

Research on the Formation, Breakthrough and Countermeasures of the Captive Governance Mode of China's Sporting Goods Original Equipment Manufacturer (OEM) Companies

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Abstract

The integration of China's sporting goods industry into the global value chain (GVC) has brought opportunities for the development of the industry. However, the both-ends-abroad OEM production mode is "locked" in the low value-added processing and production link in the GVC, which is located at the lowest end of the GVC. When international financial crisis breaks out, the orders of domestic OEM companies decrease significantly, which directly affects the development of the companies. Thus, it indicates that China's sporting goods OEM companies should not rely too much on international processing and export trade, but to rely on the local market to build a national value chain (NVC), integrate domestic and foreign sellers and suppliers and form an orderly product competition and certain market share ability through corporate mergers and acquisitions, product outsourcing, etc. Through the leverage of NVC, leading companies can achieve the expansion of the competitive advantages. Cultivate domestic multinational companies that can compete with international multinational companies in NVC, so that they can focus on the governance and control of the core links of the value chain, realize independent product research and development, brand and sales channel construction, support and help small and medium-sized domestic enterprises take the path of professional development in NVC, actively guide and encourage cooperation with the core to create value chain advantages, and achieve win-win cooperation and products' functional upgrade.

Keywords: Global value chain (GVC), original equipment manufacturer (OEM) System, captive network, national value chain (NVC)

I. Introduction

In the 1990s, relying on low-cost advantages, China's sporting goods companies entered into the global value chain (GVC) system with original equipment manufacture (OEM), and achieved significant development. However, this development path applies only to the low-end development process. When companies need to move to the high-end of the value chain after decades of development, they will appear to be "captured". That is to say, during the process of climbing from low value-added to high value-added, especially when upgrading functions or chains, China's sporting goods companies will be blocked and controlled by value chain governors who tries to restrict China's companies to the low-end production links of the low-value-added value chain. For this reason, studying the formation and transformation of the captive network of China's sporting goods industry under the background of GVC is a major issue facing today's society.

II. The Analytical Framework of GVC Theory

GVC analysis developed tremendously in the 1990s and constructed a framework involving global economic analysis. For example, it had a high insight into the research on industrial transfer and upgrading, market expansion, trade mode or technological transformation, etc. Of course, as far as the GVC theory is concerned, it includes theories such as the driving mechanism of the value chain, the governance mode, and the process of upgrading.

III. China's Sporting Goods Manufacturing Industry Actively Integrating into the GVC System to Form a Captured Governance Mode

With the formation of the GVC division system of sporting goods, China's coastal provinces, such as Zhejiang, Fujian, Guangdong and other coastal areas, have taken advantage of their locations and human resources to actively undertake international industrial transfers and attract direct investment from international multinational companies, make the export processing trade of sporting goods grow rapidly through the implementation of production outsourcing, and integrate into GVC division system quickly. This integration process can be reflected by the intra-industry trade index, the share of China's export products in the international market, and the revealed comparative advantage index. As sporting goods are mainly based on shoes and hats, we will use the textile intra-industry trade (IIT) value to illustrate their extents of division.

3.1 fluctuation of the intra-industry trade (IIT) index

The intra-industry trade (IIT) index mainly reflects the extent of commercial intercourse of intra-industry. When $IIT=0$, it means that there is no intra-industry trade between the two countries; when $IIT>0$, it means that there is intra-industry trade between the two countries; the larger the IIT value, the higher the extent of commercial intercourse of intra-industry; and the maximum value of IIT is 1. From Table 1, we find that IIT is showing an upward trend year by year. By 2018, the IIT index for ASEAN, Japan, and South Korea has reach 0.98, 0.88, and 0.78, which are between 0.75 and 1.00, indicating that the extent of division of intra-industry between China and those countries is relatively high; while the IIT index for the United States and the European Union are 0.65 and 0.63, which are between 0.50 and 0.75, the extent of division of intra-industry between China and them is relatively low.

Table 1 The IIT of china's textile manufacturing industry to major trading partners

IIT	All	ASEAN	South Korea	USA	European Union	Japan
2014	0.91	0.84	0.57	0.57	0.79	0.84
2015	0.86	0.87	0.57	0.57	0.57	0.88
2016	0.82	0.90	0.62	0.62	0.66	0.86
2017	0.88	0.93	0.70	0.63	0.62	0.86
2018	0.88	0.98	0.78	0.65	0.63	0.88

Data source: Transnational industrial transfer and industrial structure upgrade: Based on analysis of GVC, calculated according to WTO.

3.2 The Share of the international market that china's export volume of sporting goods accounting for

In recent years, China's sporting goods manufacturing industry has developed rapidly, which not only guarantees the needs of the development of sports, but also exports a large number of sports products. According to statistics from the World Sporting Goods Federation: 65% of the world's sporting goods are MADE IN CHINA, and China is a veritable world sporting goods manufacturing country with its export exchange rate increasing year by year. As of 2019, China's sporting goods exports ranked fifth in the world, accounting for 3.5% of the world's total sporting goods exports [4]. For example, Shanghai "DHS", Guangzhou "Double Fish" table tennis products, Tianjin's "Chunhe" gymnastics equipment, Zhangjiagang's basketball hoop and other sports equipment, some of them have been used in international competitions such as the Asian Games, and some have been certified by the International Individual Association.

3.3 Changes of revealed comparative Advantage (RCA) index

The RCA index mainly reflects the competitiveness of a certain product of a country in the world's export trade. If $RCA>2.5$, it means the product has super competitiveness; if RCA is between 1.25-2.5, it has super competitiveness; if RCA is between 0.8-1.25, it has general competitiveness; if RCA is below 0.8, the competitiveness is weak. The RCA index of China's textile manufacturing industry was less than 1.25 before the

end of 2012. From 2013 to 2018, it showed an upward trend and was always higher than 1.25, indicating that it has strong competitiveness [5]. The RCA index of India is fluctuating around 1.00, and the RCA index of Brazil is always below 1.00, indicating that the export competitiveness of the textile products of the two countries is not as good as that of China. Starting in 2015, China's RCA index is higher than that of Japan, the United States, and South Korea, indicating that the overall level of China's textile manufacturing industry is higher than that of developed countries.

3.4 Embedding GVC to form a captured governance mode

There are two prerequisites for domestic OEMs and international purchasers to establish a captive governance relationship. One is international purchasers' grasp of the global consumer market's terminal channels and core technologies in the value chain; the other is the low-production-cost manufacturing capacity determined by domestic low-level factor endowments. Because domestic sporting goods companies integrate into GVC actively, they must follow the basic rules of the GVC, obey the leadership and requirements of value chain leaders, and strictly implement the requirements of leading companies on product quality, production specifications, delivery time and location. The relationship between them is completely unequal. As the production export markets of China's sporting goods companies are mainly Europe and the United States, Nike and Adidas are the undisputed governors and leaders in the sporting goods value chain. It is a typical captive governance relationship between the two.

3.5 Reasons for domestic OEM companies to get into captive governance mode

(1) China's sporting goods OEM enterprises are small in scale and large in number. Due to the large number and small scale of OEM enterprises, they cannot form scale benefits. At the same time, without financial support in terms of technological transformation and product innovation, they can only rely on the technological spillovers and auxiliary technology support of international multinational companies, strictly abide by the requirements of product processing, and win the favor of international buyers for products, to obtain more processing orders and earn meager processing profits.

(2) The entire society lacks a credit system. Because of the poor domestic credit system, delayed payment appears frequently when products are sold in China. Coupled with the difficulties of enterprise financing, it is easy to cause enterprise financial straits, affecting their normal operation. However, if these OEM enterprises choose foreign processing trade, there will be no such problems. Although the profit of the product is lower than that in domestic country, but the after-sale payment is guaranteed and thus the enterprise can operate normally. Therefore, many OEM enterprises prefer lower profits so that they are willing to make foreign processing trade and choose the captured governance mode [6].

(3) China has a vast land, abundant resources, a large population, a surplus of labor and low factor costs. After the reform and opening up, China's southeast coastal areas relied on the advantages of low factor costs to embed sporting goods GVC as OEM processors. Although the product profits are meager, it solved the employment problem and enterprises achieved the original capital accumulation.

IV. The Upgrading Mode and "Ceiling" Effect of China's Sporting Goods OEM enterprises under GVC Conditions

International multinational companies such as Nike and Adidas are the key linkers between domestic OEM companies and GVC, and the two has a typical captive governance relationship. However, the saying that domestic OEM companies do not have any upgrade space is not true. On the contrary, there is a large upgrade space in the technology upgrade and product upgrade stage, but there is a "ceiling" effect when entering the function upgrade and chain upgrade stage.

4.1 Reasons of the large upgrade space existing in the technology upgrade and product upgrade stage

(1) The acquisition of production cost competitive advantage is the core competitive advantage of domestic OEM companies. In order to obtain orders or the favor of large international purchasers, domestic OEM companies mainly adopt the means of developing low-cost manufacturing abilities. Through the introduction of production equipment, the production technology is improved to meet the requirements of international multinational companies for products. Because these behaviors are consistent with the interests of international purchasers, domestic OEM companies will obtain guidance on production technology and transfer of auxiliary technology to promote product technology and product upgrades.

(2) Meet the environmental and safety requirements of international consumers towards products. In order to meet the requirements of international consumers for product environmental protection and safety, domestic OEM companies have to upgrade product technology, improve product grades and performance, and meet the nearly demanding quality requirements of international consumers.

(3) Requirements for product differentiation. In order to adapt to the diversified consumption needs in the global market, international purchasers must require domestic OEM companies to pursue product differentiation and continue product innovation and technology upgrades. As a result, domestic OEM companies must continue to improve flexible production capacity, timely delivery capacity and large-scale production capacity to achieve technology upgrades in a low-cost competitive environment.

4.2 The predicament of domestic OEM companies in the function and chain upgrade stage

China's sporting goods OEM companies successfully upgraded their products and technology at the initial stage when they embedded in the GVC. However, when they entered their core technology research and development capabilities, brand and sales terminal stages, they harmed the vested interests of major international purchasers. Major international purchasers will use every possible means to hinder and restrict the upgrading process of domestic OEM companies in an attempt to lock domestic OEM companies in the low-end processing and producing links of GVC. The following three methods are usually used:

(1) GVC governors use their accumulated advantages to firmly occupy the non-productive, high-value-added links in GVC, such as product research and development, product branding and sales channels, etc. to continuously strengthen its buyers' monopoly position. For example, they adopt strategies that strengthen the protection of intellectual property [7] to control the technical imitation of domestic OEMs and inhibit the formation of independent innovation of domestic OEMs.

(2) Restrict the profits of OEM companies so that they do not have more fund accumulation for product research and development, brand building, etc. GVC governors take advantage of the substitutability among domestic companies to create competition among OEMs. At the same time, it uses the special production investment lock-in feature formed by OEM to continue to lower the purchase price which reduces the profit margin of domestic OEMs.

(3) Increase product import trade barriers and force domestic OEMs to continuously upgrade their products. GVC governors keep increasing import trade barriers, forcing domestic OEM companies to continuously "eliminate" equipment and introduce more advanced equipments. These methods can not only restrain the innovation ability of domestic OEM companies, but also force them to stay in an investment period when fixed assets renews dynamically, so that the profits of domestic OEM companies will return to the governors of GVC in the form of purchasing fixed assets. Its purpose is to keep controlling domestic OEM companies on the cycle path of OEM-meager profit-lack of independent innovation capabilities.

V. Building a NVC to Break Through the Captured Governance Relationship

If China is to transform from a big sporting goods manufacturing country to a powerful country, it must break through the "captured" GVC and rebuild a domestic-based NVC. That is to say, it needs to change from the original external-dependent relationship to a self-centered control relationship, from a low-end position to a high-end position, from a worker status to a boss status, and from an undertaking relationship in the GVC to a contracting relationship. Certainly, the reconstruction of NVC based on domestic demand is not to abandon the original international market share, but to transform from the undertaking relationship relying on GVC to the coordinated development path to both the domestic and foreign markets. The wealth and production experience accumulated by enterprises through GVC are applied to the domestic market. At the same time, they build brands and product terminal sales channels, gradually perform functional upgrades in their familiar local markets, and then gradually occupy developing countries with similar needs through outward diffusion to build a leading value chain system centered on China. Finally, they will enter the GVC division system and the European and American markets, build a balanced GVC parallel to international giants such as Adidas, Nike, and achieve their own leading value chain division system and become the leader and dominator of NVC [8].

5.1 The inherent basic advantages and prerequisites for the NVC construction in china's sporting goods industry

China is a large developing country with great advantages as a big country, such as a large population and huge potential for domestic demand. The unbalanced development between the east and the west leads to the establishment of the relationship of labor division and cooperation within the regional industry. From the perspective of the development of the sporting goods industry, conditions for building the NVC industrial foundation are already. Enterprises in the southeast coastal area have strong competitiveness in product research, development, brand building, and sales channel construction, and can take on the important tasks of NVC leaders.

(1) The advantage as a big country is the realistic basis for constructing NVC for sporting goods. China is a large developing country with a large population, a huge sports group, tremendous consumption potential and broad consumption prospects. Meanwhile, the huge demand market for sporting goods is good for the use of scale economy, providing a huge space for the professional production and division evolution, and laying a realistic foundation for the NVC construction of sporting goods industry.

(2) The huge difference and coordinated development of the eastern and western regions are the prerequisites for the sporting goods industry to construct NVC.

China's southeastern coastal areas have developed rapidly by virtue of their location advantages. Compared with the central and western regions, differences exist in capital accumulation, technology level, labor cost, and land cost, which provide prerequisites for the formation and development of labor division and coordination as well as domestic sporting goods industry NVC construction [9]. Because the labor division in the value chain objectively requires differences in factor costs, that is, the processing and production links have higher requirements for low-factor costs such as labor and raw materials; product research, development, branding, and marketing have higher requirements for high-level factors, while the huge difference and multi-level nature of production factors in the eastern and western regions in China totally meet the distribution of different needs in each link of the value chain, so that the comparative advantages of each region can be maximized, and the use of resources can be optimized.

(3) There are already a number of listed sporting goods companies in the eastern coastal areas of China that can take on the leadership of domestic NVC. After more than 20 years of accumulation and development, China's eastern coastal areas have embedded GVC in the form of OEM. The product processing, management, product design and brand awareness is higher than that of the central and western regions. There are already a number of listed companies: Li Ning, Anta, 361, Hongxing Erke, Peak, Guirenniao, etc. They all have a high position in China in terms of product research, development, brand building, marketing, etc., have the ability to act as the

leading core enterprise in domestic NVC, have begun to govern domestic NVC, and have the ability to compete with international first-line brands such as Nike and Adidas in some aspects.

(4) Multi-level consumption provides endogenous space for domestic NVC companies. China has a vast territory and a large population, presenting a multi-level consumer demanding structure, forming a mix of higher, medium and lower levels, which is essential for cultivating the core competitiveness of the NVC, getting rid of the asymmetric competition directly facing foreign value chain managers in the early development stage, and developing the high-level elements of products.

5.2 Disadvantages of china's sporting goods industry in constructing NVC

(1) Premature and excessive opening of the domestic market is likely to be squeezed out by powerful foreign opponents. Due to the relatively high extent of market opening in China, a large number of multinational companies and foreign direct investment (FDI) have entered China market and seized the high-end links of the product value chain, which will desperately strangle the development space of domestic NVC leading enterprises, and cut off the path of NVC Chinese enterprises' transforming from a captive governance relationship to a balanced governance relationship.

(2) The small scale and large number of enterprises are likely to cause the product homogeneity effect. At this stage, most of China's sporting goods companies are small-scale enterprises, with serious product homogeneity. The high concentration of geographical location and the high flow of talents and tacit knowledge bring spillover effect of corporate competitive advantages and induces low-cost and excessive competition among homogeneous enterprises.

(3) The consumer group of domestic high-end products is small, which cannot effectively drive China's NVC enterprises to functional upgrades. As domestic consumers are less picky than those in the international market, which means the pressure for enterprise upgrading is not enough. If the policy blindly restricts the entry of foreign enterprises, it will evolve into an umbrella to protect backward enterprises and strangle enterprise competitiveness [10]. Therefore, an appropriate policy is the key to effectively protect the domestic market and transform China's sporting OEM companies from a captive type to a balanced type under GVC conditions.

VI. Suggestions and Countermeasures

6.1 Suggestions

(1) China and the government should actively guide and improve the leading capabilities of domestic NVC core enterprises and the governance capabilities in the domestic value chain, promote resources concentration to domestic high-quality sporting goods enterprises through policy guidance, financial support and other methods, vigorously develop product research, development, channel construction and independent brand building capabilities, improve their local NVC governance capabilities, actively guide domestic NVC-related small and medium-sized enterprises to take a professional development path, and cooperate with leading enterprises to jointly create value chain advantages to achieve a win-win situation for upstream and downstream enterprises in the value chain.

(2) Actively cultivate the high-level elements of the enterprise, starting from the high-end of the value chain. As China's consumption structure is changing from a "dumbbell type" to an "olive type", a reasonable mix of higher, middle and lower levels is formed, which provides a broad endogenous space for the cultivation of sporting goods companies' research and development capabilities, marketing channels and brand building. Therefore, sporting goods OEM companies should promptly change to export-oriented strategy, actively explore endogenous markets, design well-known local brands that conform to national conditions, increase their bargaining chips with international purchasers, and start from the high-end of the value chain to realize the transformation from a captive

governance mode to a balanced governance mode.

(3) Aim at emerging market countries such as Latin America, Russia and ASEAN to realize functional upgrades. As purchasers in emerging market countries are relatively scattered, the demand level of market consumer groups is relatively well connected with domestic suppliers, and the pressure for product upgrades is relatively small. For this reason, China's sporting goods companies should seize the opportunity to carry out sales channels and brand building to achieve product functional upgrades for that market.

(4) Occupy the high-end links of the value chain and achieve product functional upgrades through product outsourcing. After more than 20 years of development, there are already a number of high-end domestic sporting goods companies in China, which have gained a high reputation in the country in terms of product research, development, brand and sales channel construction. However, with the substantial increase in factor costs, it is necessary to outsource the processing and production links, and focus on product research and development, brand and channel building, and enter GVC high-end links to achieve product functional upgrades.

6.2 Countermeasures

(1) Governments and departments at all levels should formulate various preferential policies to vigorously support the construction of domestic NVCs for local enterprises. National industrial departments and local governments should encourage and support technological innovation, product research and development, brand building and product sales channels expansion of NVC key aspects in terms of taxation, loans, and technological research and development, promote market demand through innovation, and build its own monopoly power in technology and income distribution of value chain.

(2) Actively guide enterprises to transform into a monopolistic competitive NVC structure. Due to the small scale, large number and similar positioning of sporting goods OEM companies in China, the market is not very competitive. Therefore, the government and various local departments must actively cultivate leading enterprises with monopolistic power in NVC, implement self-owned brands and go global strategies, and gradually establish their own product sales channels from developing countries to developed countries.

(3) China's sporting goods companies should take the road from NVC to GVC. For those NVC leading companies that rely on the domestic market and win the final competition, they generally have the dominance of industrial development and market control ability, and they have the basis for participating in competition in the global market. If they are not tempered by the domestic market but entering the international market early, they may become toys on the palm of the major international purchasers. Thus, only leading companies that have experienced NVC in the domestic market can they be possible to form a balanced value chain labor division system that shares the benefits and equals strengths of major international purchasers under the GVC background.

(4) The construction of domestic NVC can produce not only a demonstration effect on core enterprises outside the value chain, but also technology spillover and diffusion effects on non-core enterprises or upstream and downstream cooperative enterprises in the value chain. In addition, the core leading enterprises of NVC form a circular mechanism of product technological innovation input and income compensation by controlling the high-end links in the value chain, realize the transfer and diffusion of technological achievements in the value chain, improve the overall technical level of the industry, and make NVC related enterprises realize a virtuous circle of innovation-transfer-re-innovation.

VII. Conclusion

In summary, with the popularization of GVC production methods and the deepening of the international labor division, China's sporting goods industry quickly embeds the GVC production system with its low-cost advantages, becomes a member of the GVC, obtains GVC leaders' support and assistance in funding and technology, and has

achieved rapid development. However, long-term embedded GVC led by large international purchasers as participants can easily cause problems of greater dependence on the outside market and insufficient innovation capabilities. When international financial crisis breaks out, domestic OEM companies at the low end of the value chain suffer a decline in orders or even bankrupt, indicating that China's OEM companies should not rely too much on international processing and export trade, but to build a NVC relying on domestic market, integrate domestic and foreign sellers and suppliers through corporate mergers, acquisitions and product outsourcing, and form an orderly product competition and certain market share ability. Through the leverage of NVC to achieve the expansion of the competitive advantages of leading enterprises, cultivate domestic multinational companies that can compete with international multinational companies in NVC, so that they can focus on the governance and control of the core links of the value chain, and realize the independent product research, development, brand and sales channel construction, support and help domestic NVC small and medium-sized enterprises to take the path of professional development, actively guide and encourage cooperation with the core to create value chain advantages, and realize the win-win situation of cooperative enterprises and the product functional upgrades.

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