enterprises to actively carry out technological innovation, new product development and service innovation to meet the needs of personalized matching, instantaneous consumption and flexible production (Huang et al., 2019; Yu and Wu, 2020)[33-34]. Finally, the emergence of E-commerce business model also intensifies the competition between online and offline businesses to a great extent, resulting in the growth and decline of online and offline consumption (Cavallo, 2017; Zhang and Zhou, 2019)[35-36]. The resulting intensification of market competition will help to improve the production efficiency of the whole supply chain and weaken the market segmentation.

Third, E-commerce helps to optimize the industrial division of labor, improve the level of regional industrial specialization, expand the demand for inter-regional transactions, make the corresponding business flow activities more active, improve the efficiency of the upstream factor market and reduce the degree of market segmentation. The transaction demand between regions largely depends on the level of regional industrial specialization, and the Internet platform trade goes beyond the constraints of space and region. When a region accesses the platform economy, local enterprises will embed into the global value network in a more convenient and economical way. In order to comply with the value chain division of the whole network platform, The region will focus more on industries with comparative advantages, so as to improve the level of regional industrial specialization (Li et al., 2014; Liu and Gu, 2019)[37-38], thus promoting the process of unified market.

4.2 Market Segmentation Effect of E-commerce

Some studies point out that although E-commerce helps to explore market space, it does not necessarily bring regional spatial integration (Biswas and Kennedy, 2014; Xie et al., 2016)[39-40], and may even react on the process of unified market. Moreover, the impact of E-commerce on commodity market segmentation may also be hindered by factors such as culture and system, and the role is very limited (Li and Luo, 2017)[41].

With the expansion of the scale of E-commerce market and the significant increase of industry concentration, the competition between E-commerce platforms gradually shows significant monopoly characteristics. The development and growth of E-commerce platforms may inhibit competition and aggravate market monopoly, which is not conducive to the free flow of goods and factors across regions. In order to prevent actual or potential competitors from entering or expanding the market, the E-commerce head platform is likely to control the price of upstream and downstream by virtue of its competitive advantage of monopolizing user information and market dominance, and adopt predatory pricing, price discrimination Bundling and tie-in consolidate its “monopoly” position (Edelman, 2015; Amelio et al., 2018; Wang, 2020)[42-44]. This feature is particularly obvious in the environment of the continuous popularization and application of the Internet. Xie et al. (2018)[45] Based on the inter provincial panel data from 2003 to 2015, the empirical research shows that the Internet can not reduce the local market segmentation, and may aggravate the neighborhood market segmentation and hinder the improvement of the integration between the local market and the adjacent market. One of the most important reasons is that the Internet and big data technology make it easier for enterprises to reduce inter regional market competition through differentiated marketing and misplaced operation, thus offsetting the effect of the Internet to integrate inter regional markets by reducing information asymmetry and insufficiency.

Further, Sun et al. (2021)[46] used the daily price data of ICPI cross E-commerce platform of Tsinghua University to find that there are also serious market segmentation in China's online market. The E-commerce platform has the advantages of data, technology and retained customers. It can segment and lock the market according to the heterogeneity of consumer preferences or the loyalty of merchants, so as to obtain monopoly pricing power in the segment market. In the face of competition, platforms tend to avoid direct competition with other platforms and take drastic measures to strengthen their locking effect on consumers, so as to obtain long-term high returns from subdivided consumer markets. Their research shows that the dispersion of commodity prices in the online market is common. There are significant differences not only in the prices of homogeneous commodities between platforms, but also in the prices of the same commodity sold by the same merchant on different platforms.

In addition, the E-commerce market has formed a competitive relationship with the traditional wholesale and retail markets to a certain extent, resulting in a strong "crowding out effect", resulting in difficulties in the operation of some physical wholesale and retail stores. There has been a "closing tide" of physical stores all over the country, and some hypermarkets and department stores have even become "fitting rooms" (Fang and Xing, 2015)[47], This will have a certain negative impact on the overall development of China's commodity market, and the process of regional market integration may be hindered (Li et al., 2020)[48].

5. Research Review

By combing the relationship between E-commerce and market segmentation, it can be found that the existing research has not reached a consensus on the impact of E-commerce on market segmentation. Some scholars believe that the development of online market brought by the development of E-commerce can weaken the "boundary effect", enhance the degree of market competition, optimize the regional industrial division of labor, and then reduce the market segmentation, many scholars have also shown that although E-commerce helps to explore market space, it does not necessarily bring regional spatial integration, but will further aggravate market segmentation. The platform monopoly implemented by platform enterprises has become another major incentive for market segmentation.

It can be seen that the existing empirical research mainly focuses on the unilateral impact of E-commerce on market segmentation, and has not conducted a comprehensive investigation on the dual impact of E-commerce development on market segmentation. In fact, E-commerce has gradually become an important means for platform enterprises to carry out differentiated marketing and dislocation operation. Its effect of integrating inter regional markets by breaking geographical space barriers and local protectionism may be compensated. More attention should be paid to the market segmentation effect brought by the development of E-commerce. Future research can carry out specific theoretical or empirical analysis on the dual impact of E-commerce on market segmentation, so as to provide empirical enlightenment for promoting the formation of a domestic unified market and accelerating the construction of the new development paradigm.

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References

[1] Liu Z B, Ling Y H. From away market to home market: A new pattern of China's economic globalization[J]. Journal of Chongqing University (Social Science Edition), 2020 (6): 1-9.
[2] Young A. The razor's edge: Distortions and incremental reform in the Peoples Republic of China[J]. The Quarterly Journal of Economics, 2000, 115(4): 1091-1135.
[3] Zhang H. On the trend of Chinese regional market: segmentation or intergration—A through inquiry and improvement of methodology[J]. Finance & Trade Economics, 2014 (11): 101-110.
[4] Poncet S. Domestic Market Fragmentation and Economic Growth in China?[C]. ERSA conference papers. Eurpean Ragional Science Association, 2003.
[5] Xu X. Have the Chinese provinces become integrated under reform?[J]. China Economic Review, 2002, 13(2-3): 116-133.
[6] Parsley D C, Wei S J. Convergence to the law of one price without trade barriers or currency fluctuations[J]. The Quarterly Journal of Economics, 1996, 111(4): 1211-1236.
[7] Dvir E, Strasser G. Does marketing widen borders? Cross-country price dispersion in the European car market[J]. Journal of International Economics, 2018, 112: 134-149.
[8] Zhang H. Expansion of household consumption and formation of a unified market: "home market effect" in China[J]. Finance & Trade Economics, 2020 (6): 144-160.
[9] Mody A, Wang F Y. Explaining industrial growth in coastal China: economic reforms… and what else?[J]. The World Bank Economic Review, 1997, 11(2): 293-325.
[10] Fan G, Wang X L. China's marketization index—Report on the relative process of marketization in various regions[M]. Beijing: Economic Science Press, 2000.
[11] Li S T, Hou Y Z, Liu Y Z, and Chen B. The analysis on survey of local protection in China Domestic Market[J]. Economic Research Journal, 2004(11): 78-84+95.
[12] Zhao Y L. Market access, border effect and economic concentration—Based on urban economic activity and center-periphery model[J]. China Industrial Economics, 2012(3): 69-81.

[13] Ding C M, Ji Z L, Lei Y, and Liang Z. Dialect and market segmentation: evidence from the synthetic metropolitan area[J]. Economic Research Journal, 2018 (11): 148-164.
[14] Fan X, Song D L, Zhao X Y. Does infrastructure construction break up domestic market segmentation?[J]. Economic Research Journal, 2017 (2): 20-34.
[15] Wang X D, Zhang H. Non-governmental causes for market segmentation in China: Distribution channel, its organization and market intergration[J]. Finance & Trade Economics, 2012(11): 85-92.
[16] Dong H C, Jiang F X. Research on integration of transportation infrastructure and Chinese regional market[J]. Inquiry Into Economic Issues, 2020 (5): 26-39.
[17] Cai H, Treisman D. Did government decentralization cause China's economic miracle?[J]. World politics, 2006, 58(4): 505-535.
[18] Fan X, Song D L. Tax competition and market segmentation[J]. Business Research, 2020 (4): 93-102.
[19] Lin Y F, Liu P L. Local protection and market segmentation: from the perspective of development strategy discussion paper of China Economic Research Center[D]. Peking University, 2004.
[20] Payne E M, Peltier J W, Barger V A. Omni-channel marketing, integrated marketing communications and consumer engagement[J]. Journal of Research in Interactive Marketing, 2017, 11(2): 185-197.
[21] Fan J, Tang L, Zhu W, et al. The Alibaba effect: Spatial consumption inequality and the welfare gains from E-commerce[J]. Journal of International Economics, 2018, 114(7): 203-220.
[22] Guan L X, Song S Y, Sun J Y. The influence of Internet plus on the integration of domestic and foreign markets and Countermeasures[J]. International Trade, 2015 (12): 20-25.
[23] Shen L, Ni P F. E-commerce, local protection and manufacturing distribution[J]. China Business and Market, 2021 (9): 53-61.
[24] Ma S Z, Fang C. Does offline market segmentation promote firms' online selling: An explanation for China's E-commerce expansion[J]. Economic Research Journal, 2020(7): 123-139.
[25] Gomez-Herrera E, Martens B, Turlea G. The drivers and impediments for cross-border E-commerce in the EU[J]. Information Economics and Policy, 2014, 28: 83-96.
[26] Li Q, Li M Z, Luo J F. Internet Trade and Market Integration: Evidence from Taobao.com[J]. China Economic Studies, 2014(6): 40-53.
[27] Lendle A, Olarreaga M, Schropp S, et al. There goes gravity: eBay and the death of distance[J]. The Economic Journal, 2016, 126(591): 406-441.
[28] Zhan N. A research on the effect of E-commerce on Chinese commodity market segmentation[D]. Zhejiang Gongshang University, 2018.
[29] Lin Y Z. The rule of E-commerce platforms and the development of sharing economy[J]. China Business and Market, 2018(1): 85-92.
[30] Moraga-González J L, Sándor Z, Wildenbeest M R. Prices and heterogeneous search costs[J]. The RAND Journal of Economics, 2017, 48(1): 125-146.
[31] Gorodnichenko Y, Sheremirov V, Talavera O. Price setting in online markets: Does it click?[J]. Journal of the European Economic Association, 2018, 16(6): 1764-1811.
[32] Ellison G, Ellison S F. Match quality, search, and the Internet market for used books[R]. National Bureau of Economic Research, 2018.
[33] Huang Q H, Yu Y Z, Zhang S. Internet development and productivity growth of manufacturing industry: internal mechanism and Chinese experiences[J]. China Industrial Economics, 2019(8): 5-23.
[34] Yu W T, Wu S W. Internet platform economy and the decreasing of market distortion[J]. Finance & Trade Economics, 2020(5): 146-160.
[35] Cavallo A. Are online and offline prices similar? Evidence from large multi-channel retailers[J]. American Economic Review, 2017, 107(1): 283-303.
[36] Zhang C, Zhou G. Innovation advantages of E-commerce platform and online-offline competition[J]. Research on Economics and Management, 2019(3): 45-57.
[37] Li H J, Tian Y S, Li W J. Internet thinking and traditional enterprise reengineering[J]. China Industrial Economics, 2014 (10): 135-146.
[38] Liu B, Gu C. Does the Internet promote value chain linkages between two countries[J]. China Industrial Economics, 2019 (11): 98-116.
[39] Biswas T, Kennedy P L. Cross-border trade in the era of the Internet[J]. Journal of International Agricultural Trade and Development, 2014, 10(2): 149-165.
[40] Xie L, Ai W, Zhang H. Does the Internet Accelerate the Integration of Domestic Markets? Evidence from China[J]. Frontiers of Business Research in China, 2016, 10(1): 91-144.
[41] Li Y X, Luo J. Cultural distance, institutional distance and perceived risk in cross-border E-commerce[J]. Research on Financial and Economic Issues, 2017 (3): 106-114.
[42] Edelman B. Does Google leverage market power through tying and bundling?[J]. Journal of Competition Law & Economics, 2015, 11(2): 365-400.
[43] Amelio A, Karlinger L, Valletti T. Exclusionary practices and two-sided platforms[J]. Rethinking Antitrust Tools for Multi-Sided Platforms, 2018: 131-147.
[44] Wang L. The progress report on Internet platform competition regulation[J]. Price: Theory & Practice, 2020(2): 25-30+74.
[45] Xie L, Yan Y, Zhang H. Internet and the integration of domestic regional market: promotion or hindrance?—An empirical test based on spatial econometrics[J]. Review of Industrial Economics (Shandong University), 2018(4): 19-45.
[46] Sun Z, Liu J P, Liu T X. Cross platform competition and Market Segmentation in China' s online market—Evidence based on platform price and price dispersion[J]. China Industrial Economics, 2021(6): 118-136.
[47] Fang F Q, Xing W. Research on the U-shaped relationship between household consumption and E-commerce market scale[J]. Finance & Trade Economics, 2015(11): 131-147.
[48] Li S H, Li W C, Liu D Y. Difficulties and Countermeasures of China's regional commodity market integration in the new era[J]. Journal of Commercial Economics, 2020(1): 143-145.

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