UDK 339.5

HIGH-TECH SECTOR AND GLOBAL TRADE DEVELOPMENT

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The rapid development of high-tech industries is a core variable reshaping the structure of global merchandise trade. It has not only changed the product structure and market pattern of global trade, but also promoted an all-round transformation of trade rules, division of labor models and competition logic, becoming the core growth pole of global trade development [1].

With the rapid rise of high-tech industries, the proportion of technology-intensive products in global merchandise trade has been rising steadily, gradually replacing traditional labor and resource-intensive products to become the core category of global trade. The trade scale of high-tech products such as integrated circuits, new energy vehicles, photovoltaic modules, 5G communication equipment and biomedicine has expanded year by year, becoming the main driving force for the growth of global trade [2].

The trade status of traditional labor-intensive and resource-based products has gradually declined, and the global trade structure has shown prominent characteristics of “technologization, upgrading and intelligence"[3]. At the same time, the trade chain of high-tech products has been continuously extended, and the whole industrial chain trade from core components and intermediate products to finished products has become increasingly prosperous, driving the development of global trade towards industrial chain coordination.

This structural transformation indicates that the core of global trade competition has shifted from traditional cost and scale competition to technological and innovation competition [5]. The development level of high-tech industries and technological innovation capability of each country directly determine its position and benefits in the global trade pattern.

In addition, against the backdrop of changes in the geopolitical pattern and the adjustment of the global industrial chain, the regionalization trend of global high-tech trade has become increasingly evident [6]. Major economies have accelerated the construction of regional high-tech industrial and supply chains through free trade agreements and regional economic cooperation mechanisms, striving to realize the regional agglomeration of high-tech production factors and trade flows. For example, the European Union has strengthened the integration of the regional high-tech

industry through the Digital Europe Programme and the Green Deal Industrial Plan, and the United States has promoted the reshoring of high-tech manufacturing and the layout of regional supply chains through the CHIPS and Science Act and the Inflation Reduction Act. This regionalization trend has led to the formation of several high-tech trade blocs in the global market, with trade links within the blocs being continuously strengthened, while trade barriers between different blocs have increased to a certain extent, bringing new challenges to the globalization of high-tech trade.

The development of high-tech trade is not only a micro-transformation in the field of international trade, but also a core driving force affecting the adjustment of the global economic pattern. Its impact is reflected in the redistribution of economic interests, the restructuring of industrial division of labor and the reshaping of national economic competitiveness.

In terms of the redistribution of economic interests, the characteristics of high added value and high profit margin of high-tech products enable countries occupying the high-end links of the high-tech value chain to obtain more trade benefits. With the continuous deepening of the division of labor in the global high-tech industrial chain, the profit distribution within the industrial chain presents an obvious "smile curve" characteristic: the R&D design and brand marketing links at both ends of the curve occupy the main profit space, while the processing and assembly links in the middle obtain relatively meager profits [3]. The development of high-tech trade has further amplified this profit gap, making the economic gap between countries with technological innovation advantages and those at the low end of the industrial chain still prominent. At the same time, it has also promoted emerging economies to accelerate their climb to the high end of the value chain through independent innovation, trying to change their disadvantaged position in profit distribution.

In terms of the restructuring of industrial division of labor, high-tech trade has promoted the transformation of the global industrial division of labor from the traditional inter-industry and intra-industry division of labor to a division model based on the global value chain. Countries no longer simply engage in the production and export of certain types of products, but embed themselves in different links of the high-tech industrial chain according to their own factor endowments and technological advantages, forming a highly specialized and integrated global industrial division system. For example, some countries focus on the R&D of core technologies and the production of key components, some are responsible for the assembly and manufacturing of finished products, and others undertake the testing, maintenance and after-sales service of high-tech products. This new division of labor model has not only strengthened the economic interdependence among countries, but also made the connection between industrial division of labor and technological innovation capability closer [8].

In terms of the reshaping of national economic competitiveness, high-tech trade has become an important symbol of national economic competitiveness in the new era. The scale, structure and technological content of a country's high-tech exports directly reflect its level of technological innovation, industrial upgrading

capacity and international market competitiveness. Countries with strong high-tech trade competitiveness can drive the development of related upstream and downstream industries through high-tech exports, promote the optimization and upgrading of their national industrial structure, and thus enhance the overall strength of the national economy. On the contrary, countries with weak high-tech trade competitiveness are likely to be locked in the low end of the global value chain, with their economic development highly dependent on the import of high-tech products and core components, which restricts the sustainable development of the national economy. Therefore, all countries in the world have taken the development of high-tech trade as an important strategic task, increasing R&D investment, optimizing industrial policies and cultivating high-end talents, striving to improve their competitive position in the global high-tech trade market and enhance national economic competitiveness.

Combined with the current development characteristics of the global economy and high-tech industries, the global high-tech trade will present three prominent development trends in the short and medium term:

– the technological content of high-tech trade products will continue to improve, and emerging technology products will become new growth points. With the continuous breakthroughs in emerging technologies such as artificial intelligence, quantum computing, biotechnology and new energy storage, the industrialization and marketization process of related products will be accelerated. Products such as intelligent robots, quantum communication equipment, biological reagents and new energy storage batteries will gradually become the core categories of global high-tech trade, driving the continuous improvement of the overall technological content of high-tech trade.

– the demand for green and low-carbon high-tech products will surge, and green high-tech trade will become an important direction of global trade development. Under the background of the global carbon neutrality goal, all countries have accelerated the promotion of the green and low-carbon transformation of the economy and society, and the market demand for green high-tech products such as new energy vehicles, photovoltaic modules, wind power equipment and energy-saving and environmental protection equipment has grown rapidly. At the same time, countries have gradually introduced green trade policies such as the Carbon Border Adjustment Mechanism, which will further promote the development of green high-tech trade and make it an important driving force for the growth of global high-tech trade [8].

– the balance between globalization and regionalization of high-tech trade will be further adjusted, and the trend of "globalization with regional characteristics" will become increasingly obvious. On the one hand, the inherent demand for the global flow of high-tech production factors and the complementary advantages of industrial chains among countries will continue to maintain the globalization trend of high-tech trade[2]. On the other hand, considerations of geopolitical security and the stability of industrial chains will make major economies continue to strengthen the regional layout of high-tech industrial chains. This will make the global high-tech

trade form a development pattern of close links within regions and interconnection between blocs. Trade cooperation between different regions in the fields of emerging technologies and green low-carbon technologies will become an important breakthrough to promote the globalization of high-tech trade.

The above changes and trends of global high-tech trade have not only put forward new requirements for the development of high-tech industries of all countries, but also provided new opportunities for China to further optimize the structure and enhance the competitiveness of its high-tech exports. Against the backdrop of the in-depth adjustment of the global high-tech trade pattern, the development of China's high-tech exports needs to accurately grasp the development trends of global high-tech trade, take technological innovation as the core, industrial optimization as the foundation and international cooperation as the link, continuously improve the quality and level of high-tech exports, and consolidate China's position in the global high-tech trade market.

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