A Study on China's Position in the Global Value Chain

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Abstract. This study explores the changes in China's position in the global value chain and its key influencing factors. Through a literature review, this paper divides China's evolution in the global value chain into two stages: the early development stage in the early days of reform and opening and the key turning point stage marked by joining the World Trade Organization (WTO) in 2001. The study points out that foreign direct investment and international relations are key variables in shaping China's position in the global value chain. Foreign direct investment (FDI) has significantly promoted upgrading China's position in the global value chain through technology transfer and industrial structure optimization. Although the US-China trade war has brought short-term challenges, it has also provided opportunities for China's industrial upgrading and market expansion. This paper aims to provide a theoretical basis for understanding the changes in China's position in the global value chain and provide insights and strategic suggestions for future policy-making.

Keywords: Global value chain, China, Foreign direct investment, US-China trade war.

1. Introduction

In recent decades, globalization has become the core force driving global economic integration. Globalization is a dynamic process of close interconnection and flow covering multiple fields such as economy, politics, and culture. Since the 1980s, the rapid formation and expansion of interconnection and global consciousness around the world represents another great leap in the history of globalization [1].

Globalization has not only promoted the prosperity of international trade and reduced trade barriers, but also accelerated the cross-border flow of capital, technology and labor. According to Ying et al., globalization has a significant positive effect on economic growth [2]. Globalization has promoted the growth of international trade, reduced trade barriers, and enabled the free flow of capital, technology and labor around the world. In addition, globalization has simplified various business processes around the world, forming a single production system, and each process component adds value [3]. The globalization process enables business units to use global supply chain management systems to outsource different components from all over the world and assemble them to produce more valuable complete products [3]. Against this background, the global value chain came into being and became a core part and important driving factor in the globalization process. Therefore, studying the global value chain, especially China's position in the global value chain, has important academic significance and practical value. The literature on value chain research is constantly developing and numerous. Although much literature explored China's role in the global value chain, many of these studies have certain limitations. Some literatures tend to focus too much on the analysis of a single industry or region and fails to fully explore the overall dynamics of China's position changes in the global value chain. By integrating and summarizing the existing literature, this study first discusses the macro and micro methods of studying and measuring the global value chain (GVC), and then explores China's position in the global value chain and its evolution, focusing on the impact of key factors such as foreign direct investment (FDI) and international relations on this position.

2. Introduction to The Global Value Chain

With the deepening development of international economic integration and globalization of production, the division of labor between different regions has become more obvious, and the importance of the global value chain (GVC) has increased day by day [4]. The global value chain

involves various links such as product conception, design, production, and sales. Different countries participate in specific links based on their comparative advantages and together form a complete value creation chain. For example, in the production of mobile phones, countries such as the United States and Japan focus on core technology fields such as chips, while countries such as China focus on manufacturing and assembly. Through cross-border cooperation, the entire production activity of mobile phones can be completed efficiently. The global value chain closely links various entities such as supply, production, and sales, and is an important driving force for promoting economic development for both developed and developing countries. For developed countries, the global value chain provides them with a way to expand their international markets and enables them to occupy a leading position in the global economy by undertaking high-value-added R&D links in the value chain. For developing countries, the global value chain is often a steppingstone for them to participate in the global economy. By integrating into the global value chain, their economy and society will be fully developed.

Scholars have different research methods for global value chains. Existing literature mainly uses macro and micro methods for analysis. The macro method focuses on analyzing the overall situation of countries or industries in the global value chain, usually using national-level data and quantitative models. The micro method focuses on the value chain activities of enterprises or specific industries, such as studying specific enterprise cases and supply chain management. These two methods study the operation of global value chains and their impact on international economic trade at different levels. Antràs and others discussed the macro and micro methods of studying GVCs. On the macro level, they reviewed and critically evaluated the application of the world input-output table (WIOTs) dataset at the national level in measuring the relevance of GVCs to the global economy, and discussed the application, advantages, and limitations of several macroeconomic models such as the Caliendo-Parro model [5]. On the micro level, they discussed the advantages and disadvantages of an emerging alternative "micro method" that uses a company-level dataset to record how companies divide their value chains among countries [5].

Johnson also mentioned macro and micro methods for measuring GVCs in his article. On the macro level, he listed the input-output method that provides a macro view [6]. This method uses bilateral trade data between countries to construct a global input-output table [6]. He discussed its application and evaluated its advantages and disadvantages. On the micro level, he described methods for measuring GVC linkages using customs data and survey data and discussed the specific details of transactions between enterprises and how to better measure GVCs using data at the micro level [6]. In addition, he emphasized that the micro and macro levels are complementary and closely linked and these two methods need to be integrated to complete a more complete description [6].

In summary, both macro and micro approaches have their advantages. The macro approach provides a more comprehensive perspective and overall framework, while the micro approach can delve into specific corporate situations. In the process of studying and measuring GVCs, combining the two can better understand the formation of GVCs and their impact on global economic trade.

3. The Evolution of China’s Position in The Global Value Chain

3.1. Historical Evolution

Looking back over the past few decades, the evolution of China's position in the global value chain can be roughly divided into two stages. The first stage was the early development stage initiated by reform and opening, marking the gradual integration of China's economy into the global value chain. The second stage was marked by China's accession to the World Trade Organization (WTO) in 2001, which marked a key turning point and significantly changed its role and position in the global value chain.

3.1.1 Early development stage (1978-2000)

In 1978, Deng Xiaoping and others put forward the viewpoints and theories of "Reform internally, open up externally" and "Emancipate the mind, seek truth from facts". A series of economic reform

measures were officially implemented after the Third Plenary Session of the 11th Central Committee of the Communist Party of China on December 18, 1978. Li et al. mentioned in their article that after the reform and opening, relying on its abundant labor resources, land advantages, and institutional advantages, China effectively took over the global labor-intensive and resource-intensive industries, and thus rapidly integrated into the global value chain system [7]. According to Jiang's research, he mentioned the important role of reform and opening in China's integration into the GVC [8]. He believed that the reform and opening made by the Chinese government in the 1980s was a milestone decision that expanded economic relations with the outside world and China entered the global market [8]. Simultaneously, he also highlighted that China rapidly established itself as a key player in the global low-tech manufacturing sector, utilizing a low-cost labor force and initially exporting mainly primary and resource-based products [8]. After entering the mid-1990s, China's high-tech manufacturing exports began to grow rapidly, although the high-tech products at this stage were often only final assembly with low actual added value [8]. This still shows that China's role in the global value chain is shifting to a higher level of technology.

3.1.2 Key turning point（2001）

On December 11, 2001, China officially joined the WTO and became a member of the World Trade Organization. After joining the WTO, with the substantial growth of foreign trade, China's position in the global value chain has significantly improved and gradually become the center of the global value chain [9]. At present, many documents have discussed this change. Fan pointed out in his article that since joining the WTO in 2001, China's participation rate in GVCs has continued to rise, playing a more important role in GVCs, and its position in the world economy has been improved [10]. According to the research of Sun and Zhang, they statistically analyzed the changes in the embedded positions of China's four major industries (agriculture, mining, manufacturing, and services) in GVCs and found that after joining the WTO in 2001, China participated more and more deeply in the division of labor in the global value chain, and its position in the chain of the division of labor has also been greatly extended in comparison with the previous situation [11]. Joining the WTO not only provided a new impetus for China's economic development but also made its position in the global value chain more prominent.

3.2. Key Factors Affecting China's Changing Position in the GVCs

The change in China's position in the global value chain is the result of the combined influence of multiple factors. Through the induction and arrangement of relevant literature, it can be found that foreign direct investment and international relations play a very key role in this process.

3.2.1 Foreign direct investment

When studying China's position in GVCs, many scholars have explored the importance of foreign direct investment (FDI). FDI can be divided into IFDI and OFDI. IFDI is internal foreign direct investment, which refers to the investment of foreign enterprises in the host country market. OFDI is external foreign direct investment, which refers to the investment of host country enterprises in foreign markets. Both are forms of foreign direct investment.

First, FDI has an important positive effect on China's economy. In Azarhoushang's study, he emphasized the importance of FDI. He mentioned that FDI can have a positive impact on the manufacturing industry by promoting technology spillovers, creating new jobs, and improving productivity [12]. According to the research of Ren et al., OFDI is an important part of the "dual circulation" strategy, connecting the domestic and international markets [13]. It has a beneficial impact on the GVC position of general trade manufacturing by promoting reverse technology spillovers, upgrading industrial structure, and expanding export scale [13]. This has led to an improvement in the GVC position. According to the research of Zhang et al., IFDI not only brought a large amount of funds to China but also brought various advanced production equipment to China's manufacturing industry, filling the "double gap" that hindered development [14]. It also brought positive technology spillover effects and improved the productivity and management level of Chinese enterprises [14]. At the same time, OFDI brought marginal industrial transfer effects and reverse

technology spillover effects, promoted the optimal allocation of resources, and improved the technological level of the country's manufacturing industry [14]. IFDI and OFDI jointly promote the development of manufacturing, thereby enhancing China's position in the global value chain [14].

However, the impact of FDI is not always positive. The above literature also mentions the negative effects of FDI and some problems and risks it generates. Ren et al. pointed out in their study that because processing trade relies on imported intermediate products and has low technological content, OFDI inhibits the rise of the GVC position of the processing trade sector [13]. Zhang et al. pointed out in their study that in the process of FDI, the "low-end lock-in effect" caused by investment concentration in labor-intensive industries, the "crowding-out effect" caused by foreign-funded enterprises relying on their monopoly advantages, and the "functional industry hollowing effect" caused by large investments are all unfavorable to the upgrading of China's global value chain [14].

In summary, although FDI has brought many opportunities for China's economic development and has a positive impact on its position in the global value chain, its potential risks cannot be ignored. Consequently, if FDI is to play a positive role, it is often essential to improve the quality of FDI through good domestic policy guidance and maintain policy flexibility. This will allow FDI to promote the upgrading of China's industrial structure, strengthen its innovation and upgrading capabilities, and enable it to transcend the limitations of low-value-added industries to move continuously towards high-value-added industries, thereby occupying a higher position in the global value chain.

3.2.2 International relations

When discussing China's position in GVCs, international relations as core influencing factors have received extensive attention in many literatures. This article will focus on the major events of the US-China trade war to specifically analyze its impact on China's position in GVCs.

The US-China trade war is an important event in the global economy in recent years, which has profoundly affected China's position in the global value chain. Research shows that the US-China trade war has had a significant negative impact on China's positioning in the global value chain. According to Zhou's literature, by constructing a two-stage, multi-country, multi-sector general equilibrium model, he found that tariffs on the import of China's upstream intermediate products have a markedly detrimental effect on U.S. downstream industries that rely on China as a source of target intermediate inputs [15]. Wu et al. also mentioned in their study that during the US-China trade war, the U.S. implemented a particularly significant increase in tariff rates on Chinese intermediate goods, which directly led to an increase in overall trade costs [16]. The negative impact on the U.S. downstream industry will lead to a reduction in demand for intermediate goods exported from China, which will ultimately lead to a reduction in China’s exports of intermediate goods [16]. These studies show that the US-China trade war has greatly weakened China's position in the global value chain and restricted its role in the global value chain.

Despite the many challenges brought about by the US-China trade war, many scholars also believe that China's positioning in the global value chain has experienced a certain degree of positive impact. According to the research of Meng et al., China avoids direct trade barriers by exporting value-added products to the United States through complex GVC trade [17]. For example, China's metal parts are first exported to Vietnam and used to make frying pans as final products for export to the United States. This shift not only enables China to increase the added value of its products in the global value chain, but also prompts it to actively explore market opportunities in other regions, expand its market, and strengthen its global market competitiveness, thereby improving China's positioning in the GVC [17]. At the same time, they also mentioned in the article that China is dissatisfied with the limited value-added benefits it has obtained from the global value chain. For example, it only obtains less than 4% of the value chain of the iPhone [17]. This has become more obvious as the trade war progresses. China is eager to improve its position in the GVC [17]. To achieve this goal, it has begun to actively promote rapid industrial upgrading and innovation promotion strategies, and actively transform to high value-added technology and innovation fields [17]. At the same time, a similar view was put forward in the policy report of the University of International Business and Economics.

However, it was believed that it was due to the external pressure brought by the US technological blockade and trade barriers that forced my country to move towards the high value-added product industry at the front end of the value chain [18]. This put forward higher requirements on various capabilities, thus promoting technological innovation and industrial development and transformation [18].

Therefore, the US-China trade war has brought severe challenges to China's positioning in the global value chain, but it has also promoted and driven its transformation and upgrading, enabling China to take a more stable and further step in the global value chain.

4. Conclusion

Based on a summary of existing literature, this study summarizes two methods of studying global value chains, micro and macro, and analyzes their advantages and disadvantages. The study highlights that combining micro and macro approaches allows for a more comprehensive analysis of global value chains. At the same time, this article reveals the evolution of China in the global value chain, which has gone through two important stages of development. In the early development stage, it relied on labor and resource advantages, mainly participated in labor-intensive industries, and initially integrated into the global value chain. After joining the WTO, China has gradually shifted to high-value-added technology-intensive industries, significantly improving its position in the global value chain. In addition, this article also focuses on analyzing the key factors affecting China's position in GVC. In particular, the impact of key factors such as foreign direct investment (FDI) and international relations. FDI has brought positive effects such as technological progress and industrial structure upgrading, but it has also brought negative effects such as the "low-end lock-in effect". At the same time, although the US-China trade war has intensified the pressure on some Chinese industries in the short term through high tariffs and other measures, it has prompted China to seek diversified markets and strengthen innovative research and development, enhancing its flexibility in GVC. This study not only enriches literature in related fields but also provides practical insights and has important research and practical significance.

Future research can further study the comparison between China and other developing countries in the global value chain and explore the differences in the roles and positioning of different countries in the global economy. At the same time, with the continuous advancement of technology and changes in market demand, it is also possible to further explore the impact of factors such as the digital economy and artificial intelligence on the global value chain and provide new perspectives and insights for the development of the global value chain.

References

[1] Steger M B. Globalization: A Very Short Introduction (6th edn). Oxford Academic. 2023.

[2] Ying Y H, Chang K, Lee C H. The impact of globalization on economic growth. Romanian Journal of Economic Forecasting, 2014, 17 (2): 25-34.

[3] Chatterjee S, Chaudhuri R, Vrontis D, Dana L P, Kabbara D. Developing resilience of MNEs: From global value chain (GVC) capability and performance perspectives. Journal of Business Research, 2024, 172, 114447.

[4] Lee K, Szapiro M, Mao Z. From global value chains (GVC) to innovation systems for local value chains and knowledge creation. Eur J Dev Res, 2018, 30, 424–441.

[5] Antràs P, Chor D. Global value chains. Handbook of International Economics, 2022, 5, 297-376.

[6] Johnson R C. Measuring global value chains. Annual Review of Economics, 2018, 10 (1): 207-236.

[7] Li Y, Che L. Changes of economic globalization and China’s response in the post-epidemic era. Inner Mongolia Social Sciences, 2020, 41 (5): 113–121.

[8] Jiang C. China in global value chains: implications for industrial policy and development. Master's thesis, Duke University.

[9] Yu Y, Duan S. Global value chain embedding and environmental pollution: Evidence from 230 prefecture-level cities. Economic Review, 2022, (2): 87-103.

[10] Fan M.Q. Decomposition and international comparison of china's import and export trade: from the perspective of global value chain. Journal of Beijing University of Aeronautics and Astronautics Social Sciences Edition, 2016, 29 (3): 75-87.

[11] Sun B W, Zhang B W. Research on the embodied carbon of export trade from the perspective of global value chain. Journal of Yunnan University of Finance and Economics, 2023, (2), 79–95.

[12] Azarhoushang B. The Effect of FDI on China's Position in the Global Value Chain. Prieiga per Internetą, 2015, Retrieved from http://www. global-labouruniversity. org/fileadmin/GLU_conference_2015/papers/B. Azarhoushang. Pdf.

[13] Ren F, Le D, Hu Z. Outward foreign direct investment and gvc position of manufacturing industry: a perspective on china's general trade and processing trade structure. Plos one, 2023, 18 (12): e0295963.

[14] Zhang Q, Huang Y, Bhuiyan M A. The impact of Two-way FDI on the upgrading of global value chain of China's manufacturing industry. In E3S Web of Conferences, 2021, (251): 01077.

[15] Zhou Y. he US-China Trade War and Global Value Chains. 2020.

[16] Wu J, Wood J, Oh K, Jang H. Evaluating the cumulative impact of the US–China trade war along global value chains. The World Economy, 2021, 44 (12): 3516-3533.

[17] Bo M, Yuning G, Tao Z, Jiabai Y. The US-China relations and the impact of the US-China trade war: global value chains analyses. IDE Discussion Paper, 2022, 851.

[18] Center for Chinese Economic Research. The impact of the China-U.S. trade war on China's economy and participation in the global value chain: Suggestions for countermeasures. 2023.