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International Economics

GRADUATION THESIS

on

Current state and development of international logistic

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ASSIGNMENT
FOR THE GRADUATION THESIS OF

Master's degree student Cui Lijun, group 19ЭЭМ3(a), full-time mode of study

1 The topic of the graduation thesis: "Current state and development of international logistic"

was approved by the university order
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2 The deadline for the Master's degree student to complete the graduation thesis is 11.06.2021.

3 The input data for the graduation thesis is the regulatory and legal framework, scientific literature and reference books, and Internet data.

4 The list of issues to be studied includes history and theory of international logistic; conceptual framework of international logistic; analysis of the influencing factors of international logistics; trend in development of international logistics; China's international logistics under the Epidemic.

5 The list of visuals contains tables and figures.

6 The date of setting the assignment is 29.11.2019.

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The assignment was accepted by Master's degree student _____ / Cui Lijun /
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Schedule for completing the graduation thesis

No.	Content of the thesis	Deadline for completion	Due date, signature of the academic adviser
First year of study			
1	Analysis of scientific literature, choice and updating of the research topic	01.09.2019 – 28.11.2019	
2	Framing the scientific concept of research	29.11.2019 – 12.01.2020	
3	Devising the detailed plan of the first chapter and draft of the thesis	13.01.2020 – 23.02.2020	
4	Conducting theoretical research within the first chapter of the thesis	24.02.2020– 30.04.2020	
5	Preparing the first chapter of the thesis	1.05.2020– 30.06.2020	
Second year of study			
6	Collection of statistical data and material for the thesis	01.09.2020 – 30.09.2020	
7	Studying new literature sources within the topic of the thesis	01.10.2020 – 31.10.2020	
8	Conducting research within the first and the second chapters of the thesis	01.11.2020 – 31.12.2020	
9	Preparing the second chapter of the thesis	1.01.2021 – 1.03.2021	
10	Preparing the third chapter of the thesis	2.03.2021 – 2.05.2021	
11	Preparing the introduction and conclusion	3.05.2021 – 16.05.2021	
12	Completing the graduation thesis	17.05.2021 – 30.05.2021	
13	Handing in the thesis for compliance control and antiplagiat	31.05.2021 – 9.06.2021	
14	Getting acquainted with the feedback and review	10.06.2021	
15	Presenting the written thesis	11.06.2021	

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The assignment was accepted by Master's degree student _____ / Cui Lijun /
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Summary

The graduation thesis comprises 71 pages, 3 chapters, 4 figures, 5 tables, 55 sources. INTERNATIONAL LOGISTIC, TRANSPORT, GEOGRAPHY, INTERNATIONAL TRADE, INTERNATIONAL COOPERATION, INVESTMENT.

The target of research is to analyse current state and development of international logistic.

The goal of work is to study background of international trade, factors affecting the development of international logistics, current situation of the development of international logistics and the future development trend.

The methodological framework of the paper is formed by the complex of theoretical and practical methods such as theoretical and empirical research, analysis and synthesis, statistical processing of information, as well as special research methods - dynamic and structural analysis, comparative legal method.

The results of research include: analysis of framework of international logistics in globalization has been established, division the time node that studies the international logistics in the economic globalization, analysis of influencing factors of international logistics in each stage, summation of historical law of international logistics in each stage.

The novelty of the research is on the macro level, the four main dimensions of economic globalization affecting international logistics development are proposed, it expands the perspective of time and space in the study of international logistics, on the basis of above studies and analysis, this paper analyzes the problems existing in China's international logistics under the epidemic situation and puts forward some development suggestions.

The recommendations on disseminating and applying the results are as follows: analysis of the prospects for international logistics can be used by public authorities, the scientific community, enterprises and organizations to expand theoretical knowledge in the field of international logistics.

The theoretical relevance of the thesis is established by analysis of historical stages of international logistics development.

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Introduction

Logistics is a productive activity that expands with the expansion of human living space. In the era of self-sufficient agricultural economy, logistics mostly occurs in the local area. When human beings cross borders, produce and live and exchange materials in a wider scope, logistics activities are also expanded to countries and regions, producing international logistics, and becoming an essential guarantee element for the international industrial division of labor and economic and trade cooperation. Before the arrival of the era of great navigation, maritime and onshore international logistics channels centered on the Mediterranean ports had been formed between the eastern and the west, but the coverage was basically limited to the Eurasian plate and could not support economic globalization. Zheng He opened up sailing routes from the southeast coast of China to the western Pacific Ocean and the Pacific Ocean, as far as East Africa and the Red Sea, connecting more than 30 countries and regions. Since then, the European navigation opened up the Atlantic to the Americas, bypass the southern end of Africa to India east and west routes, and Europe started to South America, across the Pacific and the Indian Ocean back to Europe, Europe, Asia, Africa and South and North America together, built a global route network, also opened the door of economic globalization, ocean transport become the main form of this round of global international logistics [2, p. 51].

After World War II, the United Nations, the International Monetary Fund, the International Bank for Reconstruction and Development (generally known as the World Bank) and other international organizations established the dollar-based international monetary system – Bretton Woods System. The General Agreement on Tariffs and Trade (later replaced by WTO) reedling the international political, economic, financial and trade system, Having established a multilateral economic system with foreign exchange liberalization, capital liberalization and trade liberalization as the main contents, Having played an important role in making full use of the resources of different countries and regions and expanding global production and commodity circulation, It has become an important institutional guarantee for the second round of economic globalization. The second and third industrial transfers all occur between developed countries and regions and

developing countries and regions, covering labor, capital and general technology-intensive industries, covering a larger scale and a wider range, which also brings the rapid growth of international trade volume and logistics physical volume. Secondly, the international logistics field ushered in the container revolution. Before the mid-1960s, most of the goods entered the international logistics process in a non-standardized scattered state. Because it was not convenient for mechanical operation, handling and other logistics activities mostly needed manual operation, even if mechanical operation can be used, due to the wide variety of goods, it was difficult to have complete loading and unloading equipment in most ports.

Moreover, the operation and storage of non-standardized goods in the whole process of transportation is also more complex, resulting in high international logistics cost, low efficiency, and often poor goods loss, loss and theft, and personal injury of dock workers and other incidents. In 1966, containers entered the international shipping field, bringing revolutionary changes in international trade and logistics. The emergence of containers makes the mechanization of logistics activities, automation level, the transformation of goods in different modes of transportation, logistics link also become simple and efficient, and in the state of closed goods damage, loss, theft and other accident probability greatly reduced, mechanical operation relative to manual operation safety and labor productivity significantly improved, labor intensity decreased significantly. The emergence of container transportation has greatly reduced international logistics costs, and greatly improved logistics efficiency and service level, creating conditions for enterprises to use global resources to carry out transnational production and operation activities, expand the international market, and promoting the in-depth development of economic globalization. Finally, new international shipping centers rise in Asia.

Since the 1960 s, Asian Hong Kong, China, Taiwan, Singapore and South Korea seized the European and other western developed countries, began to implement export-oriented strategy, the transfer of developed countries to attract a large number of foreign capital and technology, with location conditions and labor cost advantage, focus on developing processing industry, quickly established the industrial system, achieved economic leap development, to a developed and rich areas, known as the "Asian four dragons". Since the 1990s, China has accelerated the pace of reform and opening up, began

to undertake international industrial transfer on a large scale, attract foreign investment, expand export, and quickly became a global manufacturing center. In 2001, China officially joined WTO, and a big step forward in the process of integrating into globalization. In the early 1970s, almost all of the world's top 20 container ports were located in economically developed areas such as North America, Europe and New Zealand. By 2010, ports in East and Southeast Asia had occupied 13 seats and won the top 8. In the hinterland industry development to promote growing port scale, the development of ships also increased the demand for cargo transfer, location, infrastructure advantages of Singapore, Hong Kong, Shanghai and other ports gradually become the global container hub port, and with the port city shipping, finance, trade and other service functions, development after London, New York a new global shipping center, drive the focus of international logistics from the Atlantic coast to the Pacific coast.

At present, economic globalization has entered the third stage, and some countries propose to give up large-scale global agreements and turn to trade cooperation agreements with less participation and less difficult to negotiate. In this context, negotiations on the Trans-Pacific Partnership (TPP, to comprehensive and advanced TPP, to CPTPP after the US withdrawal), the Regional Comprehensive Economic Partnership (RCEP), and the Transatlantic Trade and Investment Partnership (TTIP) were launched. The international economic and trade pattern once again deeply adjustment, or may usher in the fourth industrial transfer. Southeast Asia, South Asia, Central Asia, West Asia, Africa and the central and western regions of China all have different advantages in undertaking industrial transfer and have own bottlenecks. At the same time, the improvement of economic development level has also boosted the market scale of developing countries. These changes affect the spatial distribution of international logistics demand. Large materials, accounting for about 60 % of the global international material flow, gather in Asia, especially East Asia. In 2013, China put forward the "area" initiative, get more and more positive response and foreign countries and regions and extensive participation, closer economic and trade ties and infrastructure connectivity, in the huge market covering 2/3 of the global population, built a broader and more diversified international logistics network [10, p. 18].

Today, with the rapid development of economic globalization and the increasingly fierce regional competition, international trade capacity has become a key factor in determining the economic growth and industrial development of a region or even a country, and international logistics is also facing a new development situation. With China's gradual leadership position in the global economy, international trade has developed to the era of "considering logistics from a strategic perspective". International logistics, as a service industry, is the "third profit source" of promoting international trade growth besides reducing trade barriers and improving labor productivity. On the one hand, in order to adapt to the development trend of globalization, speed up the adjustment of international logistics pattern, on the other hand to strengthen the construction of international logistics system, for global investment, production and consumption, more economic, more efficient, more convenient logistics support and guarantee, expand international trade logistics service advantages, in the context of economic globalization on the influence of international logistics development of qualitative and quantitative analysis, has a great and far-reaching practical significance.

This paper starts from the background of international trade and economic globalization, and uses the methods of literature research and thinking analysis, analyze the factors affecting the development of international logistics with the three main dimensions of governance structure, spatial structure and science and technology, and form a theoretical framework for influencing factors analysis. Moreover, it discusses the current situation of the development of international logistics and the future development trend, and puts forward corresponding suggestions and measures for China's international logistics under the influence of the epidemic, so as to provide a theoretical basis for the development of a higher level of open economy.

Chapter 1 Theoretical basis of international logistic

1.1 History and theory of international logistic

There are also numerous studies on international logistics at home and abroad, but in general, there is more micro research and less macro research. Because this paper focuses on the macro perspective, it mainly reviews the relevant literature in this field.

Economic globalization is not a discipline nor a systematic theoretical system, not even a complete, unified or recognized definition, but since the first term by the economist Theodore Levitt in 1983 [22, p. 94] , as a phenomenon or trend of world economic development, it has been well known, and related research and research involve very rich fields. He believes that globalization had experienced three waves before the 21st century. The first appeared in the second half of the 19th century to the early 20 century, mainly characterized by the prosperity of international trade and the massive transnational flow of capital and labor; the second appeared in the 1950–1960s, macrocharacterized the international financial and international trade system built on the United States, with multinational corporations as the micro feature, but without the participation of the socialist countries, can only be counted as "hemispherical" of the world; The third wave surges at the end of the 1970 s, a new round of scientific and technological revolution, economic policy adjustment in western countries, the reform of economic liberalization and opening up policies, and the internationalization of enterprise business activities contributed to this round of globalization [6, p. 23]. Jin Beibei also uses 1.0 to 3.0 to describe economic globalization, he took World War II as the boundary, called the 19th century to the middle of the 20th century the era of colonial 1.0, since the middle of the 20th century called the 2.0 era. Currently, the world is entering the era of with multipolar power, intertwined interests and co-governance [18, p. 8]. International logistics is influenced by various factors at every stage of globalization and presents different characteristics and evolution laws, which are closely related to the development form and interest pattern of globalization at this stage. For globalization brought interests, disadvantages, results, as well as different groups and countries in globalization and gains and losses, future trends, there has been

more debate, not only a large number of academic papers were widely reproduced, and many bestsellers popular around the world, this is also a manifestation of globalization.

Many scholars believe that since the 1970s, globalization has become the driving force of world economic growth, especially scholars in developing countries pay more attention to the opportunities of economic globalization, such as Zhang Yunling (2008) that contemporary economic globalization "the ideological liberation of the global market, the free flow of factors of production, most countries with the economy greatly liberated the productivity". But there is no lack of doubts about globalization, disputes over contradictions, as well as globalization will lead to economic stagnation, social instability, instability, industrialization, increasing imbalance, some scholars criticized globalization created the developing countries "sweat shops" and exploited low-cost labor groups, as well as some areas of resource depletion, ecological deterioration, global climate warming and spread of terrorism, etc. Stephen D. King argued that globalization promoted wealth growth after World War II, but changed from well-being to a bane in the early 2000 s, serving only the minority rather than benefiting the general public, reducing inequality within nations and the inevitable tension between economic globalization and the nationalization of politics. He also believes that globalization is easy to reverse, that an important reason for its decline is the lack of global "leadership" and more than one version of globalization, and that emerging superpowers will seek ways to fit their own interests and respond to their own history to reshape the surrounding world. Branko Milanovic commented that "globalization is a mixed force", more focused on the inequality brought about by globalization, through an analysis of the cumulative growth of actual income of residents in the 20 years 1988–2008, to reach a similar conclusion to Lord Jane, that the inequality among countries is shrinking, domestic inequality is intensifying, globalization is more conducive to "rich people in rich countries", and the biggest loser was "the lower middle class of the rich country", "middle class in emerging economies" are also winners, but their absolute earnings are far lower than the high-income groups in wealthy countries. He also found that countries such as China and India have driven an overall decline in global inequality, the first change in the upward trend of since the Industrial Revolution [29, p. 20]. As in the first half of the 19th century, Friedrich List was in Germany, which had yet to be

industrialized, accusing free trade traders of being ostensibly cosmopolitan, fraternalist, and actually interest monopolist [10, p. 33]. He stressed the importance of national industrial independence, put forward the theory of naive industrial protection, as well as the protection means, deadline and other specific views. It can be seen that since the opening of the globalization process, there has been no lack of "anti-globalization" in the world, resulting in the wave of "anti-globalization" on the international scale. Xue Yanwei pointed out that after the 2008 financial crisis, the pace of globalization slowed down, neoliberalism has been questioned in some regions, and the anti-globalization trend was rising [45, p. 75]. Picetti also pointed out that globalization in the 21st century is only the globalization of economy, market and finance, but globalization without governance, taxation, transfer payments and compensation for losers in globalization is destined to be unsustainable. Since the outbreak of the COVID-19 epidemic, the "final conclusion of globalization" and "new Cold War" have also spread. Henry Alfred Kissinger believes that the novel coronavirus pandemic will forever change the world order [19, p. 5], which while it seems to point more to a change in global leadership, also expressed concern that the normalization of the economic blockade severely hit free trade. Robin Niblett, director of the Royal Institute of International Affairs, called the virus "the last straw to crush economic globalization" and a large number of renowned international experts "announced" that it is at its end. But there is another view, such as many international strategic scholars, president of the Committee on Foreign Relations, and Robert S. Kaplan, a senior researcher at the New American Center for Security, arguing that the epidemic "demonstrates that globalization is a reality and no choice", "or become a watershed in stages 1.0 and 2.0 of economic globalization". Chen Weiguang believe that globalization is not the main cause of leading countries, globalization or counter globalization depends on the countries exist and play the "two-way movement", that the future will return to the new "embedded liberalism" globalization and global governance, and pointed out that China advocates the new globalization model and economic order is a modern globalization system [9, p. 7].

Stage research on the development of logistics is a common paradigm in academia, but the research on international logistics has few similar achievements, and the theoretical community is generally concerned about the narrow concept of logistics as a modern

management method, rather than the general concept of the space change, in the few research results, the historical starting point of research is also mostly in the formation of modern logistics concept in the middle of the 20th century. For example, the capals of China Market in 2011 depicts the development history of international logistics, mainly going through three stages: the 1950s to early 1960s, early 1970s-80s and early 1990s, and depicts the changes in the international logistics awareness concept, facilities, management technology and service mode at each stage. Other studies study the development process of international logistics from the perspective of the emergence, development and decline of various modes of transportation. For example, as mentioned above, each transportation stage corresponds to different leading modes of transportation, and also corresponds to the integration and development relationship of international logistics [20, p. 124]. The contribution to this paper is the thorough study of the development laws of transportation stages, especially the interaction between transportation and industrialization, and reveals the core economic relationship of transportation.

As early as the Great Navigation, Walter Ralleigh had said, "whoever controls the ocean controls the trade. Whoever controls world trade controls the world's wealth and the world itself" [38, p. 112]. It was under the guidance of this idea that, while many mainland countries still focused on their land, Marine countries such as Britain and the United States had controlled the sea by relying on the strong navy and dominated the trade routes, establishing an incomparable competitive advantage in the era of colonialist globalization. When the absolute control of "maritime rights theory" over international logistics also seems to become inappropriate and difficult to implement, the development of science and technology enables international logistics to establish a completely new relationship with globalization, which many scholars have studied, most typically the "container changing the world" described by Marc Levinson. He noted that a container core, highly automated, low cost and complex cargo transport system reduces transportation costs, thus changing the shape of the world economy, isolated factories are integrated into networks, international manufacturers can choose to build factories with the lowest production cost, the purely local market is almost extinct [21, p. 11]. In terms of the impact of economic globalization on international logistics, Yang Zigang et al believed that economic

globalization has promoted the formation and development of the international logistics system, and analyzed the international logistics strategy of logistics enterprises [47, p. 19]. Many other scholars have paid special attention to the development relationship between "One Belt And One Road" and international logistics. For example, the research of Zhang Shiqi and others shows that the improvement of railway and port infrastructure quality along most "One Belt And One Road" countries has a significant positive effect on China's economic growth through the intermediary role of import and export trade [51, p. 11]. Tao Zhang and others analyzed the improved gravity models and found that the national logistics performance has a significant positive impact on the trade level of China and countries along the "One Belt And One Road". Completing the shortcomings of logistics performance and strengthening infrastructure connectivity are an important way to improve the international trade level along the "One Belt And One Road" [37, p. 63].

The research on the relationship between international logistics and globalization, one is micro technical research, mainly focuses on how international logistics reduces international trade costs, improve the safety and efficiency of international supply chain, and promote the development of global economic integration, the other is macro strategic research, mainly studies the status and role of international logistics in globalization, and how to build and use international logistics. This paper pays more attention to the latter.

1.2 Theories related to international logistics

The generation and development of International Political Economy conforms to the specific requirements of globalization and profound changes in international political and economic relations since the middle and late 20th century, and its research focuses on international actors of countries, multinational corporations, international organizations and other on. Robert Gilpin divided international political economic theory into three categories: nationalism (also known as mercantilism), liberalism, and Marxism. Although the three theories have different views in analyzing the object, the determinant of political and economic relations, and the essential characteristics of international political and economic relations, But whether it is the "zero-sum game" of nationalist theory, macro "hegemonic

stability theory", micro "bureaucratic research method", the choice of national wealth and strength, and trade protectionism, or the liberal theory of "free trade is the best choice of human rationality", the theory of interdependence, or the inevitable relationship between capital in the world and the labor of "you gain and I lose", the attachment theory, the world system theory, and the Gramsci School, both provide an important theoretical reference to analyzing the complex political and economic relations in globalization.

Economic Geography studied the spatial layout of economic activity. Globalization is the trade, production, investment and other economic activities carried out with the world geographical space as the scope of its activities, while the international logistics is the demand derived from the above economic activities. The discussion on economic activity location and transportation cost has an important influence on the study of global international logistics. Enterprise organization is one of the main research objects of economic geography. With its accelerated expansion to transnational, interregional and global operation direction, R. B. McNee proposed the concept of enterprise geography, and some research focused on the increasing status of multinational companies in the global economy, focusing on their spatial structure and evolution. In recent years, economic geography, both regional and enterprise has shown concern for the globalization of economic activities. Paul R. Krugman built a new set of theories in free trade, globalization, and was awarded the Nobel Prize in Economics for theoretical contributions like "international trade models and location of economic activities". These theories have a certain supporting role in analyzing the spatial form and driving force evolution of international logistics in globalization [30, c. 134].

Transport Economics is associated with economic geography, forming intersection in the study of transport issues related to geographic space. The core production activity of international logistics is transnational transportation, and the various economic relations produced in the process of economic globalization can be explained by the relevant principles of transportation economics. Transportation economics studies the formation of transportation cost to spatial location, and with the development of various modern transportation modes, the focus of the research objects is constantly shifting, from railway to highway to civil aviation. Due to different stages of economic development, facing major

transportation problems, Ronghe put forward the theory of transportation, and divided the transportation process into three stages: preliminary transportation, perfect transportation and post-transportation. Thereafter, in order to better explain the important processes of industrialization, urbanization, informatization, globalization, it further improved the above stage division, divided into 1.0 stages and 2.0 stage and stage 3.0, and the possible transportation stage 4.0. Transportation economics has formed a complete theoretical system between transportation and economic development, which provides a theoretical tool for analyzing the development and evolution of international logistics influenced by various aspects of economic globalization [27, p. 93].

Adam Smith 's division of nature (international regional division of labor), David Ricardo' s comparative cost trade theory (comparative advantage trade theory), John Stuart Mill's mutual demand theory, and Eli F. Heckscher and Bertil Ohlin are representatives of the classical international division of labor theory, mainly from the perspective of advantages and elements, mainly based on many assumed conditions. Raymond Vernon's product lifecycle theory, Alfred Marshall and Krugman' s external theory of scale, Michael E.Porter 's diamond theory, Yang Xiaokai' s theory of endogenous comparative advantage have added more influencing factors on the basis of revising previous assumptions, and are the representative of the modern international theory of division of labor. Frobel and Balassa focus on the horizontal and vertical international division of labor, studying inter-industrial and intra-industrial trade, representing the contemporary theory of international division of labor, which is forming a theoretical system.

Marx believes that the large-scale production of international division of labor separates large industry from its own base and relies entirely on international market exchange. The world is divided into agricultural production areas and industrial production areas. Although the exchange in accordance with international value is equivalent, developed countries exchange less labor in developing countries. Engels also regarded the natural division of labor and free trade as a tool for capital profit-seeking. Based on the international division of labor and international trade theory, the development of international logistics has become a means of realizing countries in the global relative advantages of production and trade system, is an effective way of competition and

cooperation in the common market, international logistics has promoted the development of globalization, also affected by the division of labor and trade mode and space form.

With the deepening of round after round of scientific and technological revolution, international competition is becoming more and more reflected in the competition of scientific and technological strength and innovation ability, and technological innovation and technological diffusion with multinational corporations as the main carrier have become an important driving force for economic globalization.

Joseph Alois Schumpeter pointed out that "innovation refers to introducing a 'new' new combination ' of new factors of production and production conditions into the production system", which first proposed "innovation" and its role in economic development. Everett M. Rogers pointed out that innovation and its diffusion jointly constitute the underlying momentum of economic development, and summarizes the rules from the process of innovation diffusion, and puts forward the S-type curve theory [44, p. 201]. Japanese scholars such as Kim and others studied the type of international division of labor in the world economy and believed that science and technology had become an important and decisive factor. The theory of human capital promotion expounds the role of technological innovation from another perspective, believing that the accumulation of human capital, deepening division of labor and technological progress have formed a benign interaction mechanism, which has become the fundamental driving force for long-term economic growth. Technology not only changes the international division of labor by changing the mode of production, but also changes the form of international trade, and forms a new structure of international trade composed of the trade in goods, services and technology.

In the wave of economic globalization, international logistics is not only the carrier of technology innovation and diffusion, but also the product of the continuous development of science and technology, study the international logistics influence factors in globalization, inevitably involves the theory between technology innovation diffusion and economic growth, international division of labor and competition cooperation, especially in recent years the developing countries with developed countries, the overall pattern of globalization and the influence of international logistics, deserves attention and reference.

Chapter 2 Analysis of the influencing factors of international logistics

2.1 Conceptual framework of international logistic

The term "economic globalization", which is said to have first been proposed by Trevi in 1985, has not yet had a recognized definition. "Economic globalization refers to the increase in the scale and form of transnational trade and capital flow in goods and services, and the rapid spread of technology enhancing the interdependence of the world economies".

And the Organization for Economic Cooperation and Development (OECD) believes that "economic globalization can be seen as a process in which economic, market, technology and communication forms are becoming increasingly global and less national and local". To this end, economic globalization can be understood from three aspects: one, the strengthening and interdependence of the convergence of economic relations and the strengthening of international economic coordination mechanisms, namely, multilateral or regional organizations have a stronger coordination and binding role on the world economy. In general, economic globalization refers to the process of market division of labor and cooperation in various countries based on market economy, advanced technology and productivity as the means, developed countries and the maximum profits and economic benefits as the goal, through the division of labor, trade, investment, multinational companies and factor flow [43, p. 59].

Some people analyze the development perspective of the productivity movement that economic globalization is a historical process. On the one hand, around the world, the economies of countries and regions are interwoven, influence and integrated into unified integration, namely, a "global unified market"; on the other hand, global rules for regulating economic behavior are established worldwide and a global mechanism for economic operation. In this process, the market economy unified the world, and factors of production flow freely and optimized around the world. Therefore, economic globalization refers to the historical process of factors of production moving across borders and flowing freely globally with countries and regions. Others analyze from the perspective of production relations that "economic globalization" is actually the developed countries and

multinational companies of America to control the world economy and enrich developing countries.

Since the 1990s, the rapid development of high and new technology centered on the information technology revolution has not only broken through national boundaries, but also narrowed the distance between various countries and different regions, increasingly integrating the world economy into a whole. But economic globalization is a "double-edged sword". It has promoted the great development of global productivity, accelerated world economic growth, and provided a rare historical opportunity for a few developing countries to catch up with the developed countries. At the same time, it also intensified international competition, increased international speculation, increased international risks, and had a serious impact on national sovereignty and the national industries of developing countries. What is more serious, in economic globalization, developed countries and multinational companies will benefit the most, while developing countries gain little. Therefore, the gap between developing countries and developed countries will further widen, and some LDD countries will be excluded from economic globalization, become more and more "marginalized", and even become "new technology colonies" for developed countries and multinational corporations. Economic globalization has shown a strong vitality, and has caused a huge impact on all the economic, political, military, social, cultural and other aspects of the world, and even the way of thinking. It is a profound revolution, no country can avoid, the only way is how to adapt to it, actively participate in economic globalization, and be tested in the tide of history.

International Logistics is the process of physical movement of goods from the place of supply of one country to the place of reception of another. The broad scope of the international logistics research includes international trade logistics, non-trade logistics, international logistics investment, international logistics cooperation, international logistics exchanges and other fields. Among them [50, p. 19]:

- international trade logistics is mainly the reasonable flow of goods in international organizations;
- non-trade logistics refers to international exhibition and exhibit logistics, international postal logistics;

- international logistics cooperation, international logistics refers to international logistics for completing major international economic and technological projects;
- international logistics investment refers to logistics enterprises in different countries to build international logistics enterprises;
- international logistics exchange mainly refers to international exchanges in logistics science, technology, education, training and management.

In the narrow sense, international logistics mainly refers to an international commodity or exchange activity moving the goods or goods) to overcome the spatial interval and time distance between production and consumption of the production and consumption, thus achieving the ultimate purpose of international goods trading, that is, the seller can deliver the documents, goods and charges, while the buyer accepts the documents, pays the goods and collects the goods.

The essence of international logistics is according to the principle of international division of labor and international conventions, using international logistics network, logistics facilities and logistics technology to realize the international flow and exchange of goods in order, so as to promote the development of regional economy and the optimal allocation of world resources. The overall objective of international logistics is to serve international trade and transnational operation, that is, choose the best way and path to transport goods in quality, quantity and time from the supplier of another country at the lowest cost and minimum risk [55, p. 17].

Science and technology is one of the important driving forces of economic globalization. Whether large-scale scientific and technological revolution and small-scale technological innovation have played a role in promoting the overall development trend and process of economic globalization or local regions and local areas to different degrees. The development of science and technology affects all aspects of the economic field, but also includes the field of international logistics industry. The emergence and popularization of five modern modes of transportation are supported by the development of science and technology. The operation of modern logistics is inseparable from the development of industrial technology, circulation technology, information technology and other science and technology. It can be seen that both economic globalization and international logistics are

closely related to science and technology, so science and technology are regarded as an analysis dimension of the influencing factors of international logistics in economic globalization. This paper defines the dimension of science and technology as follows: the science and technology of economic globalization refers to the industrial revolution, scientific and technological revolution and major scientific and technological innovation that have a profound influence on the development level of productivity and are spread by globalization; the science of international logistics

Technology refers to the important equipment technology that can change the international logistics cost, efficiency, access scope, operation mode, service industry state and so on.

Science and technology drive world economic growth and change the international division of labor. Scientific and technological innovation has been widely used and further developed with the diffusion of technology, and economic globalization is an important carrier of technology diffusion, from early migration to later foreign direct investment and import and export trade, are the main ways of technology diffusion. The development and technological development in the international logistics field also stems from such technological innovation and diffusion, and promotes the upgrading of logistics-related equipment technology. In turn, the technological innovation of logistics, including the emergence of new mode of transportation, the change of transportation facilities and transportation, multimodal transportation of new logistics organization mode, the development of new technologies and new forms of logistics, have greatly extended the human economic activity space, significantly reduced the logistics cost, improve the operation efficiency, make the production organization across time and space has technical and economic feasibility, so that producers around the world can share the global market. Therefore, in the dimension of science and technology, international logistics and economic globalization have also had a profound mutual influence.

As a branch of logistics, international logistics also has some own characteristics in addition to its general characteristics [2, p. 55]:

1 Large environmental difference. The large difference in logistics environment in various countries, especially in logistics soft environment, is a prominent feature of

international logistics. Because different countries apply different logistics laws and have different levels of economic and technological development, international logistics is under different policies, economic and technological conditions, with its complexity far beyond domestic logistics. For example, the uneven level of international logistics technology causes some areas that cannot apply some advanced technology to become a shortcoming in international logistics, reducing the overall level of international logistics system; different countries use different equipment and facilities standards, resulting in logistics "integration" between countries; and the local culture of different countries is also one of the important reasons for limiting international logistics.

2 Deep dependence degree of informatization. In the international logistics business process, the service, documents, tracking and other information about the international logistics need to largely rely on the international logistics information system. Only relying on the international logistics information system, can realize the real-time query of goods logistics in the process of international trade, convenient, paperless international logistics procedures, speed up the circulation of goods, therefore, the international logistics information system is an important means to support the international logistics business and improve the level of international logistics services.

3 High technical level requirements. International shipping, land transportation, shipping and container multimodal transport are the most commonly used methods in international logistics and transportation. International logistics route is long, many links and large environmental difference, resulting in greater risk of damage in international logistics process, international logistics has higher professional requirements for logistics tools and equipment, international trade has large number of goods and limited facilities, which are needed to improve operation efficiency, save time, and scale effect to reduce unit cost.

4 High risk. The environmental difference of international logistics is very different and wide, so the risk is also greater. Potential risks in international logistics include: political risks of damage and loss of goods caused by strike, war, etc.; credit and financial risks due to changes in exchange rate, corporate credit change in article transaction and performance; natural risks of natural factors (such as sea breeze, rainstorm, etc.) and risk of accidents.

5 International information system support. International information system is a very important support means for international logistics, especially international combined transport. The difficulty of the establishment of the international information system is management difficulties, the second is huge investment. Due to the high level of logistics information in some regions of the world and some low areas, the information level will be unbalanced and the establishment of the information system is more difficult. At present, a better way to establish the international logistics information system is to get online with the public information system of national customs, and to master the actual situation of various ports, airports, combined transport lines and stations, so as to provide support for supply or sales logistics decisions. International logistics is the earliest area to develop "electronic data exchange" (EDI), and EDI-based international logistics will have a significant impact on the internationalization of logistics.

2.2 Dimension analysis of impact factors of international logistics

Governance structure is an important aspect of economic globalization. Some scholars believe that the international institutional arrangement, the influence of global governance structure on economic globalization, is of more decisive significance. The term governance structure was originally used to describe the internal establishment, institutional design, management relationship of companies, enterprises and other economic organizations, such as Zhang Weiying explained Blair's view: corporate governance structure narrowly refers to institutional arrangements concerning the function, structure, shareholder power of the board of directors, generally speaking, a set of legal, cultural and institutional arrangements related to the distribution of company control and remaining claims, which determine the goal of the company, who implements control, how to control and distribute risks and benefits among different enterprise members. Therefore, the broad corporate governance structure has almost the same meaning as the corporate ownership arrangement, or more accurately, the corporate governance structure is only the embodiment of the enterprise ownership arrangement, and the enterprise ownership is an abstract summary of the corporate governance structure. Later, the governance structure

was used in different fields such as international politics, social management and economic activities, and it was also given new meanings, but overall, it refers to an institutional arrangement or organizational structure used to coordinate and maintain the relations between stakeholders [50, p. 25].

This paper defines the governance structure of governance as follows: the governance structure of economic globalization refers to the leaders, participants (scope) of economic globalization at each stage of development, globalization promotion mechanism and the pattern and distribution of relevant parties in this process; The governance structure of international logistics refers to the access channels and control rights that support the flow of transnational materials (including family, enterprises, pluchaebol and other economic entities and the parent forces behind them), This strength and concentration of controlling power (absolute or relative control), And the controller of these resource elements to promote the safe and effective operation of international logistics.

The governance structure involves the responsibility and power of all the parties involved, and the pattern of interests formed on this basis. Economic globalization governance structure has an important influence of international logistics, in the many participants of globalization, the dominant body is usually the controller of international logistics resources, the stronger the dominant position, the stronger the absolute control of logistics resources, the way of globalization also determines the operation of international logistics, in violence, capital, common interests, international logistics also through different ways to maintain security and smooth. The governance structure of international logistics will also affect economic globalization, and can form a certain control force in the field of international logistics, which also means to establish a greater competitive advantage in economic globalization, so as to obtain more distribution of interests.

The arrival of the era of great navigation has ended the isolated human history between the eastern and western hemispheres, broken the self-sufficient economic system of the world, and brought about global capital expansion. However, unlike Zheng He to the western seas to establish friendly relations and spread advanced culture and technology, the purpose of the early European explorers sailing activities is to open up new trade routes and markets, obtain the wealth from the east, their voyage expedition is not only supported by

Portugal, Spain and other European royal finance, but also authorized to overseas plunder and colonial rule .As of 1876, European colonists had occupied 10.8 % of Africa, 27.5 % of the Americas, 51.5 % of Asia, and 100 % of the land in Oceania [20, p. 125]. With private capital, these powerful colonists used their army to seize overseas colonies, turning them into a profit-seeking market and cheap raw material supply, digging and plundered local resources, and gained huge wealth through violence and fraud. As the Communist Manifesto noted, "The discovery of America, and the voyage around Africa, has opened up new ground for the emerging bourgeoisie. The markets in East India and China, the colonization of the Americas, trade in the colonies, means of exchange and general commodities increased commerce, navigation and industry" [18, p. 13]. Therefore, this stage of economic globalization is the European countries to obtain economic power by scientific and technological development and industrial revolution, and then seek international political and military power, relying on capital and violence to promote globalization, and the vast Asian, African and Latin American colonies and semi-colonial countries are also the participants of this round of globalization, but in the passive, exploitation and even infringement of the status, the status between participants is very unequal, the interest distribution is very unfair. With the help of great navigation, the western powers started the process of economic globalization. Under the influence of the early maritime power thinking, they competed to seize the strategic channel on the ocean and seize the strategic fulcrum of cities, fortresses, commercial stations and docks on various coastlines, so as to protect their smooth business road and block the trade in other countries. The new air route connects the four oceans, and these channels are also distributed across the oceans.

Li Bing said: "In the long maritime transport line, only the one or two throat, the strategic strait ... It is called the maritime strategic transport channel ", and the strategic channels in the Atlantic Ocean, Indian Ocean and Pacific Ocean are systematically sorted [20, p. 123]. In the first stage of economic globalization, Portugal, Spain, Britain, the United Kingdom, France, the Provincial Republic (Netherlands), Russia (Soviet Union), the United States, Germany and Japan have become global powers, among which Portugal, the Netherlands, the United States has become world leaders, in the battle for maritime

strategic channel, establish global hegemony. At one point, the Netherlands took control of the main shipping trade in the Baltic Sea and the North Sea, and monopolized all the products of the East, becoming the stack of national goods [24, p. 53] and the "Wachman" of the world. The UK seized Cape Town, Elizabeth, Zanzibar, Mombasa and Mauritius in Africa, using it as a naval strategic base, long controlled the vital maritime strategic channel after the Suez Canal, and in Asia Hong Kong, Singapore, Yangon, Penang as the strategic fulcrum [26, p. 46]. Through the Treaty of Tianjin, foreign merchant ships obtained the right of free access in the ports of the Yangtze River and rely on the 3C "and 3S" plans to include the strategic channels between Asia and Africa, the five strategic – of the Strait of Dover, Gibraltar, Cape of Good Hope, Alexander and Singapore are under British control. Not only that, Britain also tried to block international trade channels in other countries, such as the military occupation of allied Russia and cutting off Russia's way out to Central Asia and North Africa. When the United States in the late 19th century to the early 20th century, is committed to establishing and maintaining the Atlantic escort system, to ensure that the smooth channel of the waters, and has swallowed Hawaii and occupied the Panama Canal, controlled the important maritime strongholds in the Caribbean and the Pacific region, to realize the connection of the Pacific and the Pacific, the strategic sphere of influence. In World War I, the United States seized the regional maritime rights that originally belonged to Japan and realizing strategic to the entire Pacific Ocean [28, p. 49]. The Spanish navigator, the strategist Hernando Cortes, 1485– 547, once declared: "Whoever controls the passage between the oceans can become the master of the world" [27, p. 97]. In the first stage of globalization, the western powers with the help of strong maritime military forces for and control the global strategic channel and important strongholds, obtain and consolidate their dominance in international logistics and trade, and through huge profits in global trade, strengthen the advantages of Marine military forces, further enhance the protection and control ability of strategic channel and maritime routes, constitute the closed cycle of Marine trade and naval forces. As Mahan pointed out, "sea rights are first subordinate to business, and commerce moves along the most convenient route. Subsequently, control and then promotes and protects trade." But the ownership of the dominant maritime power does not lie in the size of the merchant ships owned by a country, but in whether the country can

maintain the security and support the maritime path of a prosperous sea with its comprehensive national strength [29, p. 55].

After two world wars, the capitalist countries in western Europe by the war and colonial liberation movement, political and economic strength and international status generally decline, and the United States not only local almost no gunfire, also in the war across the ocean, economic and military strength increased, become the top power, the western world began to form a capitalist camp led by the United States. At the same time, at the other end of the world, the power of the Soviet Union was gradually strong and its international status was greatly improved, becoming the only big country in the world that could compete with the United States, and established a socialist camp led by the Soviet Union. With the "Iron curtain Speech" and the introduction of "Truman", the two camps opened the "Cold War" and the world stage began to stage hegemonism and powerful politics. From the late 1980 s to the early 1990s, with the upheaval in Eastern Europe, the dissolution of the Soviet Union and the official dissolution of the Warsaw Pact Organization, the "Cold War" that lasted nearly half a century, the Soviet Union in the two poles no longer existed, while the other pole became increasingly stronger, and the global military and political pattern turned to the dominant of the United States. Despite the Cold War, economic globalization still advanced rapidly under the new international order established after World War II. In 1948, the US lead was known as the Marshall Plan (The Marshall Plan's European Renaissance Plan (Europe Recovery Program) was launched, and 18 Western European countries, including the UK, France, established the Organization for European Economic Cooperation (OEEC) to ensure that the Member States implemented the Marshall Plan to jointly promote European economic cooperation and rejuvenation and development, then renamed the Organization for Economic Cooperation and Development (OECD). During the same time, the Soviet Union unveiled the Molotov Plan, considered an "alternative" for Marshall's plan in Eastern Europe, as the Commission for Economic Mutual Aid (COMECON). The Marshall plan played an important role in boosting North America and Europe, but the recovery of Eastern European countries involved in the Molotov plan was much slower. The United States, through the Marshall Plan, has actually established its leadership in this stage of economic globalization. After the end of the "Cold

War", the United States became the world's only superpower, and with the support of dollar dominance and strong military forces, it has an unparalleled dominance in this round of economic globalization.

Although this period of economic globalization was early promoted by western developed countries such as Europe, Asia, Africa, Latin America and other people won the war against aggression and imperialism and achieved national independence and national liberation, countries also embarked on the road of economic development and actively integrate into the global economic system. First, some Asian countries and regions have not only undertaken industrial transfer and the development of export-oriented economy, not only rapid development, but also made a great contribution to economic globalization. After that, more and more countries and regions around the world have begun to actively participate in and actively promote economic globalization, and they have obtained opportunities for local economic revitalization and development. In 2007, the total global FDI has reached 1430 billion dollars, spread across developed economies and developing countries (table 2.1). Total global imports and exports reached 1.40 billion dollars and 1.38 billion dollars, respectively, more than 40 times that of that in 1970, with developing economies reaching around 40 %. With the deepening of economic globalization, a large number of emerging market countries and regions, including BRICS countries, have developed rapidly and become an important driving force for global economic growth.

Table 2.1— Global FDI total and regional distribution in 2007, billions of dollars [29, p. 25]

Region	Amount of investment	Proportion
The whole world	14300	100.0 %
Developed economies	7120	49.8 %
EU	3040	21.3 %
Other developed areas of Europe	300	2.1 %
North America	3000	21.0 %
Other developed economies	790	5.5 %
Developing country	6710	46.9 %
Africa	420	2.9 %
Latin America and the Caribbean	1510	10.6 %
Asia	4760	33.3 %
Economy in transition	470	3.3 %

In addition, the resources of international logistics at this stage moves more from relying on hegemonic means to market means. Although there are inevitable forces of mother countries behind it, the governance structure has begun to be reflected as a relationship under market competition.

More than 90 % of the world 's international trade traffic is borne by sea, most of which are on the busiest trunk routes, such as the three major trans-Pacific, east-west, trans-Atlantic and Asia-Europe accounting for about 40 % of the world' s total international container volume. The hub ports located on these main routes have irreplaceable strategic value and have an important impact on the regional logistics cost and efficiency, such as Singapore Port at the intersection of the Asia-Europe routes and the north-south routes, Shanghai and Hong Kong ports starting from the cross-Pacific routes. Especially under the trend of ships, the number of route port is relatively reduced, the geographical location of the hub and the scarcity of resources, become the key control point in the whole international logistics network, multinational companies have capital as the link, participate in the construction and operation of the hub port, to better control and use resources, to guarantee the efficient and smooth operation of international logistics and international trade. Since the 1980s, the global port industry has started the external expansion process after privatization, but large-scale overseas mergers and acquisitions were mainly launched in the late 20th century, with container terminals with the highest degree of marketization, commercialization and the most concentrated field of private capital intervention. Between 1998 and 2007, there were 905 international mergers and acquisitions in the global port field, with a trading amount of nearly 60 billion yuan, accounting for nearly 90 % of the global port acquisition transactions between 1989–2007, as shown in table 2.2. As of 2007, the global top 10. The container throughput of large port operators accounts for more than 60 % of the global total [33, p. 29].

International shipping enterprises are also the main operators of port overseas mergers and acquisitions, usually through setting up a special wharf management company for port investment, such as Maersk's A.P. Muller, cosco group (now China sea group) of COSCO Pacific, the purpose of its investment in construction wharf mainly is not

management wharf, but as a link, establish strategic cooperative relations with related ports, through the layout of its global route network, ensure the use of the fleet.

Table 2.2 – Number and transaction amount of international port M&A events [33, p. 30]

Time	Quantity	Transaction amount(billions of dollars)
1989	16	17.97
1990	7	0.46
1991	34	16.48
1992	21	4.67
1993	39	7.79
1994	28	5.82
1995	36	2.67
1996	46	6.43
1997	45	19.36
1998	2	15.32
1999	71	36.84
2000	80	19.91
2001	105	22.39
2002	68	30.47
2003	84	8.76
2004	81	33.82
2005	88	103.15
2006	117	248.46
2007	139	64.94

Mineral resources are an important energy and raw material for industrial production. Due to the extremely uneven distribution of global natural resources, the differences in resource endowment are also one of the important driving forces for promoting economic globalization. In some countries and regions with rich mineral resources reserves, resource export has become the lifeline of the lifeblood of the national economy, while others with poor or structural shortage highly rely on obtaining resources from overseas, especially strategic resources such as oil, natural gas, metal and non-metallic minerals. In order to ensure the safe and economic efficiency of resource supply, some major resource exporting and input countries want the relevant resource transport channels and hubs to be under their own control, and carry out investment and construction of logistics bases. Japan's strategic layout in this regard has the most typical significance. After the Second World War, the

rapid development of Japan's economy produced an increasingly strong demand for resources. After becoming the world's second largest economy in the world in the 1970s, it became the world's third largest consumer of mineral resources. However, Japan is a country with poor mineral resources. Its huge resource consumption is highly dependent on imports. It is the world's largest importer of natural gas, the second largest importer of coal, iron ore and copper mines and the third largest oil importer.

In order to ensure the safety of resource supply, Japan has formulated a clear strategy to build an overseas mining empire, among which the output of oil and gas and coal equity is close to 30 % and 60 % of the domestic consumption respectively, and the output of iron ore, zinc and nickel is basically to the domestic consumption [31, p. 20]. In order to successfully return to these overseas rights and interests, Japan has not only formulated and improved laws and regulations, actively carried out economic diplomacy, and strengthened bilateral multilateral cooperation, but also increased investment in important ports, railways and other logistics infrastructure in resource-exporting countries. For example, when Japan signed joint development contracts with Australia, Brazil and other iron ore production countries, it simultaneously plans and builds transportation infrastructure such as special ore transportation railways and ports, large special ships and combined ships for sea transportation, as well as a huge logistics system supporting Linhai iron and steel enterprises. To this end, Japan launched the third steel industry plan, forming a [25, p. 13] of official and civilian cooperation and supporting industry linkage system jointly participating in the planning shipbuilding, steel industry, shipbuilding industry, commercial, government departments and private financial institutions [32, p. 84]. At the same time, Japan has also formulated some other policies in maintaining the safety of strategic material reserves and Marine energy transportation channels, such as stipulating the import and transportation of strategic materials related to the lifeblood of the national economy or giving priority to the use of national wheel transportation. Japan also protects for shipping companies through subsidies, low-interest loans and tax breaks to their business to renting their fleet [41, p. 584]. Not only Japan, many other countries also attach great importance to ensuring the resources of the transportation of overseas logistics infrastructure investment, and some resource development enterprise groups take these investment as supporting service

industry, such as Brazilian iron ore giant Vale, China's three oil companies, are on the global scale port and other logistics infrastructure layout, mainly serve the group's main business logistics guarantee.

Since the 21st century, emerging economies represented by China, India and other BRICS countries have deeply participated in globalization, and achieved rapid economic development and significant improvement in national strength. It has not only changed the global economic and trade pattern, but also shaken the absolute dominant position of western countries to a certain extent. From 2000 to 2010, the average annual economic growth rate of emerging economies exceeded 6 %, and the overall BRICS countries exceeded 8 %, among which China exceeded 10 %, India exceeded 7 %, and Russia exceeded 6 %, much higher than the average annual growth rate of 2.6 % and about 4.1 % [12, p. 164]. In 2010, the total export of emerging economies has accounted for 42 % of the world, up by 22 percentage points from 1970, and foreign exchange reserves accounted for more than 2 / 3 of the world. BRICS countries, accounting for nearly 30 % of the world land area and about 42 % of the population, have accounted for about 18 % and 15 % of the world respectively. BRICS contribution to world economic growth rose from 0.6 % to 0.7 %, from 1990 to 2010, IMF estimates

Over 60 %, while the developed countries fell from 88.6 % to about 30 % in the same period [34, p. 153], emerging economies have become the locomotive for global economic growth. In 2008, the international financial crisis hit the global economy, the proportion of international trade in global GDP declined, the world economic growth was weak, Some countries and regions blamed the global problems on globalization, calling it the root cause of blocked world development. In this context, "black swan" incidents such as Brexit and Italian referendum on constitutional amendment occurred successively, and "anti-globalization" trends and actions such as trade protectionism and political isolationism began to become popular. Especially in 2016 Trump won the election in the United States and became president, put forward the slogan of "make America become great again", the implementation of the "global contraction, America priority" economic policy, shows that the United States as the most powerful country in the world, has shifted from

multilateralism to unilateralism, regain trade protectionism, for the world economy rapid recovery and long-term stable growth.

Like many countries, China has seized the historical opportunity of economic globalization in the past few decades. Through unremitting efforts, it has paid a high cost and achieved considerable economic and social development. In 2010, it became the world's second largest economy and is currently the world's largest trader in goods. China has made great contributions to globalization and world economic growth. It is also deeply aware that globalization plays an important role in its own economic development and the common progress of mankind, and is a strong driving force for world economic growth. The historical trend of economic globalization is irreversible, but we should also realize that this is a "double-edged sword". While promoting the development of human society, it also brings many problems and challenges. All countries are sharing the interests of "one prosperity" and sharing the risk of "one damage". At the end of 2019, after the COVID-19 outbreak first erupted in China, less than three months after the epidemic has spread around the world, which not only caused great harm to life and health, but also had a huge impact on the world economy. The existing global economic development model has been questioned, and some people began to worry about the prospect of globalization. However, since the problem of world development is not limited to a country and cannot be solved by the power of one country, it needs joint cooperation by all countries. In line with the history of the responsible power, China issued the initiative of building a community with a shared future for mankind, put forward the "China plan" to improve global governance, is willing to cooperate with the world, lead the economic globalization towards more open, inclusive, inclusive, balanced and win-win development, obtain the broad recognition of the international community [43, p. 59].

Since the 1960s, developing countries have begun to accelerate their integration into economic globalization through undertaking industrial transfer from developed countries such as Europe, America and Japan, and have continuously increased their share in international commodity trade. In 2016, the developing countries reached 44.0 % and 47.2 %, respectively, getting closer to the developed countries. However, as an important carrier of commodity trade, international logistics has been dominated by developed

countries, among which the EU and the United States are the top two global exporters of transportation services (regions), 43.4 % in 2019 and 9.1 % respectively. Asia, mainly developing countries, trade in goods accounted for 35.5 % in 2018, but only 24.7 % (figure 2.1), Among them, China, the world's largest exporter of goods, exports trade in transportation services only accounts for 4.2 % of the world, and about 2 / 3 of the export goods are carried by other countries.

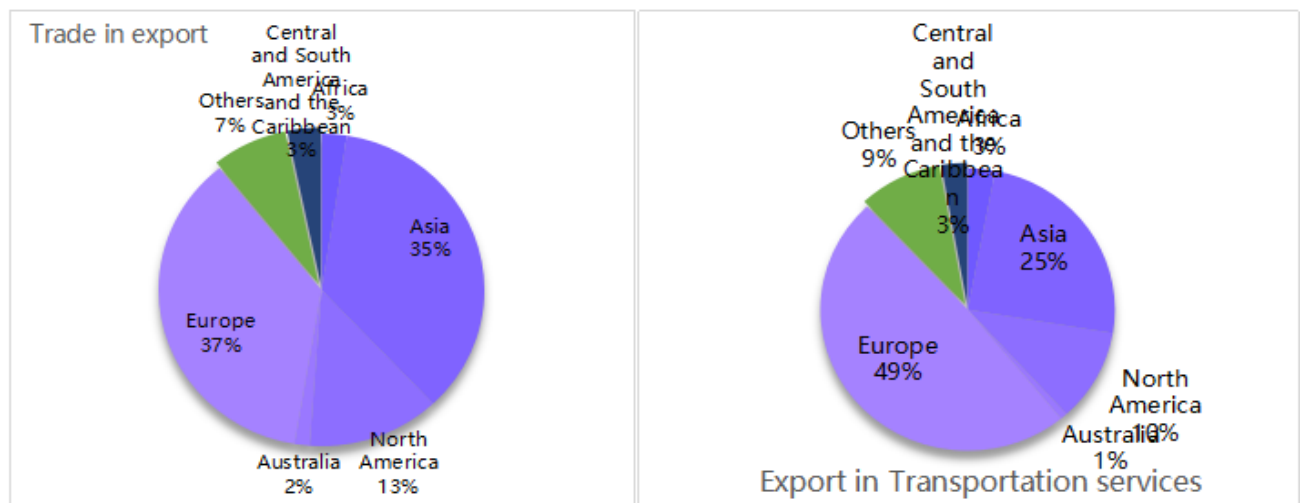


Figure 2.1 – Proportion of exports of goods and transport services by region in 2019
[37, p. 65]

In the first two stages of globalization, the dominant power of international logistics resources and market was transferred from dominant countries to transnational capital, but the role of national strength in the global logistics pattern still exists, and even further strengthened. As Beibei pointed out, "the international competition in economic globalization, is not the classical economy demonstration free trade rationality of the assumption of 'atomic' manufacturers, but in a certain geopolitical pattern with different" nationality businesses, behind completely different' mother power, make it in global competition is very different or even very different power in market power gap". With emerging economies rising relatively high in globalization, the international logistics pattern dominated by "parent powers" is also changing. The United Nations Conference on Trade and Development (UNCTAD) noted that "a new trade geography is forming and reshaping the global economy. This new geographical landscape demonstrates the

increasingly important position of developing countries or countries in the southern hemisphere". This change has appeared in the port dock, although developed countries market position is still strong, but developing countries rise is very obvious, especially in market share growth, the world's top 10 dock operation companies belong to the developed countries, market share of 32.2 %, the other 4 companies are China respectively, Hong Kong and UAE 1, the total market share reached 37.3 %. It can be seen that this round of adjustment of the international logistics governance structure is being deeply affected by the rise of emerging economies [13, p. 106].

Economic globalization carries on the geographical space of various countries, International logistics is a means of realizing the transnational spatial displacement of goods, More spatial features, Therefore, the Spatial pattern is an important dimension to analyze the influencing factors of international logistics in economic globalization, This paper defines this dimension as follows: the spatial pattern of economic globalization mainly refers to the global spatial form, investment and trade pattern formed based on the positioning of countries and regions in the global industrial division, the links occupied in the international supply chain and its geographical location; The spatial pattern of international logistics mainly refers to the spatial distribution and form of logistics channels, main hub nodes and hub trunk branch network determined by the flow of material flow.

The spatial pattern of economic globalization affects the formation and evolution of the international spatial pattern of logistics, Countries and regions undertake their respective division of labor in the global production network based on resource endowment and comparative advantages, Trade with each other, For a transnational flow of goods, It determines the flow of materials, Then it determines the spatial pattern of international logistics; In turn, the spatial pattern of international logistics will also affect the industrial division of labor and trade cooperation of relevant countries, According to the location theory in economic geography, Countries and regions with transportation or logistics location advantages tend to obtain more international investment, Domestic industries can also build a stronger international competitiveness based on logistics cost and efficiency advantages, The global investment layout of multinational companies often rely on the optimal international logistics spatial pattern, To meet the requirements of transnational

production organization and marketing and sales. Therefore, international logistics and economic globalization interact and interact in the dimension of spatial pattern.

The Great Navigation has opened the door of economic globalization and opened the process of foreign aggression and colonial expansion of the western powers. Colonies of Asia, Africa and America became the supply of raw materials for European masters, as William Stanley Jevons describes: "North America and Russian plains are our corn fields, Canada and the Baltic are our forest areas, Australia is our pasture, Peru is our silver mine, South Africa and Australia are our gold mines, India and China are our tea gardens, the East Indies are our sugar cane, coffee, spice plantations, and the southern US is our cotton plantation". European countries, on the other hand, have vigorously developed the secondary and tertiary industries, realized industrial restructuring, and dumped their products to the colonies through monopoly trade, expanding the international market. For example, the cotton textile industry in the UK was severely squeezed by Indian products. After India was completely conquered, it greatly increased the import tariff of cotton textiles and significantly reduced the cotton import tariff, which made the market advantage of British products prominent, resulting in a large number of Indian handmade textile owners went bankrupt and the market was completely occupied. In general, the spatial pattern of the first stage of economic globalization is established on the production and trade network between suzerainty and colonies as the main form, the European powers not only plunder material wealth from the colonies, but also use various means to prohibit or suppress the colonial development and competitive industries, implement trade monopoly, ensure the national economic development and comprehensive national strength. During this period, Europe is the focus of world economic development, and international trade accounts for more than 2/3 of the total global international trade (table 2.3), becoming the most comprehensive and competitive region of economic globalization.

Economic globalization has always been accompanied by industrial transfer and has undergone (including ongoing). The first international industrial transfer occurred around the late 18th century to the middle of the 19th century, and the path is from the UK to East to mainland Europe and west to mainland North America. Before the middle of the 19th century, the UK was a "world factory", accounting for about 20 % of the world GDP, coal

and steel production of 50 % and 53 % respectively, 2 % of the global population controlled 1/3 to 1/2 of world industrial production and 1/5 of world trade to 1/4. In the early 19th century, as the industrial Revolution was introduced from Europe to North America, the United States began industrialization, vigorously introduced European science and technology, encouraging innovation and invention, machines replaced handwork, the banking industry provided loans, and a large amount of money was invested into industry and commerce.

Table 2.3 – Structure of international trade in the first half of the 19th century [28, p. 47]

Region	Amount of exports (%)	Amount of imports (%)	Total export-import volume (%)
Europe	64.2	69.6	66.9
North America	11.7	7.4	8.5
Latin America	6.2	4.6	5.4
Asia	12.4	13.4	12.9
Africa	2.2	1.5	1.9
Oceanica	3.3	3.5	3.4
Total	100	100	100

In the first half of the 19th century, the American territory gradually expanded from the Atlantic coast to the Pacific coast, with the transition of a rural Republic to an urbanized country after the end of the Civil War. Beginning in the 1870s, the focus of world economic growth gradually shifted from Europe on the east coast of the Atlantic to North America on the west coast of the Atlantic. In 1860, the US industrial production ranked fourth in the world, the total output value of 1.91 billion dollars, by 1900, the world first, the total output value of 9.50 billion dollars, more than half of the gross industrial product of Europe, near the sum of the three European countries of the UK, Germany and France (table 2.4), becoming the largest industrialized country in the world. During this period, the United States and North America have become a global Ji's fastest growing area became a new "world factory" and economic center.

Table 2.4 – Industrial gross output value of industries in 19th century [33, p. 27]

Country	1860	1900
England	28.03	42.63
France	20.92	29.00
Germany	19.95	33.57
America	19.07	94.98

Before the era of great navigation, the international trade and logistics network, including the western Pacific, Indian and Mediterranean regions, covering Eurasia and Africa, had taken formed. The transportation and trade circle in the western Pacific starts from Japan through the Korean peninsula, China, Southeast Asia, connecting with the Indian Asia and Europe, including the Maritime Silk Road known to descend Zheng He to the Western Sea as far as East Africa and the Red Sea And Southwest China Land Road Silk Road [37, p. 64]. Europe formed a trade zone centered on the Mediterranean, and Indian Ocean goods were transported overland to the Levant region along the Mediterranean and transferred to across Europe, and Western Nordic traders also established the active maritime trade network in the Baltic and North Sea region. The Indian Ocean trade network takes the Persian Gulf, Red Sea and Arabian Peninsula as the northern edge, with South Asia, Southeast Asia and East Africa as the two wings. Maritime traffic will connect the southwest "forest" areas of Kenya to Madagascar along the Indian Ocean, the Horn of Africa to the middle "desert" areas of the Indus basin and the "forest" areas in the southeast of India to Indonesia, carrying commercial exchanges, cultural exchanges and immigration activities [39, p. 4]. The Great Navigation opened new routes across the Atlantic to the Americas, detour the southernmost tip of Africa to India, and a global route from the east coast around the southern end of South America and back across the Pacific Ocean to the east coast of the Atlantic Ocean. New routes will connect Europe, Asia, Africa and north and South America, built the global route network, also opened the door of economic globalization, the Mediterranean trade area began to expand, not only covered the Atlantic east coast and the Indian Ocean, also extended to the Atlantic west coast and

the Pacific coast, established the Unicom global maritime trade network, promote the change of the international logistics space pattern.

With the expansion of overseas colonies, the scale of Asian trade with Africa, and the establishment of commercial links with the Americas, the European commercial routes and commercial centers gradually moved from the Mediterranean to the Atlantic coast, the traditional Italian commercial cities and the ports of the Levant declined, and Lisbon, Antwerp and London increasingly prospered. These port cities, located on the main international shipping routes, have complete hardware facilities such as wharf, anchorage, berths, deep water waterway, collection and distribution network, bring together shipping finance, trade, and information, and become the international shipping center. After the mid of the 18th century, Britain became a world factory, where North America supplied its raw materials and the product sales market, the maritime access center between Britain and North America began to move from Boston to New York, and a new international shipping center emerged on North America on the west bank of the Atlantic Ocean. In the far East, China 's trade and logistics centers were moving from Guangzhou to Shanghai, which by 1870 had accounted for 63.8 % of China' s trade. In 1869 and 1914, the Suez Canal and the Panama Canal opened successively, connecting the Mediterranean and Indian Ocean, Atlantic and Pacific respectively, establishing more convenient routes for international logistics, making the trade links between Europe and Asia and America closer and busy, and further promoting economic globalization [26, p. 27].

During the four years of Marshall's implementation, Western European countries received 13.15 billion dollars in various forms of U. S. finance, technology and equipment, and 90 % were free gifts and 10 % were loans. This period also became the fastest economic growth period in European history, with industrial production growing by 35 % and agricultural production exceeding the pre-World War II levels. Canada, also in North America, switched to buying large amounts of American goods, solving the commodity surplus resulting from the rapid post-war economic boom. By implementing the Marshall Plan, Western Europe and North America were revitalized and further developed, with closer economic and trade ties. In contrast, the Molotov plan to strengthen the Soviet economy and eastern Europe, but restricted the economic exchanges between eastern

Europe and western, some people believe that the plan to build a socialist family as the slogan, forced "international division of labor", the eastern Europe into the Soviet raw material suppliers and commodity sales market, caused the abnormal development of the economies in eastern Europe. In short, in the early stage of the second stage of economic globalization, the economic development of eastern Europe fell significantly behind Western Europe and became a closed economic group free from the world market. The United States in the rapid development of military industry in the two world wars, the manufacturing system is increasingly powerful, and with the help of Marshall plan, occupied the European market, support the domestic new industrial system quickly established and constantly improve, appeared the post-war economic prosperity, become the world manufacturing overlord, especially in the fields of automobiles, steel and aircraft have incomparable advantages. In 1953, the proportion of US manufacturing added value reached a historic peak of 28.3 %. As labor costs rise, the United States began to move low-end industries such as textile, consumer tables, simple machinery, and metallurgical industry. Later, with the rise of the third scientific and technological revolution, the United States began to vigorously develop high-tech industries and other electronic industries, and the transfer process of manufacturing industry accelerated. After the world economic crisis of the 1970s and 1980s, the United States gradually completed the transfer of manufacturing industry and the construction of a new industrial system mainly on information technology and financial services. At the same time, a large number of cheap industrial consumer goods manufactured by overseas production bases successfully suppressed domestic inflation. In the second stage of economic globalization, the United States relies on the absolute advantages of the dollar hegemony and the fields of technology and finance, controls the high end of the value chain of the global manufacturing industry, and also occupies the dominant position in the international resource allocation and the global market for a quite long time.

After World War II, Japan carried out thorough social reform, relying on the original talents and technological foundation, and restoration and reconstruction with the financial support of the US, especially during the Korean War, obtaining rapid economic development through the development of the military industry. Since then, Japan's economy

has entered a stage of rapid development, surpassing the federal Germany to become the world's second economic power after the United States. Although the later "oil crisis" and the "square agreement" hit the Japanese economy and plunged into a slow growth cycle, the already established strong industrial system and manufacturing international competitiveness still gave Japan a pivotal position in the East Asian production network. Since the 1960s, Asia, Hong Kong, Taiwan, Singapore and South Korea seized the opportunity of western developed countries in Europe and the rapid expansion, began to implement the export-oriented strategy, attract a lot of foreign capital and technology, with location conditions and labor cost advantage, quickly established the industrial system, realized the economic leap, known as the "Asian four dragons" (NIE). Since the 1990s, Chinese mainland has accelerated the pace of reform and opening up, undertaken international industrial transfer on a large scale, attracted foreign capital, expanded export, and rapidly became the center of global manufacturing. In 2001, China officially joined WTO, and a big step forward in the process of integrating into economic globalization. The second stage of economic globalization has formed the three international production network, in East Asia and even the world, whether the completeness of the industrial system, or production capacity and production scale, China is second to none, it can be said that the production network in East Asia is China as the main body, and the production network in the global industrial chain and supply chain status has been significantly improved in the current stage of globalization [37, p. 64].

In the second stage of economic globalization, the changes in the international logistics spatial pattern are closely related to the global industrial transfer. The first industrial transfer after World War II took place in the 1950s, mainly under the help of the Marshall plan, the American steel, textile and other resources and labor-intensive industries to Germany, Japan and other countries, but the overall scale is relatively small, from the change of international trade and logistics scale, there has not been a significant rise. The second and third industrial transfers all occur between developed and developing countries and regions, covering labour, capital, and general technology-intensive industries. Compared with the first industrial transfer, the two industrial transfers are larger in scale, involving a wider range, and have also brought about the rapid growth of international trade

volume and logistics physical volume. In 1948, global commodity trade exports were only US 58.5 billion dollars, in 2008, it increased to 16.2 trillion dollars (figure 2.2), before the late 1960s, the global trade growth was relatively flat, the late 1960s to the mid-1990s, the global trade in goods growth accelerated significantly, into the 21st century, growth further accelerated and continued until the outbreak of the international financial crisis in 2008. With the rapid growth of international trade, the scale of international logistics demand has expanded significantly. As the main logistics mode of international trade, the market is becoming increasingly prosperous. In 1955, global ocean shipments carried only about 8 million tons, having reached 8.23 billion tons by 2008, an increase of 1,000 times. With the rapid growth of international trade, the scale of international logistics demand has expanded significantly. As the main logistics mode of international trade, the market is becoming increasingly prosperous. In 1955, global ocean shipments carried only about 8 million tons, having reached 8.23 billion tons by 2008, an increase of 1000 times [37, p. 65].



Figure 2.2 – Global trade in merchandise exports in 1960–2019 trillion dollars [37, p. 64]

In the second stage of economic globalization, the total international trade in goods has increased by nearly 300 times, greatly promoting the development of the global economy, but the distribution is unbalanced. Before 2000, the total import and export of developed economies accounting for less than 1/6 of the world's population accounted for 2/3 of the world, and the developing economies remained in a weak position in globalization.

However, the second stage of economic globalization also created unprecedented opportunities for developing economies, with an increasing share of international trade, increasing total imports and exports from 23.8 % and 28.7 % in 1970 to 39.4 % and 44.6 % in 2008 . In particular, Asia and Africa, with the most developing countries and regions, have performed more prominently. In 1970, the total import and export ratio of the two continents was only 18.6 % and 18.9 %, respectively, rising to 38.7 % and 32.8 % by 2008, among which East Asia, South-East Asia, West Asia and North Africa have become important international commodity export regions, representing 19.0 %, 6.3 % and 9.1 % [13, p. 112], respectively. As of 2008, the export volume of goods in East Asia has surpassed North America, becoming the second largest commodity export area in the world, and the import volume of goods is also close to North America.

Since the international financial crisis in 2008, a new wave of building free trade zones has emerged worldwide, forming a free trade zone network covering almost all countries, involving many fields and overlapping areas, and more than 60 % of international trade has been completed through regional free trade agreements. Based on the free trade agreement, adjust their own economic and trade policies and development strategy, deepen regional economic cooperation, regional economic integration has become a new growth point of global economic development, McKinsey global research research shows that the regional trade in 2013–2017 global trade in goods increased 2.7 percentage points, including the Asian and the European Union growth is particularly rapid, the global value chain shows a regional strengthening, weakened global properties [41, p. 583]. From the action of different economies, the United States and Europe speed up the process of regional economic and trade cooperation, developed economies led regional economic integration trend more obvious, developing countries are actively participate in regional economic integration, mutual share of global goods trade from 1995 to 20 % in 2016, accelerate the development of the free trade zone, the Asia-Pacific region has become a new hot spot of free trade zone construction, the countries around the Asia-Pacific economic cooperation is increasingly fierce. With the accelerating construction process of free trade zone, expanding cooperation scope and deepening integration, domestic trade and investment liberalization and trade structure optimization, the flow and combination direction of capital, technology,

services and other production factors are changing, having a significant influence on global economic and trade rules and world economic structure, the global supply chain is also reallocating resources according to the new production system and market pattern [42, p. 43].

After the financial crisis in 2008, the world is facing a new round of industrial transfer. First, due to the rise of labor costs and land, resources, environmental protection, China's traditional manufacturing advantage declined, and Southeast Asia, South Asia and other regions labor resources rich and low cost, relevant countries implement preferential policies to expand the outside world, attract international investment, and China also under the "One Belt And One Road" initiative, actively seek capacity cooperation with countries and regions along the Belt and Road, objectively formed some labor-intensive industries, resource industries from China to these regions, and some from the eastern coastal areas to inland industries. Secondly, due to the widespread application of new technologies such as automation, robot and artificial intelligence, "machine replacement people" reduced the proportion of labor costs in production costs, and some high-end manufacturing industries with high technical content and Europe and America and the US as the main sales markets returned to developed countries such as the United States, Europe and Japan. Thirdly, strengthening regional trade interaction has enhanced the level of industrial chain cooperation and industrial supporting capacity within the region. In North America, the US-Canada Agreement aims to reshape the supply chain and production system with the US-dominated North American economic circle as the core; In Europe, Germany proposes to increase the proportion of manufacturing in its total economy from 23 % to over 25 %, which means improving the local production capacity of industrial products; in Asia, China and ASEAN 10 + 620 cooperation to expand the East Asia supply chain system dominated by China, ASEAN, South Korea and other Asian countries. In general, this round of industrial transfer has strengthened the three production networks of Europe, North America and Asia, improved their independence, internal division of labor further refined and closer ties.

At the end of 2019, the first COVID-19 outbreak occurred in China, causing a global supply chain reaction and discussions that some industries would move from China to other

countries to spread risks. In fact, the discussion on the disintegration and restructuring of the global supply chain has been concerned before, as the China-US trade war has escalated, there are concerns that China will lose its global manufacturing hub, but with different voices [43, p. 60].

In fact, China in the process of deep participation in economic globalization, has evolved a new mode of global supply chain, namely in the large market to form a high degree of professional division of labor, with the division of labor, the supply chain level of the supply chain, build a supply chain network, and the network for new enterprises to create a complete industrial ecology, that is often said that China has great advantages of complete industry. In this supply chain network, each node is highly dependent on the entire network, and the upstream and downstream connection will not be easily cut off unless the network moves out as a whole. It takes time for the overall move out of the network, and it is difficult to find a regional space that can undertake such a scale of network. The rise in supply chain costs caused by network splitting is unbearable for enterprises, and can not even offset the rising tariff costs. Therefore, it is difficult to judge how the global supply chain evolves in the future and what economic globalization presents in the future. As the epidemic spread worldwide, many countries have taken severe controls, factory shutdown and shop shutdown,

Many airports and ports were closed, flights suspended, routes suspended, global production, consumption, trade and logistics are involved, and almost no supply chain node is safe and reliable. The epidemic continues in various countries, while China was the first to control the domestic epidemic and resume production, providing strong support for the global fight against the epidemic and economic and social operation, showing the resilience and resilience of China's production network and supply chain system. And in the outbreak, China 's production, circulation and logistics enterprises to fight the epidemic, ensure material supply, jointly carried out a global large-scale practice, from the early epidemic global procurement prevention supplies supply, to the epidemic spread, in the international supply chain interruption, logistics shutdown, relying on their own production and logistics organization ability, global resource allocation capacity, provide foreign aid and product

supply, also let the world see China's responsibility and leading, North American economic circle as the core of the supply chain and production system;

Since the 1960s, the global trade in goods has entered a cycle of rapid expansion period, although fluctuating, but generally showed a high growth trend. Entering the third stage of globalization, although international trade in goods also showed a continued growth trend. Total exports increased from 12.1 trillion dollars in 2006 to 19.5 trillion dollars in 2018, with an average annual growth of 4.0 % , there were two major fluctuations in less than 20 years, respectively in 2009 and 2015, when global export volume decreased by 22.3 % and 12.9 % respectively. During the same period, the international maritime volume also increased rapidly, with the loading volume increased by the 7.70 billion tons grew to 11.00 billion tons, with an average annual increase of 3.0 %, but much less than the trade volume (figure 2.3). Because international logistics shows the physical quantity, not affected by commodity prices, so we can judge that although in recent years, global economic and trade cooperation affected by trade unilateralism, protectionism and "counter globalization" wave, economic globalization is still in the forward twists and turns, the scale of trade between countries and regions is still further growing, but the risk and uncertainty are also increasing significantly.

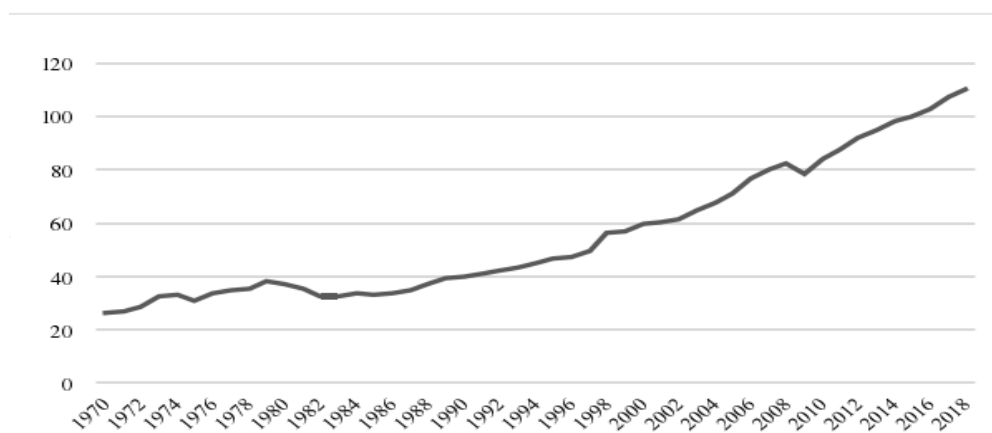


Figure 2.3 – Global seaborne goods loaded in 1970-2018 [45, p. 40]

Global rise of a new round of free trade zone construction boom will undoubtedly promote regional trade liberalization, investment facilitation, Europe, North America, east

Asia three independent production network independence will further improve, that is to say, some originally global resources, division of labor and cooperation of industry, or the industrial chain, supply chain on the basis of regional cooperation, reconstruction, international traffic in the regional traffic will therefore grow rapidly. However, since the official signing of many new free trade agreements has been in the past three years, the effect has not been fully shown, but in terms of the development of regional logistics, it has shown a higher speed than the overall growth rate. According to Danish Ship Financing Company, the proportion of maritime container goods imports in Europe increased from 60 % in 2007 to 65 % of 2015 in Europe, and "it is believed that Europe is moving to purchasing goods within the region and near the terminal markets." According to UNCTAD estimates, between 2007 and 2014, container trade grew rapidly on non-major routes, and the three major routes of trans-Pacific, Asia-Atlantic increased only by 9.0 %, while the total container volume of non-major routes such as regional routes, secondary East-West, South-South and North-South routes increased by 45 % in the same period. From 2018 to 2014 to 2018. The sharp decline in regional growth in route trade in 2018 was mainly due to negative [45, p. 14] growth in internal trade routes in both West Asia-South Asia and Latin America.

In the middle and late 18th century, Europe ushered in the industrial revolution and entered the steam era and electrical era. The machinery industry replaced the handicraft industry, the productivity was greatly developed and the production efficiency was improved hundreds of hundred times. Suddenly expanded production capacity to create a large number of goods, far beyond the European domestic market capacity, the bourgeoisie began to seek overseas commodity sales, navigation international trade routes carrying a large number of cheap, excess industrial products, break the national fence, flock to all over the world, formed the international division of labor and global market, promote the development of economic globalization. At the same time, the industrial revolution also significantly improved the maritime technology and military forces of European countries. Ships with better performance were designed and manufactured, and artillery technology was better used in naval warfare. The powerful naval fleet established to conquer and seize overseas colonies and provide economic sources for maintaining naval forces by

maintaining naval trade [46, p. 110]. It can be said that the development of science and technology is an indispensable support condition for opening up economic globalization, and the then European science and technology power also became the absolute master of this round of globalization. Directors and profits, such as Britain, as the forerunner of the industrial revolution, naturally took the lead in establishing the "world factory" and "global hegemony" status, more than half of the industrial products were sold overseas, and most of the raw materials needed for domestic production rely on foreign supply. By the middle and late 19th century, the United States had gradually emerged as the world's largest power, which was largely promoted by the Second Industrial Revolution. The increasing technological, economic and military strength also made the United States follow the economic globalization and gained more and more benefits.

Table 2.5 – The naval fleet of European powers in the 17th-19th century [47, p. 19]

time	Britain	France	Russia	Spain	Holland
1689	100	120	-	-	66
1739	124	50	30	34	49
1756	105	70	-	-	-
1779	90	63	40	48	20
1790	195	81	67	72	44
1815	214	80	40	25	-

During the Renaissance 14th period, the ancient Greek earth circle doctrine began to be discussed and accepted by more and more humanistic scholars. It was with this belief that many navigators embarked on the journey to open up a new path. The Portuguese combined astronomical observations with mapping technology to complete African coastal exploration and the opening of new Indian navigation routes. Thereafter, scientific research on navigation technology emerged and soon became international, with mathematicians and navigator publishing a number of works on geography, drawing, navigation and navigography.

The incoming compass from China was improved by the Europeans for navigation, and the understanding of the partial magnetic angle enabled humans to master more

accurately in the direction of navigation. European countries have also strengthened their support for science and technology education in the cause of navigation industry. For example, Portugal has established observatories and libraries, opened the world's earliest navigation schools in the world, brought together elite [47, p. 18] such as navigators, astronomers and meteorologists, and the UK has established the Greenwich Observatory to give accurate longitude instructions for maritime navigation. In short, the improvement of science and technology and the progress of geographical knowledge have made ocean navigation possible and created the necessary conditions for opening up new navigation routes for humankind.

The European shipbuilding industry has also developed rapidly in the 15th century. In 1440, Portugal built multi-gauge triangers suitable for nearshore navigation, creating vital conditions for the exploration of the unfamiliar coast. In 1595, the Netherlands invented the design of three-masted cargo ships known as "ships", with large loading, fast speed and good shipping capacity compared to small ships produced in Spain and Britain. In the mid-17th century, the Dutch shipbuilding industry has achieved highly mechanization, three times the British shipbuilding efficiency, the cost of more than 40 % low, and the crew was reduced through technological progress, and the total freight was also reduced, providing an important material guarantee [48, p. 240] for the development of world trade and becoming a maritime power.

In the 18th century, Europeans had elevated the shipbuilding and sailing technology to the extreme, laying the foundation for the revolutionary changes in navigation technology after the later Industrial Revolution [47, p. 18]. In 1807, American mechanical engineer R. Fulton designed the "Clermont" steamer with steam engines driving wheel dials, whose reliable performance established its status in international marine transport. In 1829, the Austrian Joseph Lessel invented the solid. The ship propellers gradually replaced the Ming wheel on ships and improved the efficiency of ship propulsion. In 1884, the British inventor C. Parsons designed a fuel-fueled steam turbine, which later became the main power unit for the ship. International shipping has made revolutionary changes due to the invention and continuous improvement of ships, greatly increasing traffic volume and increasing transportation speed, for example, the first ship took 3,000 tons of cargo from China to

Europe, and 120–130 days to transport 1000 tons of cargo with fast sailing, establishing in international trade [50, p. 27].

Decades after the Industrial Revolution, the first steam locomotive ran on tracks in the early 19th century, before the Stockton – Darlington Railway was built and put into operation, becoming the beginning of the modern railway transport industry. In the mid-and late 19th century, the US began building the Pacific Railway across the North American continent, and the east-west transportation line provided important support for the US to reclaim the vast western land and acquire the rich mineral resources on the West Coast, and made the east a processing and sales market for natural resources in the west. After the emergence of this new mode of transportation, tracks began between many ports and inland cities, such as Manchester and Liverpool in England, Tokyo and Yokohama in Japan, and these railways extending inland to the wharf significantly expanded the hinterland of the port, closely linking international maritime trade with the development of inland industrial cities. The first modern car was born in Germany at the end of the 19th century. In the early 20th century, the T cars based on mass demand and rural road conditions were recognized by the market. Thereafter, the American automobile production used the water production line technology and began the mass production [45, p. 126]. With the upgrading and improvement of the road network connecting the port, automobile transportation plays an increasingly prominent role in the port collection and distribution system, which greatly improves the efficiency of international logistics distribution and transfer. Since the early 20th century, the Wright brothers invented a fully controlled, powered and stalled aircraft test flight successfully, and a new way of transportation was born. Since then, Lockheed, Boeing and other aircraft development and manufacturing enterprises have been established. During World War II, aircraft had been transported with cross-ocean military materials, laying the foundation for post-war air transport to join the international logistics system of economic globalization.

In the middle of the 20th century, the world ushered in the third scientific and technological revolution, which is an information revolution involving information, new energy, new materials, biology, space, Marine technology and many other fields, is another

major leap in science and technology after the steam technology revolution and power technology revolution [50, p. 27].

The third scientific and technological revolution has promoted the changes in human society, economy, politics and culture, and made great changes in the way of social production and life, especially the traditional way of industrial organization. With the production of a series of emerging industries such as polymer synthesis industry, atomic energy industry, electronic industry, aerospace industry and the rapid upgrading of traditional industries, increasing technological content of products, complex production process, front-end research and design, back-end sales, the industrial chain has been greatly extended, the past international division of labor has been difficult to meet the requirements of modern industrial chain organization. At the same time, influenced by the scientific and technological revolution and the technological diffusion of globalization, the industrial system of many developing countries is gradually established and improved, no longer an agricultural country that can only provide primary raw materials, in the global industry, the role in the department began to change. In this context, the vertical professional division of labor in the industry has begun to be formed globally, the economic links between different countries and regions have become closer to the international supply chain, and the production efficiency and specialization level have also been greatly improved. In the third stage of globalization, the scientific and technological revolution has made a few economically developed countries such as Europe, the United States and Japan become capital (technology) intensive industrial countries, and the vast developing countries have become labor (land) intensive industrial countries, forming a more detailed division of labor within and between each other.

Although automatic devices have appeared and applied in the 18th century, before the mid-1960 s, most of the goods entered the international logistics process in a non-standardized scattered state, which is not convenient for mechanical operation. For even mechanical goods can be used, applicable to different operation methods and processes, the ports without corresponding facilities and equipment still need manual operation. Moreover, non-standardized cargo in sea transportation and land transport operation between factory warehouses and port terminals are more complex, resulting in high international logistics

cost, low efficiency, theft and personal injury. In 1966, containers entered the international shipping field, bringing revolutionary changes, a standardized, integrated, modern logistics system was established.

In addition, due to the safety and reliability of container transportation, and the transit time between goods and ships is greatly shortened, the insurance and financing expenses in international trade have also decreased rapidly, the capital turnover is significantly accelerated, the relationship between logistics and finance is closer, and the flow of goods and capital flow have become inseparable.

The influence of container transport has gone far beyond the field of logistics, which has profoundly changed the production and consumption pattern between various countries and regions, and has become a key factor in promoting the in-depth development of economic globalization. The Economist even commented: "Without containers, there will be no globalization." With the sharp decline in international logistics costs, more and more enterprises begin to move away from traditional industries and port cities to areas with comparative advantages of land and labor costs, many enterprises have started the process of transnational industrial layout and promoted the second and third global industrial transfer. After the completion of these two industrial transfers, the international pattern of international production and consumption has undergone great changes, forming a global industrial chain and a global market. The tiers of multinational enterprises spread around the world, and isolated factories in different countries and regions were integrated into the same production system to complete a production link of the final product, while many of the products traveled long distances, and their components often came from different countries. "In 1956, the world was full of small local manufacturers; by the end of the 20th century, the pure local market had almost disappeared" [51, p. 13]. It can be said that container transport greatly promoted the process of economic globalization, the reduction of international logistics costs, the improvement of time let enterprises and consumers have more choices, more and more enterprises to participate in the global competition, also share the global market, the lowest comprehensive production cost of countries and regions in this stage of globalization rise rapidly.

With the third industrial revolution on digital manufacturing, artificial intelligence, additive manufacturing and renewable energy, the world is opening an era of innovation. In April 2013, Germany took the lead in formally proposing the concept at the Hannover Industrial Expo of Industry 4.0, and the core aim was to take the lead in a new round of industrial revolution by improving the competitiveness of German industry. This concept is widely recognized, and other countries and some multinational enterprises have proposed similar strategies or development plans, such as "reindustrialization" in the US national strategy, GE-led "industrial Internet", Japan's "industrial revitalization" strategy, and "Made in China 2025" and "Internet +", etc. Industry 4.0, which represents the new round of industrial revolution, has become the common industrial development vision of many countries. Industry 4.0 corresponds to different stages of industrial development, among which, Industry 1.0 to 3.0 respectively correspond to the steam engine era, electrification era and informatization era of the three industrial revolution, while Industry 4.0 is the use of information technology to promote industrial reform, that is, the intelligent era. Since the beginning of the third industrial revolution, the development of computer, the Internet and other information technologies has been experienced for more than half a century, and these technologies have been widely used in various fields of production and life. Industry 4.0, marked by the application of Information Physics System (CPS), extends the "Internet of Things and Services" to the manufacturing field, and has a profound impact on the industrial organization form and its operation mode. Many jobs will be replaced by robots, and some labor-intensive industries will become technology and capital-intensive industries to further change the global industrial division of labor pattern. In addition, large-scale production may turn to large-scale customization and personalized manufacturing, enterprise scale polarization development, industrial organizations tend to be flat and networked, and the global supply chain and industrial competition paradigm will also undergo new changes.

The ocean covers 71 % of the earth's area, once a natural barrier against intercontinental interconnections, and has become an important channel for trade between various countries. 70 % of international trade and 90 % of material flow are borne by sea. Although the ocean space is vast, but really as the actual shipping line area is very limited, on the one hand, because the Marine environment in some areas is relatively bad, brought

greater uncertainty and risk for ship transport, on the other hand because many waters away from the mainland economic activity center, cannot provide supply and security for ships, also lack of effective logistics demand. Therefore, after the opening of intercontinental ocean routes and the opening of some important major canals, the basic pattern of international shipping has not changed much. The main axis is the transportation channel around the equator, connecting North America, Europe and the Asia-Pacific region through the Suez Canal, the Strait of Malacca and the Panama Canal [51, p. 15].

The new round of industrial revolution and scientific and technological revolution have promoted global industrial upgrading and detailed division of labor. Logistics services and other requirements for the timeliness and reliability of the high value-added links of the international supply chain have been continuously improved, driving the development of international aviation logistics. After experiencing the 2008. After the impact of the international financial crisis in 20 years, in recent years, international aviation logistics has gradually begun to recover and enter a new stage of rapid growth. In 2017, global air cargo reached 61.5 million tons, up 7.9 % year on year, the largest growth since 2008 (figure 2.4), with international air cargo accounted for nearly 87 % and a growth rate of 10.3 %. In terms of market structure, the Asia-Pacific region has become the largest market for air cargo, with more than a share of 1/3, followed by North America and Europe, accounting for nearly 1/4 (figure 2.4).

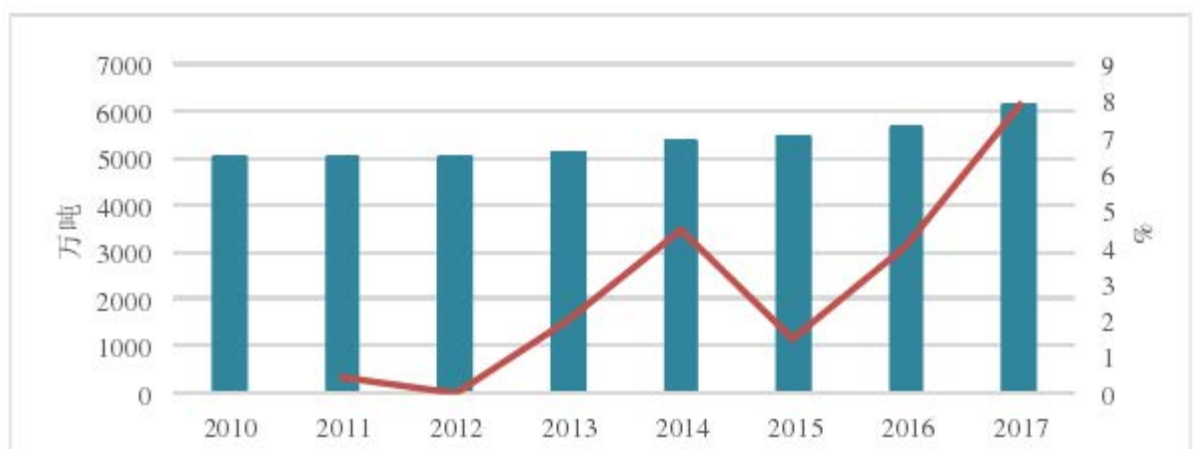


Figure 2.4 – Global airfreight volume and growth rate in 2010–2017 [47, p. 18]

As the scale effect of the international logistics field decreases, the development and application capacity of related technologies becomes increasingly important. Many multinational companies are actively developing comprehensive information technology infrastructure to accelerate the digitization and internal process transparency, digital startups such as Xeneta, Flexport and Kontainers were emerged, and information technology has been widely used in the international logistics field. For example, in the aspect of the Internet of Things, using data generated by satellite information and sensors, connecting equipment, systems, and machines, supporting route optimization, automatic berthing and navigation remote control technologies are also under test; big data analysis is used to reduce transit time and time loss when entering ports and other high traffic areas to alleviate port congestion; Using blockchain to increase a layer of security, gradually reduce data centralized storage and centralized processing, and then carry out cargo tracking, realize end-to-end supply chain visualization, record ship information, integrate intelligent contracts and shipping insurance policy, document filing and digital and automation processing, develop different types of industry single window, promote paperless trade, etc. In addition, independent sailing ships, unmanned cargo vehicles, drones and unmanned aerial vehicles also have broad prospects in the international logistics field of China, and logistics hubs such as ports are accepting and utilizing digital-driven innovation and technology in a productive way. But at the same time, the development of modern information technology may lead to the decentralization of international trade, change the global supply pattern of producer services, including logistics, and developing countries are also expected to win new strategic space.

In the mid-1990s, after the Internet received commercial application, e-commerce, as a platform, displayed, traded and settled in the United States, which had a profound influence on production organization, consumption mode, distribution channels, distribution network, and transportation logistics. In 2016, global e-commerce transactions in 2016 26 trillion dollars. Cross-border e-commerce refers to a kind of international commercial activity where trading entities belonging to different customs points, reach transactions, conduct payment and settlement through network platforms, and deliver goods and complete transactions through cross-border logistics. Similar to domestic e-commerce,

cross-border e-commerce is divided into B2B, B2C, C2C³⁴ mode, including B2B mostly from the traditional transformation of international trade, just using the Internet platform to promote information communication, supply and demand docking, efficiency and process transparency, and commonly called cross-border e-commerce new formats generally refers to the consumption of B2C and C2C, although this part of the business market share is less. UNCTAD estimates such cross-border e-commerce transactions in 2015 at around 1,890 million dollars, only 6.5 % of global online retail market share, but grew fast, predicted by Goli International. In 2020 45 % of online consumers worldwide will buy goods from other countries [50, p. 18].

The emergence of a new form of cross-border e-commerce has changed the layout of traditional network, market structure and operation mode of international logistics, driven the rapid development of new logistics industries such as express delivery, and is conducive to developing countries to give full play to the advantages of post-development, narrow the gap and achieve catch up.

Chapter 3 Current development trend of international logistics

3.1 Trend in development of international logistics

Traditional logistics is only the starting point to the end of goods transportation flow process, such as, products after delivery such a process from packaging, transportation, loading and unloading to warehousing, and modern logistics, from longitudinal: it extends traditional logistics to both ends and inject new connotation, that is, from the earliest goods procurement logistics, after production logistics into the sales field, through packaging, transportation, loading, warehousing, processing and distribution process to the final delivery to the user, even finally recycling logistics, the whole process includes the whole product "born" into "death". From the horizontal perspective: it will be social logistics and enterprise logistics, international logistics and domestic logistics and other logistics systems, through interest transfer, equity control organically, through coordination, reasonable planning to control the flow of the whole goods, in order to meet the needs of various users and changing needs, strive to achieve maximum benefit and minimum cost.

The integration of international logistics, is to build the whole logistics system into an efficient, smooth, controllable flow system, to reduce the circulation link, save circulation costs, to achieve scientific logistics management, improve the efficiency and efficiency of circulation, in order to adapt to the development trend of "logistics without borders" under the background of economic globalization. It can be said that in the past, the competition between individual enterprises of logistics enterprises has evolved into the competition between a group of logistics enterprises and another group of logistics enterprises, the competition between one supply chain and another supply chain, and the competition between one logistics system and another group of logistics system. The larger the scale of the international logistics system in which logistics enterprises participate, the higher the efficiency of logistics, the lower the cost of logistics, and the stronger the competitiveness of logistics enterprises.

This competition is a "win-win" relationship with both competition and cooperation. This integrated trend of international logistics is a cross-departmental, cross-industry and

cross-regional social system that a country forms to adapt to international competition. It is the main symbol of a country's circulation industry towards modernization and a concrete embodiment of a country's comprehensive national strength.

At present, the development of international logistics to the integration direction is mainly manifested in two aspects: one is to vigorously build logistics parks; the second is to accelerate the integration of logistics enterprises. The construction of logistics park is conducive to realizing the specialization and scale of logistics enterprises, giving full play to their overall advantages and complementary advantages; The integration of logistics enterprises, especially some large logistics enterprises to carry out "cross and vertical" mergers and acquisitions across the border, or form cooperation between logistics enterprises and establish strategic alliance, is conducive to expanding the international logistics market, strive for greater market share, and accelerate the deep development of the logistics industry in the country to the international direction [51, p. 12].

Under the guidance of the system engineering thought, the most essential feature of the international logistics development today is to strengthen the resource integration and optimization of the logistics process with the condition provided by modern information technology. The two key technologies of informatization and standardization have had a revolutionary impact on the integration and optimization of the current international logistics.

At the same time, due to the implementation of standardization, the further popularization of information technology has obtained extensive support, so that the international logistics can achieve cross-border, cross-regional information sharing, the transmission of logistics information is more convenient, fast and accurate, and strengthens the information connection of the whole logistics system. In this way, the modern international logistics, with the common support of the information system and standardization, with the participation of storage, transportation and transportation systems, with the help of various logistics facilities, has formed a crisscross logistics network, so that the international logistics coverage continues to expand and the economic benefits of scale are more obvious.

Take French as an example, the company, in the absence of its own ships and vehicles and other transportation tools, integrated the logistics resources through the whole logistics information system around the world, and carried out logistics services in 98 countries and 600 cities around the world, forming a strong logistics network. The company ranks fifth in the world, with 1 transportation per week. At 90,000 times, the gross profit of maritime operations is about 4 billion euro a year.

The standardization of international logistics is to take international logistics as a large system, formulate technical standards of internal facilities, machinery and equipment, special tools, formulate working standards of packaging, unloading, transportation, distribution, study the technical and working standards of disciplines from the system and unify the international logistics system according to cooperation requirements; Finally, study the cooperation between international logistics system and other related systems, and seek the unification of international logistics system standards. With the deepening of economic globalization, all countries in the world attach great importance to the interconnection between logistics and international logistics, and strive to make the early development of the standards consistent with the standard system of international logistics [54, p. 14].

Because if you do not do so, it will not only increase the technical difficulty of international exchanges in the future, but also more importantly, on the basis of relatively high tariffs and freight, but also increase the workload caused by the inconsistency with international standards, which will increase the whole cost of foreign trade and logistics. Therefore, the standardization of international logistics cannot not attract more attention.

The global operation of multinational corporations is greatly affecting the establishment of the global standardization of logistics. Some international logistics industry and associations, on the basis of international container and EDI technology development, began to further logistics trading conditions, technical equipment specifications, especially documents, legal conditions, management means to implement unified international standards, make logistics international standards more deeply affect the domestic standards, make domestic logistics increasingly integrated with international logistics.

As early as the 1990s, Taiwan computer industry created a "global transport production and marketing mode", is to take the form of customer orders, decentralized production, outsourcing all computer parts, components, chips to manufacturers around the world, and then to the parts, through the international logistics network, components, chips to the logistics distribution center, and then sent to the computer manufacturers by the distribution center. Since the 1980s, some developed countries such as the United States and Europe have begun to carry out a "logistics revolution", whose content is to integrate various functions and elements of logistics, systematize and specialize logistics activities, and there are "third-party logistics" enterprises specializing in logistics service activities. Subsequently, a large variety of professional logistics service enterprises emerged and accelerated their development in developed countries in Europe and the United States, making the logistics service function more powerful and the service quality more refined. Logistics industry has become an important part of the service industry in developed countries.

In order to adapt to the rapid expansion of international trade, many developed countries are committed to the construction of ports, airports, railways, expressways, three-dimensional warehouses, and some international logistics parks have emerged at the historic moment. These parks generally choose to be built near large ports and airports to form logistics centers handling international trade and provide more logistics services according to the development and requirements of international trade. For example, Japan, in order to improve the international logistics function of the central port and airport, focus on the construction of super central port projects in Beijing, Nagoya, Kobe, Osaka, Chengda Airport, Kansai Airport, Yueda Airport, and set up logistics centers near the international central ports and airports, to improve the transportation and handling capacity of international goods. These international logistics centers, generally have the function of the bonded area. In addition, the port also achieved 24-hour operation, and the international air cargo achieved 24-hour operation [47, p. 19].

There are also many conveniences in customs clearance and other handling. International logistics and domestic logistics are, in fact, both the transfer of goods in the two tariff zones and cross-border flow. To achieve the barrier-free connection between the

domestic and international circulation systems, it is necessary to reduce the burden of international logistics enterprises, simplify administrative procedures and improve the facilitation of customs clearance. In this regard, Japan has implemented the same window handling method, simplified the procedures of import and export and airport ports, and quickly and accurately conducted quarantine, safety and customs clearance inspection. Therefore, the convenient development of the international logistics park not only depends on the efforts of the logistics enterprises themselves, but also especially heavily on the support of the government. How to establish bonded areas, bonded warehouses and bonded warehouses around airports and ports to provide "point to point" services and "one-stop" services is a problem that must be deeply considered in the planning of the international logistics center.

3.2 China's international logistics under the Epidemic

The sudden attack of the COVID-19 epidemic in 2020 highlighted the lack of China's international logistics operation capacity and sounded the alarm call to China's supply chain. Shortage of China's international logistics capacity. It is mainly reflected in the field of international aviation logistics. During the outbreak and spread of the epidemic, the most important and most important supplies were all kinds of medical supplies. Due to the sudden and aggressive outbreak of the epidemic, both China, the main battlefield in the first half of the fight against the epidemic and European and American countries in the second half of the epidemic, have a very urgent demand for medical supplies. The overall logistics operation is a special emergency state in the special period, and the way to undertake these logistics and transportation is mainly aviation logistics.

The lack of China's aviation logistics capacity caused the shortage and shortage of medical materials in the early stage of China and the export of medical materials in the late stage of the epidemic. Turning hub is the main index to measure a country's international air cargo capacity. Whether from the perspective of transport capacity (cargo aircraft number, logistics routes), or from the perspective of logistics nodes (aviation hub), there is still a gap between our Chinese logistics enterprises and the international logistics giants.

McKinsey's research shows that the United States and Germany are the strongest connectivity in the world, with China has half their global connectivity. For example, the U. S.-based logistics giant UPS (incorporating TNT) manages logistics, capital flows, and information flows in over 200 countries and regions around the world. UPS 's World Port is the world' s largest automated logistics and transit hub. There are more than 300 flights every day, and the package processing volume reaches 2 million. Port World is the size of 90 soccer fields, investing at 2.4 billion dollars, including infrastructure. UPS's total assets are roughly around 30 billion dollars. FedEx, another international logistics giant, has become a veritable "global logistics operator" after several large mergers and acquisitions and expansion. It operates in 211 countries and regions, with 490,000 employees, 1,950 transshipment stations, 13 aviation hubs, 679 cargo aircraft across more than 650 airports and 180,000 transport vehicles, and is also studying the delivery of drones [50, p. 20].

Shipping is the most important mode of transportation in the international logistics. Currently, more than 2/3 of the total traffic volume of international trade. It is about 90 % of the total import and export freight volume in China. They are use of sea transportation. Therefore, COVID-19 has led to a sharp decline in foreign trade orders, the first affected by international shipping. The Baltic Dry bulk index, which reflects shipping economic indicators, has fallen to a record low within six months. It fell by nearly 70 %. This marked a significant drop in sea transport. However, industry experts predict this is just the beginning of the lockout, as the epidemic in Europe and the United States progressed. If the spread of the epidemic is found among sailors, ports, docks, warehouses and other staff, the relevant companies will be forced to reduce or even stop logistics operations. At present, a number of ship companies have increased the suspension capacity. The Shanghai International Shipping Research Center released a China shipping boom report in the first quarter of 2020. According to the COVID-19 outbreak, the shipping boom index fell to 62.95 and entered a depressed recession; China's shipping confidence index was only 39.05. fell to a severe slump. China's shipping boom index and confidence index both hit record lows [46, p. 103].

The epidemic has had a huge impact on Chinese logistics enterprises, and the enterprises have lost their revenue and profits to varying degrees. During the epidemic

period, the volume of business decreased significantly, which seriously damaged the operating income of most small and medium-sized enterprises and enterprises with international business. Only a small number of state-owned logistics companies and large logistics enterprises increased the operating income of enterprises by participating in transporting anti-epidemic and living materials or relying on their own competitive advantages. At the same time, the price of logistics services remained basically unchanged and the surge in enterprise operating costs (especially the costs of protection and labor costs) caused by the epidemic have led to a reduction in the net profit of almost all logistics enterprises. This phenomenon reflects the serious impact of the epidemic on Chinese logistics enterprises, but it also reflects the contribution of Chinese logistics enterprises during the epidemic. According to data released by the China Federation of Logistics and Purchasing, the global manufacturing PMI was 39.5 % in April 2020, down 8.3 percentage points from March, and operating below 50 % for three consecutive months after the outbreak. Asian manufacturing PMI saw a relatively small decline driven by the resumption of work and production in China; Europe, America and Africa due to the significant impact of the epidemic. Sales stalled as stores closed and unemployment rose, prompting retailers to cancel orders with suppliers. European dock operations came to a halt, and port and warehouse containers exploded. Australian retailers have closed heavily, with goods from China piled in warehouses and container yards unable to sell due to the epidemic. Slow market demand is the main pressure for enterprises. With the resumption of work and production, production problems will be solved, and sales problems will be more prominent.

Actively mobilize major postal express enterprises to effectively make use of "customers to goods". During the epidemic period, postal express enterprises, as an important force in China's air freight, actively responded, such as overseas transit, opening up routes and increasing charter flights. Postal Airlines has added routes to Belgium and Russia, with 24 charter flights for epidemic prevention supplies. SF Express has opened additional routes to Europe, the United States, India, implementing 210 charter flights of epidemic prevention materials, will continue to integrate its own full-cargo aircraft and charter modes, in order to open more international routes, to ensure the smooth flow of the

international supply chain. YTO Airlines flew 84 charter flights of epidemic prevention materials, carrying more than 422 tons of materials.

A series of measures were provided to ease the tension of air transport capacity. The Ministry of Transport, together with relevant departments, to increase the capacity of international air transport, will actively encourage airlines to complete direct freight transport by the use of passenger aircraft. Due to the epidemic and the current limited conditions in China, plus a large number of foreign flights and "city closure", the passenger plane business declined sharply. During the epidemic period, in order to solve the logistics situation of the shortage of international aviation, the Civil Aviation Administration of China actively encouraged passenger airlines to deal with the current shortage of cargo and aircraft transport capacity through the form of "passenger to cargo". Therefore, the form of "passenger to goods" will become the inevitable trend of domestic and foreign airlines. Many domestic airlines actively cooperate, quickly carry out the "passenger to goods" modification work. Through the "passenger to goods" not only smooth the international logistics and transportation channel but also make up for the "production reduction" caused by the downturn of passenger shipping, but also can reduce the impact of the sharp increase of already expensive express costs. It can also have the help of the favorable situation of "One Belt And One Road" and "global integration", and with the help of hub aviation express enterprises can actively establish regional transport centers to realize the transport to ensure the smooth international supply chain channel [43, p. 59].

Supply chain urgently needs to deepen the supply-side structural reform. Under the impact of the COVID-19 epidemic, the sharp decline in the demand side, such as consumption and investment, exposes the imbalance between the supply side and the demand side, reminds us of the need to strengthen the test of the resilience and regeneration capacity of the supply chain, accelerate the supply of effective demand, and eliminate economic shortcomings. Traditional industries have been greatly impacted by the epidemic, while emerging industries and services such as intelligent manufacturing, intelligent logistics, e-commerce express delivery, online office and distance education have shown great potential in this epidemic. This is not only a demand-driven role, but also that these products and services are supported by artificial intelligence, big data, cloud computing,

and other 5G communication technologies. Various measures in the epidemic prevention and control have provided business opportunities for relevant enterprises, prompting them to quickly develop and launch a series of new applications based on Internet technology. This inspires us that we can adjust the existing supply structure, upgrade and transform traditional industries, reduce ineffective, inefficient supply, and improve the supply quality of products and services, so as to seize the new opportunities brought by the digitalization and intelligence of industries, and deepen the supply-side structural reform.

Accelerate the construction of new Emergency Logistics and Emergency Supply Chain System. Build a scientific and reasonable emergency logistics command system: establish emergency materials joint security system including transportation (including railway, civil aviation, postal), health, emergency, NDRC, industry, commerce, finance and other departments, to establish the organization of new emergency materials security system, core departments, division of responsibilities, command and operation system. Build an emergency logistics resource system combining flat and emergency: establish a socialized emergency logistics system that is strongly organized and controlled by the government, and enterprises can organize and participate in it. In trunk transportation, railway – gives full play to the pillar role of central enterprises of China Railway Group; highway – mainly relies on the terminal distribution resources of central enterprises and private enterprises, and a large number of drivers, deliverors and couriers familiar with logistics distribution terminal tools. Warehousing resources, signed long-term contracts with the types of state-owned warehousing logistics enterprises, "peacetime subsidies, disaster emergency". Build efficient linkage emergency logistics operation system: forward transportation, provincial intercity transportation should be based on railway logistics and aviation logistics; terminal distribution, multimodal transportation, automated information technology, unmanned facilities and equipment, logistics robot for contactless distribution; reverse recycling, pay attention to the construction of reverse logistics system such as medical waste, forming a closed-loop operation.

Establish and improve the emergency supply chain data knowledge base, and systematically integrate the scattered data knowledge through the knowledge base platform, to realize the storage, query, preview, application and management of knowledge resources

related to the emergency supply chain. Dynamics is the use of all technical means as far as possible to improve the authenticity and accuracy of the demand data, and to achieve timely and adequate protected sharing and targeted information / data public disclosure under the principle of confidentiality.

Conclusion

At present, most of the research on international logistics problems in the field of management science focuses on the micro field, from the components of international logistics and the operation mode, from the channel optimization to the hub layout, forming a relatively systematic theoretical system and rich scientific methods from cost control to performance improvement. Secondly, there are also a lot of achievements in studying the problem of international logistics from a macro perspective, mainly focusing on the development status and evolution trend of international logistics. At the same time, many scholars have studied the relationship between international logistics and international trade, but they have not formed a complete set of theoretical systems and scientific methods as in the micro field. In particular, for the influencing factors of international logistics, the lack of sorting in the macro field, it is difficult to distinguish the driving factors and restriction factors behind the international logistics reform, the lack of theoretical basis for judging the future development trend, and it is difficult to provide theoretical reference to the international logistics strategic selection and formulate relevant policies.

The transport, loading and unloading equipment according to the direction of container operation upgrading or upgrading, the third generation of the core container terminal port began to appear and become the international logistics center, and the traditional port lost the past prosperity, such as New York port on the side of New Jersey new Elizabeth wharf, from here international routes gradually throughout the world, and the other side of the old New York port area is declining. Ddue to the improvement of loading and unloading efficiency, the ship stay in port was greatly compressed, and the time is more controllable, container liner according to the announced timing along the port, greatly convenient for the shippers, also reduce the difficulty and cost of the operation of the owner, at the same time, the ship began to standardize, large trend, the average transportation cost of goods declining. The rapid development of computer technology and should be container management, international standardization of system and communication rules and rapid standardization of container transportation, has greatly improved the efficiency and accuracy of information collection and transmission, and

become a modern international logistics operation mode. Finally, the object of container transportation is independent and closed packaging units, and the transportation documents are gradually standardized and standardized, replacement between different modes of transportation and transfer between different regions. The transportation can be seamlessly connected, and the responsibility boundary is relatively clear. The cargo owner directly signs the transport contract with the multimodal transport carrier to complete the whole process of logistics service and assume the whole responsibility. The standardized transportation of "one contract, one payment, one insurance and one order to the end" has become an important way of international logistics.

With the development of modern economy, the exchange relationship and dependence between industries, departments and enterprises are becoming more and more complex, and logistics is the exchange link connecting these complex relations, which makes the parts of economic and society connected organically. In the case of rapid market demand and increasing competitive environment, logistics is required to have faster response speed and synergy in enterprises and the whole system. Faster response speed requires logistics enterprises to timely understand customer demand information, comprehensively track and monitor the demand process, and submit products and services to customers in a timely, accurate and high-quality manner. The ability to cooperate requires logistics enterprises to achieve real-time communication and coordination with suppliers and customers, so that suppliers have foresight of their supply ability, can provide better products, prices and services; make customers have a clear planning for their own needs, to meet their production and consumption needs. In order to achieve zero resistance and zero time lag coordination, international logistics needs to achieve close integration of business processes with partners, strengthen prediction, planning and supply, share business data, joint management execution and performance evaluation.

Only in this way, can the logistics operation better meet the needs of customers. Because the modern economy specialization division of labor more and more fine, quite some enterprises in addition to their own production of the main parts, most of the parts need to be purchased. International processing trade is developed in this way, and international logistics enterprises have emerged with the division of labor of international

trade. In order to meet the production needs of various manufacturers, as well as diverse and small modes of production, the high frequency and small batch distribution of international logistics also emerged.

The fulcrum of international logistics is inseparable from transportation and warehousing. In order to adapt to the characteristics of today's fast pace of international competition, warehousing and transportation both require modernization, which requires the realization of a high degree of mechanization, automation and standardization means to improve the speed and efficiency of logistics. The main way of international logistics is sea, partly by air, but it will penetrate other parts of its country. Therefore, the international logistics requires the establishment of a "three-dimensional" transportation system by sea, air transport, railway and highway, to achieve a fast and convenient "one-stop" service. In order to improve the convenience of logistics, at present, all countries in the world are using advanced logistics technology, develop new transportation and loading and unloading machinery, and vigorously improve the mode of transportation, such as the application of modern logistics means and methods, the development of container transportation, tray technology and so on. The reason for the high logistics efficiency of the United States is that the American logistics model is good at organically integrating various new technologies into the specific logistics operations, so it can take the lead in the world to achieve a high degree of logistics integration and facilitation. This also makes the enterprises engaged in logistics, profits and investment returns continue to increase, and then induce new research and development investment, forming a virtuous circle. In short, the international logistics, which integrates information technology with the modern means of transportation, will continue to have a positive impact on the operation of the world economy.

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