

## GLOBAL VALUE CHAINS AND CHINA PERFORMANCE ON IT

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The value chain describes the transformation of a product from its idea to its end use, including all other activities, including R&D, design, production, marketing, distribution, and end user support. The activities that make up the value chain can be performed by the same company or by different companies. Obviously, in the context of globalization, value creation is likely to involve a network of interconnected companies located around the world.

Global value chains, encompassing the cross-border flows of goods, investments, services, innovations and people linked to international production networks, have significantly changed the world economy. Their emergence led to a gradual reconfiguration of world trade in terms of its participants and their comparative advantages. Therefore, in order to assess the degree of competitiveness of a country and the impact of its economic policy, it is now extremely important to take into account the cross-border aspects of production processes.

In the economic literature, different definitions have been adopted that describe the concept of GVCs. The common definition most commonly used, as documented in the Duke University Global Value Chain Initiative Project<sup>1</sup>, is that “Global Value Chain describes the full range of activities that take a product or service from concept to end use and how these activities are distributed across geographic space and across international borders.”

The literature on international trade explains this phenomenon using a wide range of terms, including "vertical specialization", "outsourcing", "offshoring", "internationalization of production", "international distribution of products", "disintegration of production", "multi-stage production"., “intra-product specialization”, “relocation of production”, “separation of the value chain” and “international segmentation of production”. One of the most used terms is "production fragmentation", which was coined by Jones and Kierzkowski<sup>2</sup>.

The application of the global value chain approach is based on six main principles, which can be divided into global factors (top down) and local factors (bottom up). The first set of principles relates to global factors determined by the global dynamics of the industry, while the second set should explain how countries participate in local elements of global value chains.

Global factors include:

<sup>1</sup> Edited by João Amador and Filippo di Mauro. The Age of Global Value Chains: Maps and Policy Issues. (2015). P

<sup>2</sup> Jones, Ronald W., and Henryk Kierzkowski. The role of services in production and international trade: A theoretical framework. World Scientific Book Chapters . -2018. -C.233-253.

- (1) input-output structures, which describe the process of turning raw materials into final products;
- (2) geographic range, showing how industries are distributed around the world and in which countries different activities take place within the global value chain;
- 3) a governance structure that explains how leading companies control the value chain.

Local factors include:

- (4) modernization, which describes the dynamic movement in the value chain in terms of how value added changes at different stages of the value chain;
- (5) the local institutional context, explaining that the production value chain is embedded in local economic and social factors;
- (6) industry stakeholders describing how various local stakeholders in the value chain interact to achieve industrial upgrading.

China's accession to the WTO in 2001 changed the configuration of the world economy, marking the beginning of a rapid growth in China's share of world trade and manufacturing. By 2020, China's share in world exports exceeded 14.9%, while in 2000 it did not even reach 4%. At the same time, the share

The United States in world exports in 2020 was 8.1%, and Germany - about 7.8%.

It should be noted that China's accession to the WTO entailed not only the strengthening of China's role in world trade and production, but also symbolized the beginning of China's accelerated integration into global value chains (GVCs). Initially, China was of interest to developed countries as a location with a relatively cheap labor force, but gradually its role in the GVC changed, and China became the largest exporter of final demand products in industry supply chains, primarily in automotive and electronics.

At present, China has "adopted" international technology standards in basic materials, electronic components, electronic products, chemicals, vehicle manufacturing, equipment manufacturing and other industries. At the same time, local manufacturers have the opportunity to independently produce more than 60% of technologies, and the trend towards the localization of the technological market is becoming more and more obvious. China's R&D spending has skyrocketed, and its technological innovation capabilities have steadily improved.

According to the 2019 World Intellectual Property Report<sup>18</sup>, the number of patent applications received in China increased from 828,000 in 2008 to 4.323 million in 2018, more than quadrupling. Together, it should be noted that many technologies are being developed in Europe and the USA, in particular in the field of semiconductors and optical equipment.

The experience of countries around the world shows that if a country wants to move up the technological chain, it must have four basic elements in place:

- 1) to carry out a large-scale investment of financial resources;
- 2) have access to technology and knowledge;
- 3) enter large-scale markets (internal and external);
- 4) to introduce an effective system that encourages competition and innovation.

China has great advantages in the first and third factors (namely, the scale of investment and the market). Not only can China provide abundant financial resources for scientific research, but it also has enough market space to promote technology commercialization. Thus, the key to China's advancement in the technological chain is the second and fourth elements, namely, the active development and acquisition of core knowledge and technology, as well as the establishment of an effective competition promotion system. This will ensure that China's value chain ecosystem is competitive enough to promote innovation.

Along with the undoubted benefits, China's participation in the GVC also entails serious economic risks, which include, in particular, the possible negative consequences of the restructuring of the existing fragmented production under the influence of protectionist measures, as well as external threats, including the Covid-19 pandemic.

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