Academic Journal of Business & Management

ISSN 2616-5902 Vol. 1, Issue 1: 113-119, DOI: 10.25236/AJBM.190114

The Mechanism of the Evolution of Global Value Chain Driven by the Collaborative Agglomeration of Producer Services and Manufacturing Industries

Sheng Liu[1], Xiuying Chen[2,*], Naihua Gu[3,4], Yuzi He[5]

1.Institute of Studies for the Great Bay Area, Guangdong University of Foreign Studies, Guangzhou, China, 510006
2.School of Economics and Trade, Guangdong University of Finance, Guangzhou, China, 510521
3.Institute of Industrial Economics, Jinan University, Guangzhou, China, 510632
4.Guangdong University of Petrochemical Technology, Maoming, China, 525000
5.School of Economics and Trade, Guangdong University of Foreign Studies, Guangzhou, China, 510006
[*]Corresponding Author: chenxiuying1128@163.com

ABSTRACT. *In the context of service economy transformation, whether and how the collaborative agglomeration of producer services and manufacturing industry will affect the industrial development performance is attracting wide attention. Based on the theory of industrial space correlation, this paper studies the impact mechanism of collaborative agglomeration of producer services and manufacturing industries on the upgrading of global value chain. Furthermore, based on the current situation and existing problems of industrial agglomeration in China, this paper puts forward some solutions to promote the upgrading of global value chains by optimizing the synergistic agglomeration of producer services and manufacturing industries.*

KEYWORDS: *collaborative agglomeration, producer services, manufacturing, global value chain*

1. Introduction

In the post-industrialization era, a new round of scientific and technological revolution with information technology and service-driven as its core is brewing and rising. With the deep integration of real economy and new generation of information technology such as 5G, big data, artificial intelligence, industrial internet, Internet of Things, block chain and so on, the producer services with knowledge-intensive characteristics will usher in a broader development space and play a more important

ISSN 2616-5902 Vol. 1, Issue 1: 113-119, DOI: 10.25236/AJBM.190114

role in promoting the high-quality development of manufacturing industry. From the statistical data released by the National Bureau of Statistics of China, the service-oriented trend of China's economic structure is becoming more and more obvious (see Figure1). According to the National Bureau of Statistics of People's Republic of China, in 2018, the added value of China's tertiary industry increased by 7.6% year on year. The added value of service industry accounted for 52.2% of GDP. In particular, producer services such as the wholesale and retail, transportation, warehousing and postal, information transmission, software and information technology services, financial industry, leasing and business services have also achieved rapid development. The business income of service enterprises above the scale increased by 11.4% and the business profit increased by 6.5% year on year (The National Bureau of Statistics of China, 2019).

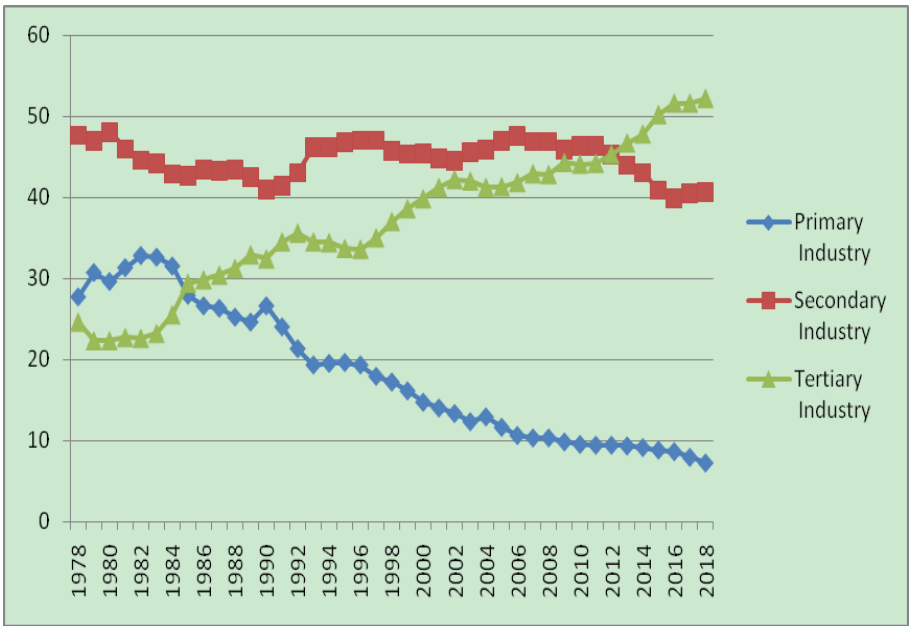

Figure1. Composition of Gross Domestic Product(%)

Notes: Data was collected from the National Bureau of Statistics of People's Republic of China. Data in this Figure was calculated at current prices.

Meanwhile, a report issued by the World Intellectual Property Organization showed that China's position in the global value chain of manufacturing industry had been improved, which was reflected in the steady growth of high value-added manufactured goods and modern services. Chinese enterprises are gradually becoming the high-tech and high value-added upstream producers (World

ISSN 2616-5902 Vol. 1, Issue 1: 113-119, DOI: 10.25236/AJBM.190114

Intellectual Property Organization, 2017). In view of the growing dependence of manufacturing enterprises on the producer services, together with more obvious characteristics and trends of spatial agglomeration between producer services and manufacturing industries, this paper intends to study whether the collaborative agglomeration of producer services and manufacturing industries will have an impact on the upgrading of manufacturing's global value chain. If so, how does this impact mechanism work and function? Moreover, to optimize the spatial distribution of producer services and manufacturing industries in China, what measures can be taken? This paper will solve the above theoretical and practical problems through the following parts of literature review and analysis of theoretical mechanism.

2. Literature Review

There are abundant studies discussed the impact of agglomeration of producer services on the development of manufacturing enterprises. It is believed that producer services are dependent on the manufacturing enterprises to maintain continuity of industrial production processes, promote industrial technological progress, and finally improve production efficiency. Actually, producer services can effectively connect the upstream, midstream and downstream of the production links or industrial value chains, and introduce increasingly specialized human capital and knowledge capital as the main inputs into manufacturing industry. These are the key links for accelerating the integration of secondary and tertiary industries and ultimately promoting the upgrading of manufacturing industry (Carman, 1980; Coffey, 1992; Hertog, et al., 2000; Araujo et al., 2006; Low, 2013).

It should be noted that the previous studies focused more on the knowledge-intensive characteristics of producer services, and the impact of the agglomeration scale of producer services on the manufacturing enterprises from the perspective of inter-industry or intra-industry interaction. However, from the perspective of rationality of industrial synergistic agglomeration, there are still lack of adequate research literature explaining the mechanism of synergistic agglomeration of producer services and manufacturing industries to upgrade the manufacturing's global value chain. Therefore, this paper will focus on the impact mechanism of synergistic agglomeration of producer services and manufacturing industry on the upgrading of global value chain, and offer a proposal to optimize the industrial spatial layout and resource allocation efficiency in the light of related bottleneck constraints (Moulaert et al., 1993; Parasuraman et al., 2002; Yuan et al., 2017).

3. Analysis of the Impact Mechanism

According to the production process and labor division of commodity production, the global value chain can be decomposed into different value-added creation links. Various countries or regions integrate into the global value chain by their comparative advantages and engage in the corresponding production activities and value-added creation links. From the labor division of global value chain, the production, processing and assembly links at the bottom of global value chain show obvious dependence on the scale of resources input. However, the activities of R&D design and brand marketing show obvious human capital-intensive characteristics. Because the main profit space and development prospects are mainly concentrated in the two ends of global value chain rather than at the bottom, in order to upgrade the global value chain, a country itself must have strong producer services capacity and high-quality human resources, so as to achieve the absorption and development of advanced technology and information elements. The quality and quantity of resource endowment and production factors, as well as their allocation efficiency and utilization efficiency, together determine the division of labor of manufacturing enterprises in the global value chain. And, the allocation and utilization efficiency of input factors are ultimately determined by the allocation and use efficiency of producer services. As the traditional inputs of resource elements are difficult to increase sustainably, the role of producer services in promoting the upgrading of global value chain will become increasingly prominent (Kolko et al., 2007; Wernerheim et al., 2010; Ke et al., 2014).

Since the reform and opening-up policy, China has rapidly integrated into global value chain with adequate inputs of production factors at the initial stage. China's embedding into the global value chain mainly takes two forms. First, domestic enterprises take the initiative to undertake the outsourcing business of transnational corporations and produce, process and re-export as required. Second, transnational corporations' adopt the form of vertical direct investment, that is, through sole proprietorship and joint venture, transnational corporations directly establish factories in China and specialize in global value chain of production or service activities. Due to the lack of core technology and brand, China was previously locked in links of manufacturing, processing and assembly of global value chains. Low-end lock-in of global value chains not only means low returns, but also faces fierce international competition. Under the circumstances of accelerating the transformation from manufacturing economy to service economy in China, it is an inevitable choice for China to get rid of industrial predicament to accelerate the cultivation and utilization of the emerging industrial advantage of producer services in China, to absorb external knowledge and technology, and ultimately to promote the dynamics of global value chain (Jacobs et al., 2013; Li et al., 2019).

4. Conclusion and Policy Implications

Producer service has played an important role in the high-quality development of manufacturing enterprise mainly through the reduction of production and transaction costs and the enhancement of knowledge spillover effects. This paper shows that the service economy transition has gradually become a general trend of China's economic development. The collaborative agglomeration of producer services and manufacturing industry has changed the extensive growth pattern which was scattered, disordered and separate. It is beneficial to provide technology-intensive and human capital-intensive producer services for manufacturing production and management links, marketing and brand activities by gathering more elements of innovation of high-level talents and financial capital. Thus, the global value chain of China's manufacturing industry can be improved sustainably.

As fast-growing, knowledge-intensive and high-level talent employment industry in global economy, producer services are powerful engines to promote the production and management efficiency, and also strategic commanding points in global value chain that most countries are competing for. In order to promote the collaborative agglomeration of producer services and manufacturing industry, enhance incentives for manufacturing enterprises to use producer services, and promote the upgrading of global value chain, this paper proposes the following policy implications.

First, promote the synergistic agglomeration of producer services and manufacturing industries. With the market demand and value-added of stakeholders of industrial value chain increasing, the proportion of producer services in links of input and output of manufacturing industries has been increased continuously through optimization, upgrading and collaborative innovation of production organization form, operation and management mode and business development mode, so as to achieve more diversified producer services of industrial design, modern logistics, e-commerce and so on. The rapid development of producer services promote transformation of manufacturing industry from merely goods to combination of goods and services. In other words, manufacturing enterprises are encouraged to change from simply selling products to selling the mix of "products and services", so as to expand the value-added space or profit margins of products. By improving service capabilities, providing customers with more value-added producer services or a package of overall solutions, the proportion of producer service revenue in total revenue of manufacturing enterprises can be increased.

Second, promote the collaborative innovation and agglomeration benefits of producer services and manufacturing industry by the fostering of new drivers of "Internet Plus". Apply information and communication technology to develop customized services, enhance personality design and flexible manufacturing capabilities, and form a new mode of design, manufacturing and service with dynamic perception of consumer demand. It includes that focusing on the key links in industrial chains, strengthening basic technology tackling, advanced layout and

cutting-edge technology research and development, and perfecting enterprise-oriented technology research and development. Enterprises, governments, industries, universities and research funds together constitute an well-functioning innovation system. Key software products and brilliant solutions in emerging areas such as big data, cloud computing, artificial intelligence, mobile internet, Internet of things, industrial internet, and vehicle internet are crucial to accelerate the cultivation of new formats and models. In addition, it is essential to accelerate the integration of software and other industries, strengthen the application innovation and business model innovation, implement the cultivation project of industrial Internet APP, upgrade the level of service-oriented manufacturing, and promote the application innovation and integration development.

Third, optimize the industrial platform and policy support system for the synergistic agglomeration of producer services and manufacturing industries. By encouraging the development of platform-based projects such as industrial design, industrial e-commerce, supply chain management and industrial internet, it will create a new engine for the collaborative agglomeration of producer services and manufacturing enterprises. Meanwhile, starting with the planning of industrial parks, it is suggested to strengthen the construction of manufacturing and service functional areas, and promote the agglomeration of design industry, information technology industry and testing service industry. In addition, to strengthen the cross-regional industrial synergistic agglomeration and to improve the spatial allocation efficiency of industrial integration, governments need to plan ahead and actively guide the agglomeration of producer services and manufacturing enterprises through a combination of supporting policies such as fiscal and taxation policy incentives and transregional benefit distribution mechanism. Only by taking multiple measures together can we create a good social environment for stimulating the positive effect of industrial coordination layout on the industrial transformation and upgrading.

Acknowledgements

The authors gratefully acknowledge support from research projects No.71803033 from the National Natural Science Foundation of China, No.18YJC790101 from the Ministry of Education of China, No.2018A070712034 from the Science and Technology Planning Project of Guangdong Province of China,No.2018GZQN10 and No.2018GZQN25 from the 2018 "Thirteenth Five-Year Plan" of Philosophy and Social Science Development in Guangzhou of Guangdong Province of China, and No.Z201907 and No.Z201945 from the Project of Independent Participation in Financial Research in Guangdong Province of China.

References

[1] Araujo L, Spring M. Services, products, and the institutional structure of production. Industrial Marketing Management, 2006, 35(7): 797-805.

[2] Carman J M, Langeard E. Growth strategies for service firms[J]. Strategic Management Journal, 1980, 1(1): 7-22.
[3] Coffey W J, Bailly A S. Producer services and systems of flexible production. Urban Studies, 1992, 29(6): 857-868.
[4] Drucker J. Industrial structure and the sources of agglomeration economies: evidence from manufacturing plant production. Growth and Change, 2013, 44(1): 54-91.
[5] Hertog P D. Knowledge-intensive business services as co-producers of innovation. International Journal of Innovation Management, 2000, 4(04): 491-528.
[6] Jacobs W, Koster H R A, van Oort F. Co-agglomeration of knowledge-intensive business services and multinational enterprises. Journal of Economic Geography, 2013, 14(2): 443-475.
[7] Ke S, He M, Yuan C. Synergy and co-agglomeration of producer services and manufacturing: a panel data analysis of Chinese cities. Regional Studies, 2014, 48(11): 1829-1841.
[8] Kolko J. Agglomeration and co-agglomeration of services industries. Available at SSRN 985711, 2007.
[9] Li T, Han D, Feng S, et al. Can industrial co-agglomeration between producer services and manufacturing reduce carbon intensity in China? Sustainability, 2019, 11(15): 4024.
[10]Liu S, Tao F, Zhang H. Term limits of public officials, environmental regulations, and sustainable development: an analysis based on empirical spatial econometrics. Emerging Markets Finance and Trade, 2017, 53(9): 2141-2155.
[11]Low P. The role of services in global value chains. Global Value Chains in a Changing World, 2013: 61-81.
[12]Moulaert F, Gallouj C. The locational geography of advanced producer service firms: the limits of economies of agglomeration. The Service Industries Journal, 1993, 13(2): 91-106.
[13]Parasuraman A. Service quality and productivity: a synergistic perspective[J]. Managing Service Quality: An International Journal, 2002, 12(1): 6-9.
[14]The National Bureau of Statistics of China, Statistical Communique of the People's Republic of China on National Economic and Social Development in 2018, Beijing, 2019.
[15]Wernerheim C M. The tendency of advanced services to co-locate and the implications for regional government policy. The Service Industries Journal, 2010, 30(5): 731-748.
[16]World Intellectual Property Organization, World Intellectual Property Report 2017-Intangible Capital in Global Value Chains, 2017.
[17]Yuan F, Gao J, Wang L, et al. Co-location of manufacturing and producer services in Nanjing, China. Cities, 2017, 63: 81-91.