

Original Paper

Research on the Path of Digital Economy Promoting Export Trade under the Background of High-quality Development

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Abstract

Digital economy is an economic form based on information. It focuses on the role of value chain and industrial chain in many factors affecting the high-quality development of export trade. At the same time, based on the main characteristics of the digital economy, the paper analyzes the mechanism of the digital economy on the high-quality development of export trade, and the role of digital industrialization and industrial digitalization is more obvious. At this stage, if China wants to promote the high-quality development of export trade, it should promote the development of digital industrialization and stimulate the innovation ability of foreign trade enterprises. Improve the digitalization level of export trade industry and create a sound ecology for the development of international trade; Improve the basic services of the digital economy and expand the development space of export trade; Build a good development environment for export trade with the help of digital economy; Promote the diversification of export trade products, the diversification of main bodies, and the development of low-carbon.

Keywords

digital economy, high-quality development, export trade, innovation path

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1. Introduction

With the gradual application of big data, blockchain, cloud computing and other emerging technologies, China's digital economy has developed rapidly. As a new economic form, digital economy takes digital technology as the core driving force, forms new industries through new technologies, new industries promote new models, and new technologies empower traditional industries, promoting the digital transformation and high-quality development of the global economy. According to the *White Paper on the Development of China's Digital Economy* (2022), China's digital economy will achieve a new breakthrough in 2021, with a total scale of 45.5 trillion yuan, a nominal year-on-year growth of 16.2%, 3.4 percentage points higher than the nominal GDP growth in the same period, accounting for 39.86% of GDP. The digital economy will play a more stable role in the national economy and play a more significant supporting role.

In the context of the global epidemic, the digital economy has maintained a rapid growth of 9.7%, which has become an important support for promoting China's economic and social development. In November 2019, the Central Committee of the Communist Party of China and the State Council issued the Guiding Opinions on Promoting the High Quality Development of Trade, pointing out the importance of digital economy for promoting the high-quality development of trade. In the "Fourteenth Five Year Plan", it is proposed to promote digital industrialization and industry digitalization, strengthen the integration of real economy and digital economy, and establish a digital industry cluster with international competitiveness. The development of digital economy not only improves social productivity, but also significantly improves the efficiency of market transactions. The digital economy promotes the occurrence of trade and the expansion of market scale by reducing transaction costs and compressing the distance between time and space, and promotes the refinement of social division of labor and the deepening of specialties. The continuous growth of the digital economy has had a profound impact on the way of human production and life.

In recent years, countries have paid more attention to the innovative application of digital technology, the coordinated development of digital economy and the stable prosperity of digital trade, which have promoted the development of digital economy and digital trade. Digital economy promotes the development of digital trade. The emergence of digital trade has a profound impact on trade methods, trade objects, trade rules and trade patterns, especially on export trade. In terms of structure, compared with the average proportion of digital economy in developed countries accounting for 70% of GDP, China has only 38.6%, and the proportion of digital economy in GDP still has much room for improvement. The digital economy brings many opportunities to the development of China's trade, but it is also full of many challenges. The global trade model has undergone tremendous changes. Digital and intelligent trade is becoming an important breakthrough to achieve high-quality development of international trade. In this context, the author analyzes the internal mechanism between the digital economy and the high-quality development of international trade, and explores the path of digital economy to help China's high-quality development of international trade.

2. Theoretical Essence and Main Characteristics of Digital Economy

2.1 Connotation of Digital Economy

Digital economy is a new economic form different from traditional economy. Don Tapscott first proposed the concept of digital economy in his book *Digital Economy: Hope and Danger in the Age of Network Intelligence* published in 1996. He believed that the most powerful asset in the digital economy is data, which is a new type of asset. Beomsoo Kim (1998) believed that the nature of data economy activities was that goods and services were traded in the form of informatization. Chen Shiqing (2015) believed that the digital economy is an economic form in which human beings announce the identification, selection, filtering, storage and use of digital knowledge and information, guide and realize the rapid optimal allocation and regeneration of resources, and achieve high-quality economic development.

At present, the authoritative definition of the digital economy was put forward in the G20 Digital Economy Development and Cooperation Initiative in 2016. The initiative defines the digital economy in terms of elements, conditions, paths, goals, etc. think Digital economy refers to the use of digital knowledge and information as an important factor of production, through the power of modern information networks, with the effective use of information technology to improve efficiency, and therefore to optimize the economic structure. On the one hand, this connotation describes that digital economy includes digital knowledge and information, that is, data, as the key factor of production; on the other hand, it shows that digital economy has modern information networks and information communication technologies, that is Digital technology changes the characteristics of production mode. The production factors of digital economy include data, capital, labor and land.

From the perspective of market behavior, economic development and international trade, we believe that digital economy mainly refers to the economic process of manufacturing and supplying electronic products and services for e-commerce or the trade behavior caused by e-commerce. In this process, production and management are electronic, in which all suppliers, consumers and related activities are connected through the Internet and the World Wide Web technology. In the digital economy, if data is to become a factor of production that drives economic operation and development and innovation, it is necessary to convert data into information and information into value through digitization. With the formation and rapid development of the digital economy, new products and services, new business models and digital trade have emerged one after another.

2.2 Characteristics of Digital Economy

Compared with traditional economy, the characteristics of digital economy are mainly reflected in two aspects. First, digital economy pays more attention to product use and service extension, while traditional economy pays more attention to product production process. The digital economy mainly starts from the demand side, focusing on finding potential and invisible user needs, providing customized and personalized services for customers, and realizing user value co creation. The traditional economy mainly starts from the production side, focusing on solving the cost-benefit

problems in the production process, such as reducing production costs and transaction costs, improving the efficiency of resource allocation, and realizing economies of scale. Second, in terms of dealing with the relationship with consumption, digital technology enables more consumers to directly participate in production activities, making the boundary between production and consumption very vague, while the production and consumption activities of participants in the traditional economy are clearly defined.

From the connotation of the digital economy itself, the digital economy shows the characteristics of marginal income increasing with the scale, with high growth, strong diffusion, cost reduction and other important characteristics. The main reason is that the particularity of digital economy is mainly determined by the attributes of information. Information is significantly different from traditional production factors (such as land, oil, etc.). The accumulation of a large amount of information helps to generate knowledge, so as to obtain higher value output. The larger the information scale, the higher the accuracy of knowledge generation, and the corresponding sharp increase in commercial value.

From the research results of scholars, the academic community has basically reached a consensus that digital economy can promote economic growth (Oliner & Sichel, 2000). Digital economy is built on the basis of high-speed communication network, with universality and extensive penetration. Its marginal cost is almost zero. Representative technology products have strong network externalities, that is, the utility users get from digital products increases with the number of new users. The development of digital economy meets Moore's Law, Metcalfe's Law and Davido's Law (that is, rapid technology iteration, rapid cost reduction, increasing scale effect and Matthew effect of products).

3. Analysis of High-quality Development of Export Trade

There are many factors that affect the high-quality development of export trade, including both macro and micro factors; There are both external and internal factors; There are both cyclical and structural factors; There are also institutional factors (Pei Changhong & Liu Bin, 2019). Different scholars have explored the effective way of "high-quality development of export trade" from multiple perspectives, and have drawn some enlightening and referential conclusions. In general, trade is based on division of labor, so we need to look at the trade phenomenon at the level of international division of labor. Similarly, we need to analyze the factors that affect the high-quality development of China's export trade, supported by high-quality and high-level production factors, and seek high-quality development of export trade from the perspective of value chain and industrial chain.

3.1 Value Chain Dimension

The result of economic development is not simply measured by a certain quantitative index, but is to judge the actual value of economic output based on development goals, and judge the quality of economic development by the degree to which economic output meets the actual needs at a specific stage. Under the condition of global factor division of labor, the differences in the ability of different countries or regions to create added value and obtain trade benefits are not determined by the characteristics of factor intensity in different production links and stages, but by the principle of factor

scarcity. The scarcity of high-end and advanced production factors of a country determines its monopoly and competitive advantages, and then determines its absolute dominance and control ability in the global value chain. Therefore, the realization of value chain upgrading has become an important dimension of high-quality trade development.

3.2 Industrial Chain Dimension

Economic development should be seen as a dynamic process of continuous change. We should not only observe the external appearance of economic development, but also analyze the corresponding internal factors, and internalize key factors such as resource endowment, institutional environment, economic structure, and technological level into the analysis framework. The so-called industrial chain mainly refers to the degree of correlation between industries, especially between different manufacturing industries, and between service industries, especially producer services and manufacturing. The high-quality development of China's export trade should not only optimize and upgrade the structure of the tertiary industry, accelerate the development of the service industry, especially the modern service industry, and consolidate the industrial foundation of service exports, but also accelerate the transformation and upgrading of the manufacturing industry to high-end development, so as to realize the transformation of the manufactured goods export from large to strong. Consolidate the industrial basis for trade development. Give play to the role of market mechanism, promote the interaction between trade and industry, and promote the process of industrial internationalization. Accelerate the development of modern service industry, especially productive service industry, and promote the deep integration of advanced manufacturing industry and modern service industry.

4. The Role of Digital Economy in Improving the High-quality Development of Export Trade

In the era of digital economy, data has become a key factor of production, widely integrated into the process of value creation, and promoted the development of business models. Clarke and Wallsten (2006) showed that the higher the degree of digital economy development of developing countries, the more they can improve their export trade to developed countries. Meijers (2014) research shows that the development of the digital economy has significantly promoted bilateral trade, which has a more significant role in promoting the trade scale of low-income countries. The digital economy further drives economic growth by promoting international trade. Goldfarb and Tucker (2019) pointed out that on the one hand, digital economy has reduced economic costs in terms of search costs, marginal costs, transportation costs, tracking costs and verification costs, but on the other hand, digital economy will increase the uncertainty of trade, thereby reducing the scale of international trade.

Compared with traditional trade and value chain trade, the way and object of international trade are characterized by "digitalization", highlighting changes in two aspects: digital industrialization and industrial digitalization. Specifically, it is embodied in the digitalization of trade mode, that is, the digitalization transformation of the whole trade process and the whole industrial chain, the digitalization, networking and intelligent development of most traditional trade processes, and the

realization of lower trade costs, better efficiency and more diversified subjects; The digital transformation of cross-border delivery methods of various service trade has enriched the form of trade. The digitalization of trade objects, elements and services existing in digital form have become important trading objects in international trade.

4.1 The Impact Mechanism of Digital Industrialization on Export Trade

First, global industrial chain circulation. The development of digital industrialization promotes the effective spread of the domestic division chain, which not only expands the domestic production length in the global value chain, but also helps to realize the regional circulation of the global industrial chain led by China. The second is network connection effect. At present, most Chinese enterprises integrate into the global value chain in the way of “double embedding”. The application of digital technology has prompted more small, medium-sized and micro enterprises to join the industrial cluster, forming a supply chain and production network with more detailed division of labor, and improving the convenience of domestic industrial clusters to connect with the production links of the global value chain. Third, cost saving effect. The development of digital infrastructure can effectively reduce trade costs, including information search costs, coordination costs, and delivery costs, thus improving trade efficiency. Fourth, upgrade the value chain. The deep integration of digital technology and manufacturing industry can accurately identify consumer needs and provide high value-added products and services.

4.2 Impact Mechanism of Industrial Digitalization on Foreign Trade Export

First, the trade environment was optimized. It is conducive to accelerating and deepening the institutional opening of China’s rules and standards, and enhancing China’s position and voice in international rule making. Second, the industrial structure was optimized. With the digital transformation of traditional industries, we will accelerate the diffusion of knowledge, information and technological innovation, and promote the optimization and upgrading of industrial structure. Third, the complexity of export technology has increased. The digital transformation of manufacturing industry affects the technological content of export products by reducing trade costs, promoting technology spillovers and improving efficiency. Fourth, economies of scale. The integration of digital technology and the real economy will attract enterprises at the front end of the international value chain to gather in the region, which will help domestic enterprises to absorb external advanced technical knowledge and gain advantages in the international market.

5. Digital Economy Helps to Promote the Realization Path of High-quality Development of Export Trade

The development of digital economy has promoted the emergence and development of digital trade. The development of digital economy has promoted China's transformation from a traditional development model of high input, high output, high energy consumption and high pollution to a low-carbon, energy-saving and efficient development model, realizing industrial upgrading and structural optimization. The form of international trade has changed from traditional export to digital trade. The development of China's export trade is embedded in the global value chain in a digital form. The costs of restructuring the value chain, the mode of production and the interaction mode have also changed. Export trade increasingly relies on digital technology. Digital technology runs through all aspects of export trade, realizing high-quality development of export trade from digital industrialization, industrial digitalization, digital economy information technology, improving export trade development environment, adjusting trade product structure, etc.

5.1 Improve the Development of Digital Industrialization and Stimulate the Innovation Ability of Foreign Trade Enterprises

Accelerate the digital industrialization to create a good carrier and environment for the gathering of innovation elements, strengthen the coordination between the government and the market, and make the function of the digital economy play a greater role with the participation of more enterprises and industries. The innovation efficiency is constantly improved through the development and application of information technology. Enterprise digitalization bears not only the traditional production factors, but also the collaborative cooperation between enterprise digitalization and production and operation activities. Therefore, it is necessary to change the status quo that high-end factors are concentrated in the design field, promote their continuous flow to the R&D field, and accelerate the formation of customer demand oriented innovation mode. Effectively promote the growth of R&D investment of high-tech enterprises, promote the transformation of China's import and export trade from the accumulation of quantity to the upgrading of quality, formulate differentiated innovation guidance policies for different innovation subjects such as scientific research institutes, universities and enterprises, and form a good interaction between different innovation subjects.

5.2 Improve the Digitalization Level of Export Trade Industry and Create a Sound Ecology for the Development of International Trade

The achievements of high-quality development of export trade in the digital economy come from the innovation, standardization and integration of the industry itself, as well as the digital transformation. Judging from the current situation of international trade, it includes both e-commerce and digital upgrading, which is a form of integrated development. As an innovative trade mode in the new era, the sustainable and healthy development of international trade under the digital economy depends on the unity and cooperation of Chinese domestic enterprises. The government should implement the work of the digital bonded zone, strengthen financial support, and build a good digital ecosystem based on the

actual development. The government should strengthen the upgrading of traditional trade, closely contact the real economy industry, introduce digital trade, digital economy, digital new consumption and other industries, form a good industrial chain, build a perfect ecosystem, and constantly strengthen the union between various fields, so as to build an intelligent and interconnected digital ecological network.

5.3 Improve the Basic Services of the Digital Economy and Expand the Development Space of Export Trade

Internet technology and services are the basis for the realization of digital economy services, and also the basis for the development of export trade under the digital economy. The Internet penetration rate, usage cost and network speed will directly affect the degree and scale of China's digital economy construction and will further affect China's foreign trade situation. Promote the importance of infrastructure construction of digital economy to a higher level of attention and construction, equate the construction of facilities of digital economy with the construction of national hydropower, highways and other facilities, and comprehensively improve the penetration and utilization of broadband in China. Improve the basic design and construction standards of digital trade, strengthen the innovation of new technologies in the digital era, improve the network speed of the Internet, and enhance the stability of the network. We will strengthen the application of information and digital services in big data, 5G, artificial intelligence, VR technology and other frontier fields, accelerate the development and cooperation of new businesses, new economies and new industries in the field of digital economy, and lead the trend and direction of global innovation and development. Strengthen international exchanges and cooperation in the digital field, promote the strategic planning of digital trade driven innovation and development, implement corresponding policies, solve the problem of cross-border multi-party collaboration through the broadest international exchanges and cooperation, develop digital information channels integrating land, sea and air, and build digital information infrastructure, so as to expand the development space of export trade.

5.4 Build a Good Development Environment for Export Trade with the Help of Digital Economy

Through intergovernmental cooperation, we will continue to strengthen international exchanges and cooperation in the field of digital trade, make full use of WTO, SCO, ASEAN, G20 and other international organizations and summits for multilateral exchanges, cooperate extensively with countries around the world, jointly build free trade ports (zones), duty-free zones, cross-border industrial parks, etc., and promote investment facilitation and trade liberalization in cross-border e-commerce, digital trade and other related industries. We will continue to optimize the digital trade regulatory system and the collaborative governance system, and promote the establishment of a collaborative governance system that is managed by the government in accordance with the law and participated by enterprises and society; Innovate the government's regulatory means, and actively use high-tech technologies such as artificial intelligence and big data analysis to improve the governance capability and regulatory system; Formulate the corresponding negative list of cross-border digital

trade, strengthen the regulatory governance in the field of digital trade, strengthen the security of the digital trade industry chain, and rapidly issue laws and regulations on digital trade according to the actual situation to create a good development environment for export trade.

5.5 Promote the Diversification of Export Trade Products, the Diversification of Main Bodies, and the Development of Low-carbon

The development of digital technology makes the production of enterprises more intelligent, especially in terms of rapid response, which is more efficient than before. Export enterprises can obtain market information at low cost, master the demand of consumers, and optimize their own production and marketing structure, so as to realize the diversified development trend of enterprises' products and services. The development of digital economy makes it possible for the diversified development of export trade. More and more foreign trade enterprises choose to carry out export trade through digital means. Based on the characteristics of fairness and equality of figures, enterprises of different sizes and specifications can conduct business on the same platform, especially for small, medium-sized and micro enterprises, which can fully participate in international competition, so as to promote the diversification of export trade subjects. The traditional export trade mainly focuses on goods trade and relies on low labor prices to gain competitive advantages, which have made great contributions to China's reform and opening up. With the sharp reduction of the birth rate of China's population and the early arrival of population aging, the problem of China's population structure has become increasingly prominent, and the labor price advantage has gradually disappeared. The development of the digital economy has transformed the traditional trade from a high carbon model to a low carbon model, promoting the green development of enterprises and helping China achieve the goal of "double carbon".

6. Concluding Remarks

The high-quality development of trade is the embodiment of a country's economic development level, which not only includes the growth rate of GDP, but also reflects the quality of national economic development and whether it is sustainable. With the arrival of the digital economy era, the advantages of information transmission have reduced the cost of international trade, and profound changes have taken place in the traditional trade model. Digitalization in the economic field has become an inevitable trend of economic development. International trade has changed from price war to information war. The extensive application of information technology has weakened the influence of traditional factors such as geographical distance, economic differences and information asymmetry in international trade barriers, significantly improved the efficiency of international trade, and achieved remarkable results in increasing tradable categories, reducing transaction costs, and improving international trading mechanisms. Digital technology and digitalization are reconstructing the traditional industrial chain, value chain and supply chain, changing all aspects of world development. From the initial barter to cash transactions to e-commerce, the way of trade has undergone profound changes with the rapid

development of digital technology. In general, the development of China's digital economy has a great impact on export trade. China should always pay attention to the development trend of the digital economy and the development of international trade, constantly adjust its foreign trade development strategy, and take effective strategies to optimize the import and export structure, improve export quality and added value, strive for initiative in international trade, and provide favorable conditions for the development of the digital economy and the construction of a foreign trade power, To promote the process of trade power.

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