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Modern Trends in Specialization of Regional Industrial Production in Foreign Operations

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Abstract: The article analyzes the modern trends of regional industrial production specialization in the experience of foreign countries. Development processes through "smart specialization" strategy in the European Union, cluster models in the USA, high-tech directions based on state policy in South Korea and Japan, free economic zones and industrial clusters in China are covered. Also, trends in industrial specialization in India, Africa and Latin American countries are comparatively studied. As a result of the analysis of international experience, it is based on the fact that factors such as innovation, clustering, public-private cooperation and integration into global value chains are of decisive importance for effective implementation of regional industrial policy.

Keywords: regional industrial production, specialization, international experience, cluster theory, "smart specialization" strategy, industrial clusters, free economic zones, innovation, public-private cooperation, global value chains

1. Introduction

In the context of the global economy, specialization of regional industrial production is emerging as an important strategic factor in ensuring competitiveness and achieving sustainable economic growth. World experience shows that by directing regional production activities to certain sectors or areas, economic efficiency increases, rational use of resources is created, and value chains are further improved. This means that specialization of industrial production not only reduces the cost of production and increases export potential, but also has a strong impact on the processes of innovative development, technological innovation, and attracting foreign investment.

In the countries of the European Union, the policy of regional industrial clustering is being implemented as a priority. For example, in Germany, automotive and machine-building clusters, in Finland, innovation hubs formed around the IT sector, and in France, the aerospace industry cluster serve as one of the main drivers ensuring high competitiveness of the national economy. At the same time, in the US experience, technology parks and scientific research centers, especially Silicon Valley, are of central importance in stimulating innovation and developing the startup ecosystem.

In China, special economic zones, including the Shenzhen and Shanghai Free Trade Zones, are proving to be an effective mechanism for industrial modernization, attracting foreign capital, and expanding the production of export-oriented products. The South Korean experience is noteworthy as another unique model of deep specialization of industrial production. Clusters formed around large industrial concerns - "chaebols" in the

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country not only ensure national economic growth, but also create the opportunity to participate in the global market with highly competitive products. Transnational corporations such as Samsung and Hyundai are of strategic importance not only in the South Korean economy, but also in the economic development of the entire region.

In this way, regional specialization of industrial production in foreign practice serves not only economic efficiency, but also technological modernization, development of innovation potential and increase of investment attractiveness. This process has proven itself as a universal mechanism for ensuring the competitiveness of national economies and is widely used in the developed countries of the world.

Literature review.

Regional specialization of industrial production has been formed in the world economic experience on the basis of various models, which can be conditionally distinguished into the European model and the Asian model. In both models, the main goal of regional development is to achieve economic efficiency, stimulate innovation, and ensure global competitiveness.

Regional specialization in the countries of the European Union is developing based on the principles of "smart specialization". As Foray (2015) noted, each region should identify its comparative advantages and focus on these areas. For example, Germany specializes in automotive and "Industry 4.0" technologies, Finland specializes in biotechnology, and Italy is focused on design and creative industries. Thus, specialization in European regions serves as the main means of ensuring innovation and competitiveness.

In the case of South Korea and Japan, regional specialization is more characterized by the implementation of an active industrial policy by the state. As noted in the analysis of Lee and Kim (2017), the Korean government has identified the automotive, shipbuilding, and electronics industries as priority areas for national specialization. Extensive state support in this area has ensured the country's global competitiveness. Japan, on the other hand, has prioritized the robotics and electronics industries and achieved high technological development by integrating innovation with production processes.

According to Zhang (2020), free economic zones and industrial clusters (e.g., Shenzhen and Shanghai) in China serve as the main platform for attracting domestic and foreign investment. This regional specialization model has served to geographically concentrate production, increase export potential, and accelerate technology transfer processes.

While European countries have been developing regional specialization more based on innovation strategies, scientific infrastructure, and research centers, in Asian countries, the guiding role of the state and the strategy of entering foreign markets are of primary importance. The experience of Silicon Valley in the USA is the most striking practical example of cluster theory, practically confirming the theoretical foundations put forward by Michael Porter (1990). Thus, the general conclusion in world practice and scientific literature is that the success of regional industrial specialization is closely related to the effective implementation of cluster policy, the widespread use of innovative technologies, government support, and the level of integration into global value chains.

2. Materials and Methods

The study is based on the analysis of international experience. Through the analysis of literature, Porter's cluster theory, the European Union's "Smart Specialization" concept, and the experience of Asian countries were studied. Using the method of comparative analysis, models from Europe, America, Asia, Africa, and Latin America were compared.

Based on economic analysis, the efficiency factors of regional specialization were assessed. As a result of these methods, general trends and patterns were formed from international experience.

3. Results and discussion

In foreign practice, the specialization of regional industrial production is formed through various models, all of which are manifested in a manner consistent with the specific characteristics of the national economy, resource potential and the level of integration with external markets. Each country, based on its comparative advantages, inter-sectoral relations and the directions of state economic policy, forms a separate direction of specialization. In this regard, the strategies of "smart specialization" in European countries, high-tech industrial policies based on state support in Asian countries and the model of free economic zones in China are widely studied in the scientific literature as various ways of regional development. The common feature of these models is that they are aimed at increasing economic efficiency, developing innovative potential and ensuring integration into global value chains.

The specialization of industrial production in the regions of the European Union is mainly focused on innovation and high technologies, and this process is inextricably linked with the strategies of "smart specialization". As Foray (2015) points out, Germany has become a major driver of European industry through its automotive and Industry 4.0 programs. Finland has developed high-tech manufacturing through the establishment of clusters in biotechnology and information technology (European Commission, 2018). In Italy, successful cluster policies in the design and fashion industries have become an important factor in ensuring the competitiveness of the national economy (Buciuni & Pisano, 2015). Similarly, in Spain and Portugal, "smart specialization" strategies have accelerated development in the tourism, agricultural sector, and renewable energy sectors (Rodríguez-Pose & Wilkie, 2019). Thus, the experience of the European Union shows that it is possible to ensure economic efficiency and competitiveness by effectively using innovative directions, scientific potential, and cross-sectoral integration in the specialization of regional industrial production.

The US has relied heavily on cluster theory to specialize regional industrial production, which has become one of the strategic foundations of the country's economic development. Silicon Valley (California) has become a leading player in the global innovation market as a center for information technology, artificial intelligence, and the startup ecosystem (Saxenian, 1996). Detroit (Michigan) has long been recognized as a global center for the automotive industry, which has played an important role not only in the national economy but also in international industrial chains (Klier & Rubenstein, 2010). Houston and the state of Texas in general have also specialized in the energy sector, especially oil and gas, ensuring US energy security and influence in the global energy market (Brown et al., 2019). In general, the US experience demonstrates that high economic efficiency and competitiveness can be achieved by combining cluster policy, scientific research, and innovation as an effective model of regional specialization.

In South Korea, the processes of specialization of regional industrial production were carried out in close connection with the targeted economic policy of the state and the support of large corporations - "chaebol". The development model, which is called the "economic miracle" of the country, was based mainly on the strategy of deep specialization of industrial sectors and regional development. The industrialization programs adopted by the state were aimed at the modernization of national industry, as a result of which some regions became competitive centers on a global scale in certain sectors.

For example, the Seoul and Incheon regions have become the main centers of the information technology, telecommunications and startup ecosystem. Here, technoparks,

venture capital companies and innovation clusters have developed rapidly, ensuring the country's leading position in the IT sector. Ulsan, on the other hand, is famous for its petrochemical and automotive industries, which play a decisive role in South Korea's export potential. The fact that the country's large corporations such as Hyundai Motor and Hyundai Heavy Industries are located in this region has further strengthened its strategic importance. Busan, on the other hand, has become a world leader as a shipbuilding and maritime industry center, ensuring Korea's deep integration into global industrial chains (Lee & Kim, 2017). Thus, the South Korean experience demonstrates the harmony of state policy, support of large corporations and technological innovation as an effective model of regional specialization. Regional specialization in the country's economy has not only increased the export potential of national industry, but also created the necessary conditions for innovative development and successful competition in global markets.

Japan's experience in regional industrial specialization is based mainly on high technology, innovation and scientific research infrastructure. The country's economic policies have organized regional development on the basis of inter-sectoral harmony, thanks to which Japan has managed to take a leading position in the global economic system. Each large region has specialized in a certain industrial direction, contributing to the stable and balanced growth of the national economy. For example, the city of Nagoya has developed as a center for the automotive industry, and the cluster around the Toyota corporation has been supplying not only the domestic market, but also the international market with high-quality products. Production in this region is combined with deep technological modernization and scientific research. The city of Osaka specializes in the biotechnology and pharmaceutical industries. This direction is not only important in the country's healthcare system, but also plays a significant role in foreign economic relations through the production of export-oriented high-tech products. Tokyo, as a center of innovation and finance, has become the intellectual and financial driver of the Japanese economy. It is home to research institutes, universities and transnational corporations, which are crucial for ensuring the competitiveness of the national economy (Fujita & Tabuchi, 1997). At the same time, the Japanese experience shows that it is possible to effectively use cross-sectoral synergies based on high technologies in the implementation of regional industrial policy. This experience demonstrates that regional specialization has a strong impact not only on economic efficiency, but also on scientific and innovative development.

In China, specialization of regional industrial production has been carried out mainly through free economic zones and industrial clusters, which have developed widely as a result of the country's "economic reform and open door" policy. These zones have become the main platform for attracting domestic and foreign investment, mastering advanced technologies and establishing the production of export-oriented products.

For example, Shenzhen, as a center for electronics and information technology, has become China's "Harvard-like innovation laboratory." The location of global corporations such as Huawei and Tencent in this region enhances its strategic importance. Shanghai, as a financial and trade center, plays a leading role in the country's international economic integration processes. The Shanghai Free Trade Zone in this region attracts foreign capital and expands its trade and industrial potential. Guangdong Province specializes in textiles and light industry, and plays an important role in China's export-oriented economy (Zhang, 2020). Thus, China's experience demonstrates a sustainable model of economic growth by combining regional specialization with regional diversification and integration into international markets.

In India, specialization of regional industrial production has been carried out mainly through the IT sector and the service sector. As a result of the rapid development of the "digital economy" in the country, some regions have become centers of international outsourcing and high-tech services.

In particular, Bangalore has become known as the “Silicon Valley of India” and has become a center for IT outsourcing, software development, and technology startups (Heitzman, 2004). Many multinational corporations have established their branches there. Mumbai, as a center for finance and services, is gaining importance not only in the domestic economy but also in international financial relations. At the same time, Chennai has specialized in the automotive and logistics sectors and is known as the “automobile capital” of India.

The location of large automobile manufacturing companies and logistics centers in this region enhances its strategic importance. Thus, the experience of India shows that the IT sector and services are emerging as the leading directions in regional specialization, while diversification processes are also underway in sectors such as the automotive industry and logistics.

Regional specialization in industrial production on the African continent is developing mainly depending on natural resources. The structure of economic activity in this region is largely based on mineral resources and agricultural products, which determine the priorities of regional development.

For example, Nigeria specializes in the oil and gas industry, and the country is recognized as a supplier of strategically important raw materials in the Middle East and African markets. In Ethiopia, regional specialization has been formed in the textile and light industry sectors. In this country, the textile industry has been growing rapidly in recent years due to cheap labor and access to international markets. South Africa, on the other hand, is emerging as an industrialized center of the continent through its mining and automotive industries. The presence of gold, platinum, and diamond mines, as well as automobile plants of multinational companies such as BMW and Toyota, in this region reinforces its regional importance (UNIDO, 2020). Thus, the African experience shows that natural resources and labor factors play a key role in industrial specialization. Latin American countries have prioritized the specialization of regional industrial production mainly in the agro-industrial and service sectors. Agriculture, processing industries, and tourism are the main drivers of economic growth in this region. For example, Brazil is recognized as a leading country in the field of agro-industrial clusters and biotechnology. The country occupies a leading position in the world in the production of soybeans, coffee, and sugar, developing the regional economy through agricultural exports (Humphrey & Schmitz, 2002). Mexico, on the other hand, specializes in the automotive and textile industries and is integrated into regional industrial chains, especially through close economic cooperation with the United States. It is home to the production bases of multinational companies such as General Motors and Volkswagen. Chile is a leader in copper mining and renewable energy. The country's main economic strategy in Latin America is to achieve sustainable development by investing in solar and wind energy, along with the processing of mineral resources (Perez, 2001). Thus, the Latin American experience is notable for its focus on the agro-industrial complex, the rational use of natural resources, and renewable energy sources.

4. Conclusion

The general conclusion is that the success of regional industrial specialization is determined by the following factors:

- identification of local comparative advantages and implementation of cluster policy;
- reliance on innovation and high technologies, development of scientific and research infrastructure;
- strengthening cooperation between the public and private sectors;
- attraction of foreign investments and technology transfer;

- increasing export potential through deep integration into global value chains.

Thus, international experience proves that specialization of regional industrial production is not only the main driver of economic growth, but also an important strategic condition ensuring competitiveness in the world market.

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