

Министерство науки и высшего образования Российской Федерации
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Руководитель работы
к.т.н., доцент

_____ А.И.Демченко
_____ 2021 г.

Автор работы
студент группы ЭУ-224

_____ Тан Сыжу
_____ 2021 г.

Нормоконтроль
к.п.н., доцент

_____ Е.В. Ярушина
_____ 2021 г.

Челябинск 2021

ABSTRACT

Tang Siru (EU-222) China's logistics industry and its role in the development of international trade Chelyabinsk: SUSU, EM-222, 93 pages, 24 pictures, 8 tables, 43 references.

Under the wave of economic globalization, the scale of international trade continues to expand, and the scale of logistics services continues to expand with the demand for trade. In recent years, China has occupied a large share of global trade, and China's logistics industry has developed rapidly.

Based on the above background, this master's thesis chooses China as the research object. Since China has many provinces and the development of each province is different, three representative Chinese provinces of Zhejiang, Guangdong, and Tibet Autonomous Region are taken as examples, and the development data of the three provinces over the years are used.

This paper first analyzes the concepts of logistics and international trade and the overall development of the two in the world. Secondly, it further clarifies that the research object is China, and understands the history and current situation of China's logistics industry and international trade industry, and clarifies the logistics industry and international trade relationship. Finally, taking the three provinces as examples, the main analysis points are the port cargo throughput, the development of roads and railways, and the development of the aviation industry.

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INTRODUCTION

With the development of economic integration and the wave of globalization, the trade demand and the scale of trade between countries continue to expand, and resources are effectively allocated within the scope of the global market, so that countries can play their own production advantages in this environment. And continue to make profits. However, to realize the effective allocation of resources, we must first solve the problem of realizing the effective transportation of resources on a global scale. If you want to improve your competitiveness in the global market, you must improve the speed and quality of transportation, which puts forward higher-level requirements for the development of the logistics industry.

This master's thesis takes China as an example and selects three representative provinces to study the development of China's logistics industry and its important role in China's international trade. Through research, we have found that a variety of factors have an impact on the development of the logistics industry, such as railway transportation capacity, air transportation capacity, and the level of logistics informatization. On this basis, this paper selects the three elements of port cargo throughput, highway and railway mileage, and aviation industry development, and combines the historical cargo throughput, total import and export volume, By calculating the correlation coefficient between these factors and the total import and export volume of the region, the relationship between these factors can be known. Through the analysis of these data, we can intuitively discover the deficiencies in the development of China's logistics industry. Finally, it puts forward specific suggestions on the development of China's logistics industry, and put forward its own views and opinions on the development of China's logistics industry.

My master's thesis is mainly composed of three modules:

1. Theoretical basis of logistics and international trade
2. Basic analysis of the development of China's logistics industry and

international trade

3. Logistics industry and international trade analysis problems and suggestions

1. THEORETICAL BASIS OF LOGISTICS AND INTERNATIONAL TRADE

1.1 Overview of logistics

First is derived from the concept of military logistics. In the Second World War, the theory of “logistics” was established around the supply of war, which refers to the unified arrangement of the production, procurement, transportation and distribution of wartime materials as a whole, in order to lower the cost, faster speed and better service of wartime materials supply [1]. Later, the word "logistics" is widely used in enterprises, and there are commercial logistics and logistics circulation. At this time, logistics includes the logistics of production and circulation process, so it is a concept of logistics that contains a wider range [2].

In 1935, the American Marketing Association defined logistics for the first time, but with the deepening of people's understanding of logistics activities, the definition of logistics is also constantly developing. Different from the various activities of “delivering the produced goods to consumers” in the narrow sense of logistics, the purpose of modern logistics is to use various modern scientific and technological means to effectively link the production of products to the sales link, and through the management of important resources [3]. Time, logistics quality, stocking, information, etc. promote the improvement of logistics service quality, so as to realize the benefits of enterprises.

Different countries have made different definitions of logistics based on their own development status, and with the continuous development and enrichment of logistics theory, the concept of logistics in different countries is also constantly improved. In the United States, logistics is a part of the supply chain process, which is a process of planning, implementing and controlling the positive and negative flow and storage of goods, services and related information from the origin to the place of consumption in order to meet the needs of customers. In Europe, logistics refers to the planning, execution and control of the movement, arrangement and supporting activities of people and goods within a system to achieve a specific purpose. In Japan, logistics is the physical displacement process

of goods from the supplier to the demander, and it is an economic activity that creates time value and place value, including packaging, handling, storage, inventory management, circulation processing, transportation, distribution and other activities. In China, logistics is the process of moving goods from the seller to the buyer to meet the needs of customers in the future. The whole process requires a series of supporting activities, such as packaging, storage, storage, distribution and handling of goods. Only by organically combining these supporting flow processes can efficient delivery of goods be achieved.

Regardless of the understanding of the concept of logistics in various countries, there is a high degree of similarity in the understanding of various countries. In general, modern logistics is the entire process of the effective flow of raw materials and finished products from the beginning to the end with relevant information [4]. It includes not only the transportation of products, but also a series of processes such as packaging, loading and unloading, and warehousing.

According to the definition of logistics, it is not difficult for us to understand the purpose and significance of the existence of logistics. From the definition, we can know that the logistics industry exists for the efficient and rapid development of trade. If we consider the process from production to consumption, it is not difficult to find that there is a direct gap in time and space between the two. The purpose of logistics is to make up the time and space gap between production and consumption. In the past, the main mission of logistics was to improve the efficiency of transportation, shorten the time needed for goods to arrive, and eliminate the distance in space. But up to now, speed is no longer the only purpose of logistics, and how to timely deliver goods to consumers is the most important theme. In order to achieve this goal, a non-wasteful and more efficient delivery mechanism is indispensable. Must give full play to the transportation, storage and other functions, adjust the quantity, time, place of the goods, to prevent out of stock, excess stock. In modern times, waste free and more efficient logistics is gradually becoming a key word.

Logistics is a big concept, which is subdivided into various categories. The

logistics in our conventional knowledge is actually the "sales logistics" that moves goods from the place of production to the consumer. In addition, there is also the "purchasing logistics" of circulating raw materials and components, which represents the flow of goods within factories and enterprises "Production logistics", "recycled logistics" that accompanies consumer returns and waste recycling, "renewable logistics" that circulates renewable materials, and so on.

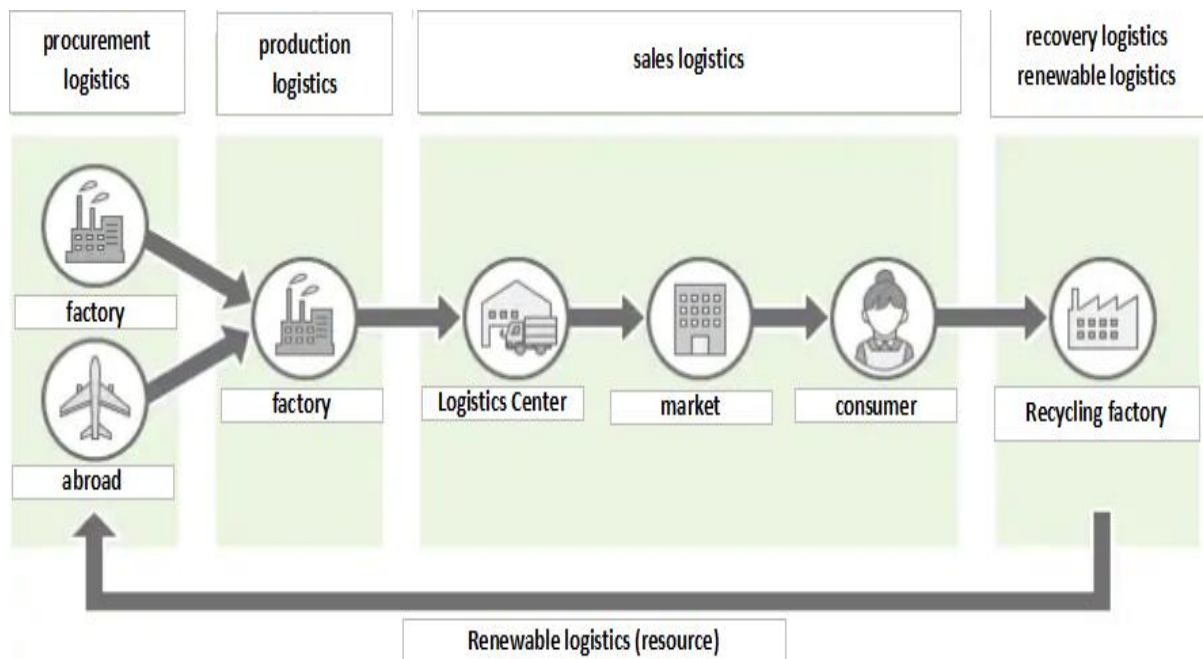
According to the applicable fields, logistics can be divided into five categories: "procurement logistics", "production logistics", "sales logistics", "recovery logistics" and "renewable logistics". Procurement logistics refers to the logistics based on the purchase of raw materials and components. In order to meet the needs of production and manufacturing, raw materials and components must be purchased from suppliers. The circulation of goods at this time is "procurement logistics". In the past, this field did not attract much attention, but today, when the production of a few varieties has become the mainstream, "when necessary, purchase the necessary quantity of necessary materials" and use it for production, is an effective strategy that can directly reduce the inventory cost, and more and more enterprises are actively carrying out practice. Production logistics appears in material management, circulation in the factory, product management and delivery links, and a series of material circulation related to production, known as "production logistics", including the management of purchased parts and materials, logistics within the factory, product management, packaging, delivery to the warehouse, and so on. To ensure the smooth linkage between procurement logistics and sales logistics, not only can realize the optimal delivery time management, warehouse management, distribution management, but also can carry out dynamic management of distribution vehicles. Sales logistics refers to the link in which products are transported from the warehouse to wholesalers, retailers and customers. This is the main form of logistics in the impression of traditional consumers, and the most common form of logistics.

Traditional sales logistics is mainly responsible for the distribution of goods from distribution centers, logistics warehouses to wholesale retail outlets and other

circulation sites, but in the rapid development of online stores and e-commerce today, direct delivery to end users of the order has become an important part of sales logistics. Whether through the distribution center and logistics warehouse, or direct delivery from the production network, in order to "in the necessary time, the necessary quantity of the necessary goods to the people in need", high efficiency of transportation and distribution and inventory reduction are the primary key. Recycling logistics refers to the recycling and recycling of products and containers and packaging. If the human circulation system is used as a metaphor, the circulation process from production to consumption through "procurement logistics", "production logistics" and "sales logistics" can be called "artery logistics". In contrast, the circulation process in which products, containers and packages are recovered and recycled after completing their missions is called "recovery logistics" or "vein logistics". The "renewable logistics" mentioned later also belongs to the vein logistics. In the circular society, people are attaching increasing importance to this circulation. Renewable logistics refers to the recovery and reuse of renewable products, empty cans, bottles and waste paper, etc., which is a typical renewable logistics. Recycling and recycling of containers and packaging, recycling and recycling of used computers and printer cartridges also belong to renewable logistics. What recycling logistics and renewable logistics have in common is that products are recovered from consumers and then recycled and reused as materials, which is known as "renewable logistics".

The development trend of modern logistics mainly includes the following aspects:

Green logistics. Green logistics refers to the use of advanced logistics planning technology and energy-saving logistics operation tools and methods to reduce the consumption of natural resources and reduce environmental pollution and waste caused by logistics links [5]. Its main characteristics are environmental symbiosis, resource conservation, and Cyclical



Picture 1.1- Logistics classification and circulation

1. . With the continuous development of modern economy, the destruction of the environment and resources continues to deepen, which is not only detrimental to the sustainable development of the economy, but also has great harm to the survival of mankind. The traditional logistics industry contains a large number of hidden environmental costs, and the overall social costs are much higher than the costs of individual economic activities. Therefore, it is necessary to improve the logistics system from the environmental point of view, green treatment for transportation, packaging and distribution processing, change the extensive logistics and transportation methods, vigorously advocate the innovation and application of energy-saving and emission-reduction technologies, and use reverse logistics , Circular logistics and other logistics forms, in order to form an environmental symbiosis-type logistics operation and management system. The emergence of the concept of green logistics has changed the short-term and limited development vision of the logistics industry, introducing environmental and resource loss costs into the management level of logistics, emphasizing the long-term overall benefits, which can not only restrain damage to the environment, but also promote The sustainable development of the logistics industry itself.

2. Third party logistics. Third-party logistics originates from outsourcing

activities of logistics, which refers to the separation of logistics activities in the process of production and operation by enterprises and outsourcing to professional logistics enterprises[6]. The emergence of the third party logistics is the inevitable result of social specialization, especially since the economic globalization, the competitive environment is increasingly complex, no enterprise can do the best in multiple fields, it is vital to invest all energy and resources into the core business. Therefore, enterprises began to divide the labor vertically, and the logistics business was gradually separated out. At the same time, the logistics field policy continues to open up, the enterprise involved in the threshold relaxes continuously, the operation scope continues to expand, so that the professional comprehensive logistics enterprises can appear. The continuous development of the current information technology also provides a solid foundation and guarantee for the development of the third-party logistics. Entrust the enterprise through the non-core business outsourcing of logistics, reduce their operating costs, enhance the core competitiveness, and the third party logistics enterprise, with large-scale professional logistics equipment and a large number of professional logistics personnel, to logistics each link scientific and strict management and monitoring, able to provide transportation, warehousing and so on a set of entrust enterprise logistics services, At the same time, it also forms large-scale operations through the aggregation of customer resources to improve its own economic benefits. Therefore, for the client and the client, both can create great value, to achieve a win-win situation.

3. International logistics. With the continuous acceleration of the economic globalization process, enterprises are increasingly inclined to carry out production operations and resource allocation on a global scale, and the internationalization of logistics has also become an inevitable trend. As a cargo receiving channel between countries, international logistics is the closest to international trade, and it is also an important part of the international trade link. The prosperity of international trade has created a large amount of demand for international logistics. International cargo transportation is becoming more frequent. Only through

efficient international logistics channels, timely and accurate delivery of goods to various regions across the border can improve the company's international presence. Competitiveness. Therefore, with the internationalization process of enterprises in various countries, especially in some large-scale transnational internationalization strategies, international logistics occupies a very important position, which directly affects the international market share of enterprises.

Logistics development has certain characteristics, is mainly: the 1950 s to 80 s, the international large-scale logistics activity began to expand, shipping and achieve considerable attention, large transport and loading and unloading tools, standard container and the advanced technology is widely applied to logistics, greatly improving the maritime logistics transportation s scale and transport efficiency. The international logistics standardization system began to establish, and the standards of various countries began to tend to regional unity. The introduction of computer information technology has enhanced the overall management level of logistics.

From the 1980s to the 1990s, logistics generally reached the level of mechanical automation, and gradually shifted to a short-period, high-frequency operation mode. The logistics information technology is rapidly updated, the satellite positioning system is gradually introduced, the management system is becoming more and more perfect, the level of informatization is constantly improving, and the international logistics has begun to enter the era of information.

Since the 1990s, the importance of logistics has been widely recognized, and governments of various countries have begun to give preference to policies and investment. Globalization standards are further unified, and the two major logistics standards are increasingly improved and standardized. International large-scale third-party logistics companies have begun to rise, the service field has been continuously expanded, and the international cooperation of logistics companies has become increasingly close. Logistics began to create huge social value and became a pillar industry in all countries.

Logistics is a logistics mode which is directly related to international trade in

all logistics activities. The two interact and promote each other, and have formed an inseparable whole. International logistics, with its comprehensive functions of reducing costs, creating profits and providing services, has played a full role in international trade and has increasingly become a basic hub connecting the world's economic development and promoting the prosperity of the world economy.

1.2 Overview of international trade

International trade is the main content of global economic activities and the main driving force of global economic development. It is a topic familiar to modern workers. What is international trade? International trade refers to the exchange of goods and services between different countries (or regions) in the world [7]. It is the main form of interconnection among countries (or regions) on the basis of international division of labor. It reflects the interdependence of countries (or regions) in the world in economy, and is composed of the sum of foreign trade of each country [8].

International trade can be classified according to different natures. According to the direction of commodity movement, international trade can be divided into:

1. Import trade: Introduce goods or services from other countries to the country's market for sale.
2. Export trade: export the goods or services of the country to the market of other countries.
3. Transit trade: the goods of country A are transported to the market of country B through the territory of country C. For country C, it is transit trade. Due to the hindrance of transit trade to international trade, WTO members do not engage in transit trade with each other.

Import trade and export trade refer to both parties in each transaction. For the seller, it means export trade, and for the buyer, it means import trade. In addition, goods imported into the country, when exported again, become re-exports; When a commodity exported abroad is re-imported into the country, it is called a re-import.

According to the form of commodities, international trade can be divided into:

1. Tangible trade: import and export of goods in physical form. For example, machinery, equipment, furniture and so on are goods in physical form, and the import and export of these goods is called visible trade.

2. Invisible trade: the import and export of technologies and services without physical form. The transfer of patent rights, tourism, cross-border services provided by financial and insurance enterprises are all commodities without physical form, whose import and export are called invisible trade.

According to the relationship between the producing country and the consuming country in trade, international trade (whether a third country participates) can be divided into:

1. Direct trade: refers to the behavior of commodity producing countries and commodity consuming countries not to buy and sell commodities through a third country. The exporting country of trade is called direct export, and the importing country is called direct import.

2. Indirect trade and re-export trade: refers to the behavior of commodity producing countries and commodity consuming countries to buy and sell goods through a third country. The producing country in indirect trade is called indirect exporting country, the consuming country is called indirect importing country, and the third country is re-exporting. Trading country, the third country is engaged in re-export trade.

According to the number of participating countries:

1. Bilateral trade refers to the trade between two countries through agreement on the basis of bilateral settlement. This kind of trade, in which each side pays for the other's imports with its exports, is often practiced in countries with exchange controls. In addition, bilateral trade is also generally referred to the trade between two countries.

2. Multilateral trade, also known as multi-angular trade, refers to the trade in which three or more countries buy and sell each other on the basis of multilateral settlement through agreement. Obviously, under the trend of economic

globalization, multilateral trade is more prevalent.

International trade in goods belongs to the scope of commodity exchange, and is not different in nature from domestic trade[9]. However, since it is carried out between different countries or regions, it has the following characteristics compared with domestic trade:

1. International trade in goods involves possible differences and conflicts in policy measures and legal systems of different countries or regions, as well as differences in language, culture, and social customs. The issues involved are far more complex than domestic trade.

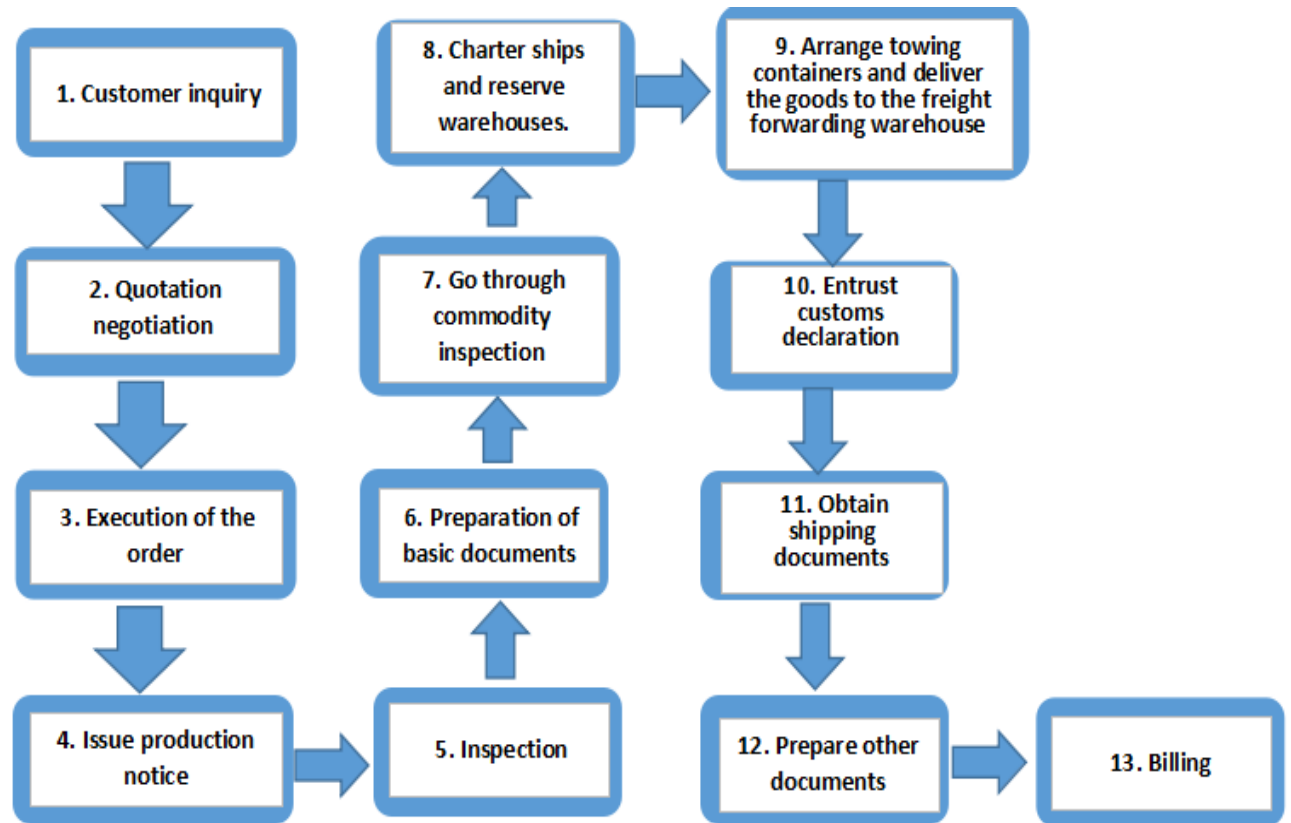
2. The transaction volume and value of international trade in goods are generally larger, the transportation distance is longer, and the performance time is longer. Therefore, the risks borne by both parties to the transaction are far greater than those in domestic trade.

3. International trade in goods is easily affected by the political, economic changes, bilateral relations and changes in the international situation in the countries where the parties to the transaction are located.

4. In addition to the parties involved in the international trade in goods, it also involves the cooperation and cooperation of transportation, insurance, banking, commodity inspection, and customs departments. The process is much more complicated than domestic trade.

The process of international trade is very complicated, and each process has a strong correlation. Only by standardizing the trade process and trade-related documents can the problems in the trade process be reduced. International trade mainly has the following processes: 1. Customer inquiry. 2. Quotation negotiation. 3. Execution of the order. 4. Issue production notice. 5. Inspection. 6. Preparation of basic documents: making export contracts, export commercial invoices, packing lists and other documents. 7. Go through commodity inspection. 8. Charter ships and reserve warehouses. 9. Arrange towing containers and deliver the goods to the freight forwarding warehouse. 10. Entrust customs declaration. 11. Obtain shipping documents. 12. Prepare other documents: commercial invoice, certificate of origin,

shipping notice, packing list. 13. Billing.



Picture 1.2 - The process of international trade

International trade is a trade behavior between countries, and its statistical indicators have been continuously improved during the trade process, mainly in the following aspects:

1. Trade volume and Quantum

1) Foreign trade volume: It is the sum of the total value of imports and total exports of a country in a certain period of time. It is generally expressed in the currency of the country, or it can be expressed in the internationally used currency; the foreign trade volume of countries in the world released by the United Nations is expressed in US dollars; when countries count tangible goods, the export value is calculated in FOB prices, and the import value is in CIF prices. Calculation; intangible goods are not declared, and the customs does not have statistics.

2) International trade value: It is the comprehensive value of foreign trade of all countries in the world expressed in currency, also known as international trade value. It is equal to the sum of the export trade volume calculated by FOB prices of

all countries in the world in a certain period of time.

3) Quantum: The quantum is an indicator established in order to exclude the impact of price changes and accurately reflect the actual volume of international trade or a country's foreign trade. In the calculation, the price index determined by the fixed year as the base period is used to remove the trade volume of the reporting period, and the result is equivalent to the trade volume calculated at a constant price (excluding the impact of price changes). This value is called the reporting period quantum. Quantum can be divided into international trade volume and foreign trade volume, as well as export trade volume and import trade volume.

2. Trade balance

The trade balance refers to the difference between a country's total exports and total imports in a certain period of time (usually a year).

(1) Trade surplus, China also calls it export surplus: it means that the export value is greater than the import value in a certain period.

(2) The trade deficit. China also calls it an import deficit or a deficit, which means that the export value for a certain period of time is less than the import value.

(3) Trade balance: that is, the export value for a certain period of time equals the import value.

It is generally believed that trade surplus can promote economic growth and increase employment, so all countries pursue trade surplus. However, large surpluses often lead to trade disputes. For example, the Japan-U.S. auto trade war.

3. Terms of international trade

International terms of trade: it is the contrast relation of export commodity price and import commodity price, say import to compare price again or exchange to compare price. It tells you how many units of goods you get back for a unit of goods you export. Obviously, the more imports you get back, the better. Changes in terms of trade in different periods are usually expressed by terms of trade index, which is the ratio of export price index to import price index. The calculation formula is as follows: the export price index is divided by the import price index,

and then multiplied by 100 (assuming the terms of trade index in the base period is 100).

The terms of trade index in the reporting period is greater than 100, indicating that the terms of trade have improved from the base period. The terms of trade index in the reporting period is less than 100, indicating that the terms of trade have deteriorated compared with the base period.

4. Commodity structure of trade

The commodity structure of trade is the proportion of various commodities in the total trade value. This involves a product classification problem, there are generally two classification methods.

1) The International Trade Standard Classification (SITC) of the United Nations Secretariat: The tangible commodities are divided into 10 categories in order, among which categories 0 to 4 are called primary products, and categories 5 to 8 are called finished products. The ninth category is for other commodities that are not classified. The proportion of primary products and manufactured products in import and export commodities represents the commodity structure of trade.

2) It is classified according to the factors of production invested in the production of a certain commodity, which can be divided into certain production factor-intensive commodities such as labor-intensive commodities and capital-intensive commodities.

5. Geographical direction of trade

1) Geographical direction of foreign trade

The geographical direction of foreign trade refers to the distribution of the countries of origin of the country's imports and the consumers of its exports, which indicates the degree of economic and trade links between the country and various regions and countries in the world.

2) Geographical orientation of international trade

It is to point to the regional distribution of international trade and commodity flow direction, namely the position that each region, each country occupies in international trade. They are usually expressed in terms of their exports (or

imports) as a percentage of the world's total export trade (or imports).

6. Degree of dependence on foreign trade

The degree of dependence on foreign trade is a basic indicator to measure the degree of outward orientation of the national economy of a country (or region). It refers to the proportion of foreign trade in the country's national income or gross national product.

International trade plays an irreplaceable role in the development of national and global economies. It is the main direction of economic development and a major role in the global economic market. From different perspectives, international trade has different functions. From a national perspective, the progress of international trade can increase national welfare. Through trade behavior, goods can break through the limitations of time and space, meet the different needs and preferences of nationals, and achieve the effect of improving national living standards [10]. At the same time, the progress of international trade can increase exchanges between countries, thereby broadening people's horizons and affecting the development of people's cultural acceptance and values. In addition, the expansion of international trade can bring more jobs. From a corporate perspective, international trade has expanded the corporate market and transformed from a domestic market to a global market. In order to gain competitiveness, companies will further strengthen the management of product quality, improve product quality and quality control, and thereby enhance the competition of corporate products. Power and irreplaceability. The progress of international trade has expanded the exchanges and communication between the industry and the market, can enhance the international technical exchanges in the industry, and enhance the self-improvement ability of enterprises.

From the perspective of a single country, international trade regulates the relationship between supply and demand in the market, adjusts the development of industrial structure, and continues social reproduction, so that production factors and production resources can effectively flow around the world. It is conducive for the country to exert its comparative advantages, improve production efficiency,

obtain more foreign exchange income, and increase the country's fiscal revenue. Improve the country's industrial technology development level, realize technical exchanges and breakthroughs between countries, strengthen economic ties between countries, and promote the development of the global economy. From a global perspective, international trade is an important means for countries in the world to participate in the international division of labor and to realize the smooth progress of social reproduction. It is also an important way for scientific and technological exchanges between countries in the world, and is conducive to technological progress and breakthroughs in global industries. International trade is not only an activity for countries in the world to carry out economic trade, but also an important tool for political and diplomatic struggles between countries. International trade is the core of the foreign economic relations of countries in the world and an important bridge for international economic activities.

1.3 Development status of global logistics and national trade

Up to now, the logistics industry in various countries to develop and grow, each has its own characteristics. Logistics industry is an important part of social production. It is of great significance to national economic development and is closely related to people's lives [11]. All countries hope that through the development of logistics industry, occupy the industry market advantage, because the global logistics industry showed vigorous development trend, this article selects the United States, Germany, the two logistics development is relatively developed countries, represented by understanding of the logistics situation of the two countries, can be intuitive understanding to the global logistics industry development.

The U.S. logistics industry saw significant growth in 2019, with a growth rate of 9%, which means that the U.S. gained a new market worth approximately \$114 billion during this period, largely due to the growth caused by the COVID-19 pandemic. Although the COVID-19 brought the development of the logistics industry, it also brought challenges to the logistics industry. The company needs

innovative solutions to enhance customer experience, so as to promote consumption, and ensure that the industry will not fluctuate too much after the normal operation of public places, so as to maintain the volume of customers. U.S. e-commerce sales grew nearly 15 percent in 2019 to \$600 billion. It accounted for 11% of all retail sales in America, up 11% from 2018 (see chart 3). In this case, the new crown for the development of the U.S. logistics industry to help. More and more categories (such as groceries and necessary household items) will be involved in logistics sales, which is both an opportunity and a challenge for the development of the logistics industry. Increasing costs and competition, as well as the now proven need to be able to respond quickly to large, unexpected events, will put pressure on the logistics industry.



Picture 1.3 - E-commerce sales and its growth rate in 2019

The rapid development of the logistics industry in the United States at the present stage is closely related to the development of its own logistics infrastructure. As one of the most developed countries in the world, the United States has established a huge railway, highway, aviation, pipeline and other transportation networks.

The United States has a nationwide highway and highway system of more

than 660,000 kilometers. About 150 million vehicles use the highway system. Highways are built by local, state, and federal governments. The federal government took responsibility for highway construction for the first time since 1811. By 2016 the United States had spent \$1.09 trillion on roads and streets. In 2017, the United States spent \$1.06 trillion on roads and streets. Currently, federal increases fund most of the interstate highway system, while states manage the construction of those kilometers and are responsible for their own road networks. Canada and Mexico, where the United States borders by land, are connected by road. America's roads and streets are well maintained, and the cost of building and maintaining them each year is inseparable. However, the United States has the most extensive range of local roads, reaching 2.9 million miles (about 69 percent of the centerline's total mileage) in 2018 and about 48,000 miles (just over 1 percent of the system's total mileage) for interstate roads.

Table 1.1 - Public Roads, Streets, and Bridges: 2010, 2017 and 2018

Public Road, Street, and Bridges: 2010, 2017 and 2018				
	2010	2017	2018	Percent change since 2010
Public Road and Street Mileage by Functional (centerline-miles)	4067076	4165349	4176915	2.7
Interstate	46900	48254	48440	3.3
Other freeways and expressways	14619	18741	18603	27.3
Other principle arterial	157194	156081	156614	-0.4
Minor arterial	242815	246644	246214	1.4
Collectors	799226	815892	814585	1.9
Local	2806322	2879736	2892459	3.1
Total lane-miles	8581158	8765578	8794569	2.5
Total bridges	604460	615002	616096	1.9
Total registered vehicles	250070048	272480899	273602100	9.4
Vehicle-miles of travel (millions)	2967266	3212347	3240327	9.2

Historically, railroads have played an important role in the development of the western United States. Farmers, merchants, and miners have been transported by

rail across the prairie to the desolate areas of the west. In 1869, the first transcontinental railroad connecting the Pacific coast was completed, and railroads spread across the eastern half of the federal government. As of the end of 2017, the total length of railways in the United States was 260,000 kilometers. According to statistics from the U.S. Department of Transportation, freight railroads carried an average of 55 million tons of cargo per day in 2013, valued at more than 49.3 billion U.S. dollars, and the annual transportation volume reached 1.858 billion tons. Unlike railway passenger transportation, which is basically managed by the government, railway freight is basically managed by private companies, which are responsible for the construction and maintenance of freight railways. From 1980 to 2017, private rail freight companies spent approximately US\$600 billion on the renewal and maintenance of locomotives, tracks, bridges, tunnels and other infrastructure; in 2017, this area spent approximately US\$28 billion. Compared with other freight industries, railway freight is both economical and energy-saving. From 1981 to 2017, rail freight rates fell by 40%. The overall situation of U.S. operations in 2019 is good, showing a trend of monthly growth, and passenger traffic and passenger turnover also show good development (Table 1.2).

Table 1.2 - The development of American railways in 2019

The development of American railways					
Month	Total mileage of railway operations (ten thousand miles)	Employee working hours (ten thousand hours)	Shunting mileage of marshalling yard (ten thousand miles)	Passenger traffic (ten thousand people)	Passenger turnover (ten thousand miles per person)
2019.5	5875.32	3633.46	693.47	5869.94	177795.76
2019.4	5751.62	3611.04	663.54	5658.89	167239.48
2019.3	5743.28	3622.17	696.62	5497.73	162720.64
2019.2	5234.25	3340.66	634.35	4948.56	139341.91
2019.1	5839.03	3678.74	684.81	5328.24	151954.39

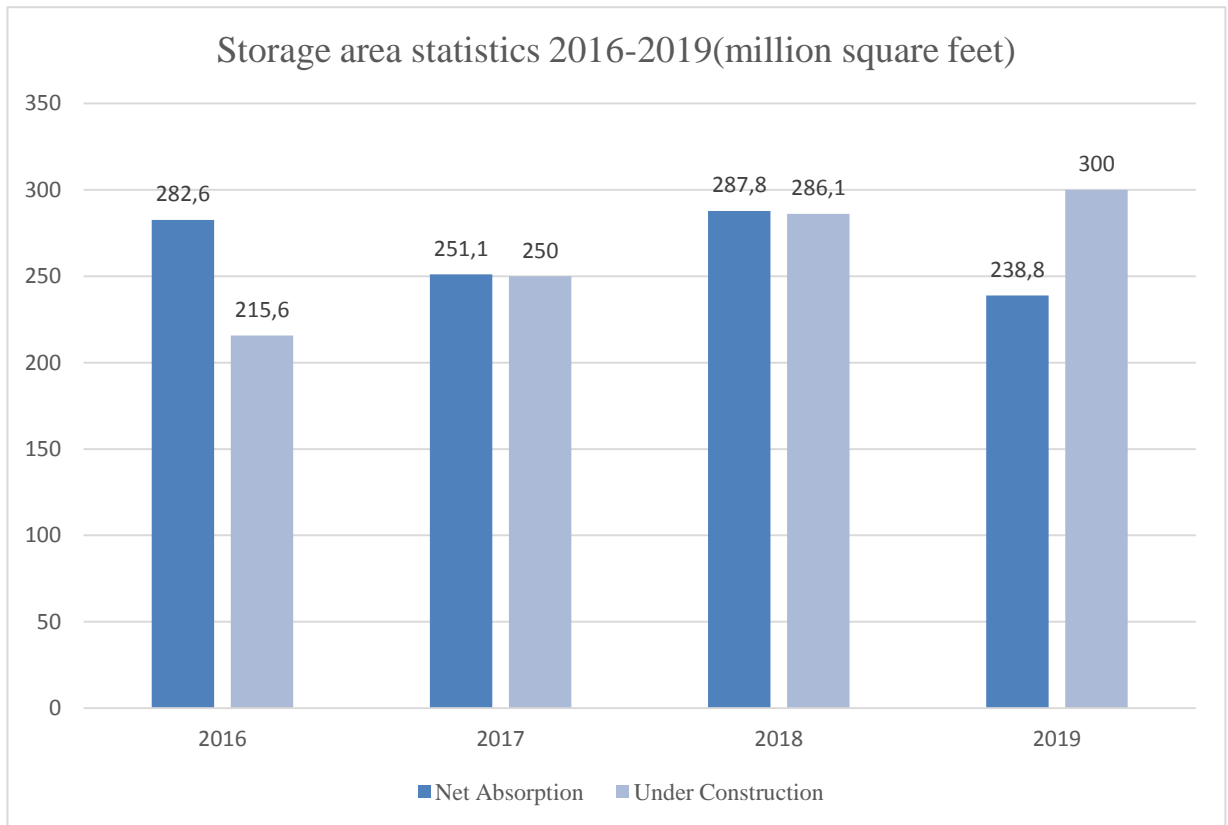
Civil aviation in the United States is very developed. According to the latest

data from the US Department of Transportation, there were 900 million flights in the US in 2018, carrying 2.74 million passengers daily. The number of airports in the United States reached 19,655, of which 5,104 were public airports. Major domestic airlines connect all the big cities, with smaller cities relying on feeder routes. All aviation branches are connected to one major aviation center. Cargo is also growing in importance, with about 6.5 billion ton-km flown annually on domestic routes for express and cargo transport. The United States uses international airlines to connect all parts of the world. Air transport accounts for 27 per cent of international exports and 22 per cent of imports. The main elements of aviation system infrastructure include airport runways and terminals, aircraft and air traffic control systems. In 2019, there are approximately 19,600 airports in the United States (Figure 6), ranging from rural grassy landing strips to large, paved, multi-runway airports. About a quarter of the airport is public facilities, including to provide services for a wide range of users of large commercial airports and general aviation airports. Three-quarters of the rest are private airports, which are usually relatively small. The number of airports serving nonstop international flights in the United States decreased from 207 in 2010 to 202 in 2018 and to 192 in 2019, reducing the number of commercial air service locations for the nation and the world. While fewer than 100 airports lost international service (e.g., Huntsville International Airport), about 250 airports gained international service during that time, such as Jackson Medgar Willie Evers International Airport and Brownfield Municipal Airport. Before international travel restrictions due to the COVID-19 pandemic, the number of air passengers traveling between the United States and foreign locations hit a record high in February 2020.

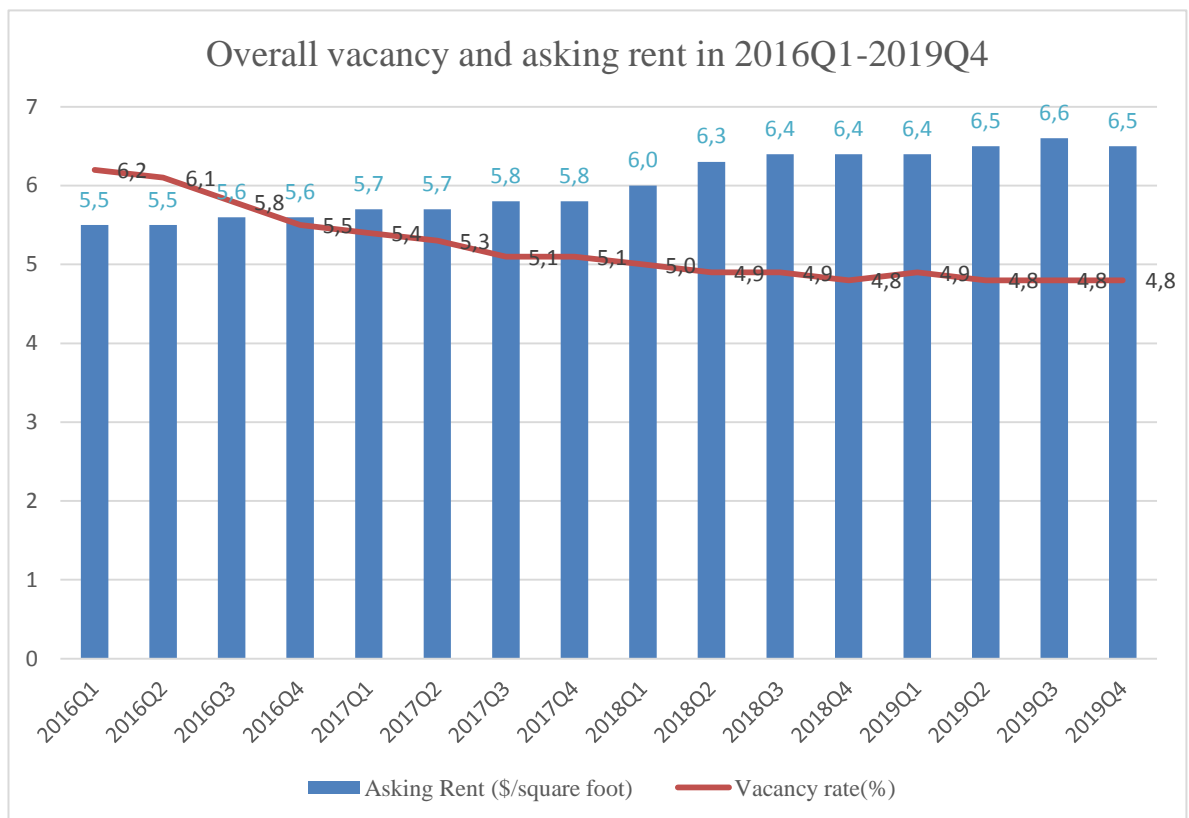
Table 1.3 - U.S. Transportation System: 2000,2010,2017,2018 and 2019

U.S. Air Transportation System: 2000, 2010, 2017, 2018, and 2019					
	2000	2010	2017	2018	2019
TOTAL, U.S. airports	19,281	19,802	19,655	19,627	19,636
Public use	5,317	5,175	5,104	5,099	5,080
Private use	13,964	14,353	14,263	14,528	14,556
Military	U	274	288	305	308
TOTAL, aircraft	225,359	230,555	218,953	219,224	219,963
General aviation aircraft	217,533	223,370	211,757	211,749	212,335
Commercial aircraft	7,826	7,185	7,196	7,475	7,628
Pilots	532,517	508,469	460,185	465,513	466,900
TOTAL, load factor	72.94	81.79	82.32	82.87	83.69
Domestic flights	71.14	82.07	84.42	84.33	84.94
International flights	75.02	81.48	80.51	81.59	82.58
TOTAL, passenger enplanements (thousands)	741,106	791,813	968,482	1,016,828	1,055,477
Enplanements on domestic flights	611,250	644,389	754,381	791,018	824,635
Enplanements on international flights of U.S. carriers	59,019	76,936	97,755	100,900	104,277
Enplanements on international flights of foreign carriers	70,837	70,488	116,346	124,910	126,565
TOTAL, revenue passenger-miles, U.S. carriers (millions)	708,903	809,068	969,904	1,016,996	1,060,860
Domestic, revenue passenger-miles (RPM) (millions)	515,598	564,695	693,818	730,426	762,890
International on U.S. carriers, revenue passenger-miles (RPM) (millions)	193,305	244,373	276,086	286,570	297,970
TOTAL, revenue ton-miles on U.S. carriers (millions)	101,703	117,422	138,095	145,569	149,559
Domestic, revenue ton-miles (RTM) (millions)	66,542	69,010	84,522	89,011	92,722
International on U.S. carriers, revenue ton-miles (RTM) (millions)	35,161	48,412	53,573	56,558	56,837

The warehousing market is stable in 2019. Rents continue to rise and vacancy rates remain near historic lows. E-commerce continues to drive the growth in demand for warehouses, especially in smaller, more convenient urban warehouses. The demand for silos further increased due to cargo backlogs caused by the COVID-19 disruption, resulting in a net uptake of 233.8 million square feet in 2019. New supply grew at an even faster pace, reaching 300 million square feet of floor space, up 7% from 2018. However, the vacancy rate remained unchanged at 4.8%.



Picture 1.4 - Storage area statistics 2016-2019(million square feet)



Picture 1.5 - Overall vacancy and asking rent in 2016Q1-2019Q4

Logistics is one of the most professional core areas in Germany. Almost everywhere in Germany, logistics activities take place 24 hours a day, 365 days a year. Germany's logistics industry has 2.85 million people with an annual turnover of more than 230 billion euros. In terms of market volume, logistics is the third largest industry in Germany after car manufacturing and trade. The logistics sector of industry and trade accounts for more than half of the industry's total turnover, while logistics service providers account for more than 50%. In 2019, the logistics industry achieved a turnover of about 279 billion euros. The development of logistics industry in Germany stems from its more expensive investment and the construction of logistics infrastructure.

German road traffic is very developed. In 2018, the total length of the intercity highway network was over 230,000 kilometers, including 38,000 kilometers of federal trunk roads and nearly 13,000 kilometers of expressways. In 2018, the volume of road freight was 3.2 billion tons. The figure below shows the main modes and volume of transport in Germany in 2019. From this figure, we can see that road transport occupies a large position in the statistics of freight transport, and many goods are transported by road.

Germany's railway network is one of the core parts of Europe's transport roads. At 33,300 kilometers, it is the largest in the European Union, connecting all the big cities and almost all the small cities. By the end of November 2018, Germany's rail freight volume was 349 million tons, an increase of 8 percent year on year. The domestic cargo volume accounts for about 2/3 of the total cargo volume. The number of railway passengers in 2018 was 2.8 billion, an increase of 4.1 percent year-on-year. German civil aviation transport industry developed, Frankfurt airport is one of the world's major airports. In 2018, German air cargo (including air mail) throughput totaled 4.9 million tons, up 1% year on year. According to the German Federal Statistics Office, in 2018, the German aviation industry carried 123 million passengers, an increase of 4.2% year on year, including 23.54 million domestic passengers and 99.03 million international passengers. In Germany's top eight cities in terms of storage area in 2019, the

storage area reached 2,429,900 square meters

Table 1.4 - Quantities carried in 2019 by main traffic relations and mode of transport

Quantities carried in 2019, by main traffic relations and mode of transport						
Mode of transport	Unit	Total	national transport	of which		
				International transport		transit
				outgoing	incoming	
Rail transport	1000tonnes	340558	225023	45913	55088	14535
Inland waterways transport	1000tonnes	205114	52973	48879	90474	12788
Maritime transport	1000tonnes	290233	3286	112776	174771	-
Road transport by national lorries	1000tonnes	3208197	3093837	58001	40178	1649
Change on a year earlier						
Rail transport	%	-	-	-	-	-
Inland waterways transport	%	3.6	1.7	10.5	0.3	12.4
Maritime transport	%	-0.1	-12.3	-0.7	0.5	-
Road transport by national lorries	%	0.2	0.5	-7.4	-6.1	11.6

Logistics is the main means of transport for economic and trade, and the development of the logistics industry will also drive the development of the global trade industry. According to the report "Global Trade Data and Prospects" released by the World Trade Organization, in 2018, the total global trade volume was about 39.342 trillion US dollars, with an increase of 3.0%. Among them, the total value of global merchandise exports was 19.475 trillion US dollars, and the total value of global merchandise imports was about 19.867 trillion US dollars. In 2018, the total trade volume of the United States was about \$4.278 trillion, up 8.2 percent year on year, accounting for 10.87 percent of the world's total trade. In 2018, Germany's total trade volume was about \$2.847 trillion, accounting for 7.2 percent of the world's total trade. The value of global trade grew by about 10% in 2017 and 2018, reaching \$25 trillion. According to the data of the US Department of Commerce, in 2019, the total foreign trade of the US stood at US \$4,143.577 billion, down 1.5%

from the same period last year. Among them, the total export volume was US \$1,645.174 billion, down by 1.25%. Total imports were US \$249.8402 billion, down 1.67%. The trade deficit was US \$853.228 billion, down 2.47 percent from US \$874.814 billion in the same period last year. According to Japanese customs statistics, the value of Japan's imports and exports of goods in 2018 was \$1,466.57 billion. In 2019, Japan's imports and exports of goods were US \$1,426.27 billion, down by 4.1% compared with the previous year (the same below). In 2019, Germany's trade in goods continued to decline. According to the statistics of Eurostat, Germany's import and export volume of goods was US \$2,733.43 billion, down 4.3% compared with the same period last year (the same below). Among them, the export was 1,449.19 billion US dollars, down 4.6%; \$1,234.25 billion, down 3.9 percent. The trade surplus was US \$254.94 billion, down 7.7%.

Although in 2019, affected by the new crown epidemic, the development of global aviation, tourism, transportation and other industries will be affected, but this is only a temporary global market environment problem, which is caused by objective environmental factors. The changes in the market do not represent future market sentiment.

Chapter Summary: We have a general understanding of the logistics industry and international trade concepts, related features, classifications and other basic information. At the same time, through a large amount of statistical data, we can know that the current situation of the global logistics industry is developing well, and the development of technical facilities is good. A large amount of investment in development. At the same time, the volume of global goods import and export transactions continues to create new history. As a result, global international trade is in good condition, and international trade markets and trade forms have excellent development prospects.

2 BASIC ANALYSIS OF THE DEVELOPMENT OF CHINA'S LOGISTICS INDUSTRY AND INTERNATIONAL TRADE

The contemporary international trade and logistics industry is developing vigorously along with the wave of global economic integration. In today's world, seeking peace and seeking cooperation are the common aspirations of all countries. Therefore, under the general background of countries actively participating in international trade, the number and scale of international trade and logistics industries have increased and expanded significantly. On the basis of the trade network established by various countries in the past, with the rise of e-commerce in international trade, the development of international trade logistics industry has played an increasingly prominent role in trade between countries[12]. As far as my country is concerned, my country has implemented a more proactive opening policy and actively participated in the wave of economic globalization, providing a good market environment for my country's international trade and logistics.

In the critical period of China's current economic development, the realization of high-quality economic development is inseparable from the development of a higher level of open economy, which puts forward higher requirements for the transformation and upgrading of international trade and international trade logistics.

2.1 Development history and current situation of China's logistics industry

China's logistics industry has developed so far. Although it started late compared with other developed countries, it also has a relatively long history of development. Before China's reform and opening up, it practiced a highly centralized planned economy. During this period, all the social means of production and consumption were strictly distributed according to national policies. Although there was an objective existence of logistics at that time, there was no definite concept of logistics. It was not until 1979, when a Chinese delegation visited Japan to participate in an international logistics conference, that

they realized the concept of “logistics” and introduced the concept to China. Compared with other developed countries, China has a late start in logistics. Since the founding of the People's Republic of China in 1949, the development of China's logistics can be roughly divided into four periods:

A. Early stage of development (1949-1979)

At this stage, China has just been established, and the long-standing war period ended. At this time, the country is in a period of recovery of the national economy. The domestic industrial and agricultural production levels are very low, the economic foundation is poor, and the country attaches importance to production and despises flow. There is a big gap between logistics at this stage and the logistics mentioned later. During this period, only a few transportation companies and single-function warehouses appeared. During this period, the quantity and development of various logistics infrastructures are at a relatively low level. However, with the development of production and the continuous recovery of the national economy, a material circulation network system has been initially established. In terms of logistics management, progress has been achieved in the organization of fixed-point supply.

B. Booming Period (1979-1990)

During this period, China's economy was in the transition period from the planned economy era to the market economy era. With the implementation of China's reform and opening up policy, remarkable achievements were made in economic construction and the pace of national economic construction was significantly accelerated. The circulation rate of domestic goods and the scale of national trade continue to expand. The era in which the means of production and consumption are distributed by the government has come to an end. The means of production begin to break regional restrictions and circulate among different regions. Logistics activities began to consider the overall economic benefits, consider the cost of logistics links, transportation, storage, packaging, loading and unloading to the systematic way of change, the country's infrastructure, logistics and transportation of the main link of the road, railway, airport, wharf, warehouse

and so on also developed accordingly. Of course, in addition to the increase of logistics facilities, but also improve the level of logistics technology and equipment, began to build three-dimensional automated warehouse, people began to gradually change the concept of the isolated treatment of packaging, loading and unloading, transportation, storage and other functions, and began to investigate the role of these links from a systematic point of view. In terms of logistics infrastructure, taking transportation as an example, by the end of 1990, the total length of China's land, water and air network had witnessed a significant increase, especially in the construction of highways, with more than 4,000 kilometers of expressways and special motorways built. The number of new and renovated expressways in the past decade is more than three times that in the previous 30 years combined.

Academic groups related to logistics were also established during this period, and they actively and effectively carried out domestic and international logistics academic exchange activities to understand and learn foreign advanced logistics management experience, which promoted my country to accelerate the absorption of foreign advanced logistics concepts and technologies. The Chinese Society of Logistics and Circulation successfully hosted the 8th International Logistics Conference in Beijing in May 1989, which played a positive role in promoting China's logistics development. Since then, the study of logistics has been paid more attention.

C. Phase of rapid development and internationalization (1991-present)

In 1992, China formally established the goal of socialist market economy. With the experience of a relatively free and loose market economic environment, the economy grew rapidly, the buyer's market gradually took shape, the market competition became more and more fierce, and the dominant position of retail enterprises and commercial chain enterprises in the market gradually strengthened. With the entry of foreign businessmen into China's economic market and the introduction of modern logistics concepts and logistics network system, more and more production enterprises have recognized that logistics capacity plays an

important role in market competition. At the same time, a number of “foreign-funded” storage and transportation, logistics enterprises emerged at the historic moment, traditional storage and transportation enterprises began to develop into integrated logistics enterprises, but also a number of new national logistics enterprises. In this case, some production and retail enterprises began to withdraw from the field of logistics, no longer build warehouses, turn to the market to seek qualified logistics agents, which marks the start of China's modern logistics industry.

During the “Eighth Five-Year Plan” period (1991-1995), China's national economy developed rapidly. In 1992, the GDP grew by 12.8%. The rapid development of the national economy inevitably requires the logistics system to adapt to it. For this reason, the state has adopted a series of important measures for the rapid development of the logistics industry. For example, in the "Eighth Five-Year Plan", the development of the tertiary industry, especially the logistics industry, was clearly focused. Among the 10 super large projects that were started during this period, the logistics industry accounted for five.

During the “Ninth Five-Year Plan” period (1996-2000), China's total volume of mass transportation continued to grow rapidly, reaching 1.255 billion tons in 1997, and the corresponding volume of cargo turnover reached 2,333.7 billion ton-km. During this period, China has also accelerated the construction of the logistics system to standardization and internationalization. Due to the introduction of many household appliances production lines and automobile production lines, foreign advanced logistics technology has been disseminated, which has effectively promoted the improvement of China's logistics technology level. At the same time, China's shipping industry has also begun to pay comprehensive attention to the development of the logistics industry, one after another involved in the field of integrated logistics, many influential logistics conferences have attracted the attention of the whole shipping industry to the logistics this extension of the field. With the large-scale shipping enterprises have stepped into the logistics industry, China's comprehensive logistics industry finally developed at a real high speed. All

these show that China's logistics industry is moving steadily toward modernization.

In the “Tenth Five-Year Plan” (2001-2005), the state for the first time included logistics as a focus of development. Among the key industries to support the technical reform of Treasury bonds with interest discount of 9 billion yuan announced by the former state economic and trade commission in 2002, the circulation industry has for the first time become one of the key industries to support the technical reform of Treasury bonds in the top 10 industries. At the end of 2004, foreign companies will be allowed to own trucking services, and in 2005 they will be allowed to take full ownership of companies in freight forwarding, third-party logistics and customer intermediary services, and after 2006 they will be allowed to own rail services.

During China's “Eleventh Five-Year Plan” period (2006-2010), the goal of modern logistics development is to basically establish a fast, efficient, safe, convenient and internationally competitive modern logistics service system by 2010, and greatly improve logistics The level of socialization, specialization and modernization.

During the “Twelfth Five-Year Plan” period (2011-2015), China took strategic adjustment of economic structure as the main focus of accelerating the transformation of its development model. Accelerating the development of modern agriculture, perfecting the matching agricultural socialized service system, and building the circulation, storage and emergency support system of agricultural products have become the key links, which have put forward new and higher requirements for the development of the national logistics industry. To strengthen the construction of environment for the development of modern logistics industry, in terms of the construction of hard environment, first, we should make overall planning and perfect the layout of logistics network. Second, we should strengthen the infrastructure construction of important logistics nodes. The third is to promote the construction of the logistics public information network represented by the Internet of Things under the leadership of the state, so as to provide the technical basis for the informatization and intelligentization of modern logistics.

China is in the “Thirteenth Five-Year Plan” (2016-2020). This period is the decisive stage for China to build a well-off society in an all-round way. It is necessary to promote the integration, containerization, networking, socialization and intelligent development of transportation and logistics. Build a new system of integrated development of transportation and logistics. In this period, we will focus on improving technical standards, strengthening the connection of product production, circulation and other whole-chain facilities and equipment standards, and using the "Internet" as the link to achieve efficient use of transportation and logistics resources.

During the “Fourteenth Five-Year Plan” period (2021-2025), it is pointed out that in the future development process, the modernization level of industrial supply chain should be improved, the infrastructure construction should be coordinated and promoted, and the modern infrastructure system with complete system, efficient and practical, only green, safe and reliable should be built. System layout information infrastructure, the fifth generation of mobile communications, industrial Internet, big data center and other construction. We will move faster to build a strong country in transport, improve comprehensive transport corridors, transport hubs and logistics networks, accelerate the network of rail transit in urban agglomerations and metropolitan areas, and improve the development of transport in rural and border areas[26].

In 2019, the overall demand for social logistics has maintained steady growth, but the growth rate has slowed down, entering a medium-to-high-speed development stage. From the perspective of total scale, China's total social logistics reached 298.0 trillion yuan in 2019. From the perspective of growth rate, the total social logistics volume for the whole year increased by 5.9% year-on-year, and the growth rate was down 0.5% from the previous year. In the first quarter and the first half of the year, the year-on-year growth rate remained above 6%, and fell to less than 6% in the first three quarters, and there was a slight rebound in the two months at the end of the year.

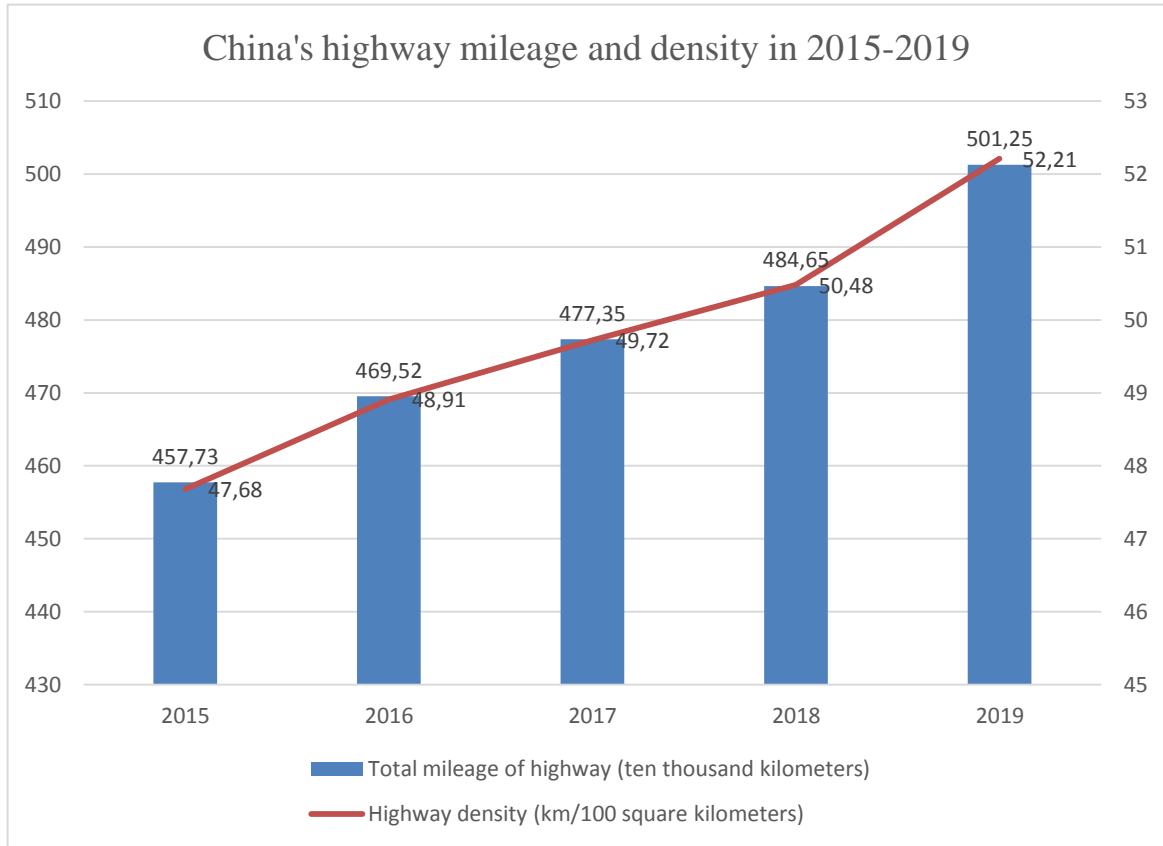
The construction of logistics infrastructure also develops gradually with the

development of logistics industry and obtains relatively good results. As far as the development of China's logistics industry in 2019 is concerned, 2019 is a key year for China to complete the building of a moderately prosperous society in all respects and realize the first centenary goal of China. In this year, the government issued a series of policies to promote the national economic development. With the support of these policies, the industrial development and infrastructure are constantly improved. For the logistics industry to high quality development to provide a strong market support and demand basis.

The construction of high-quality road network is further advanced. In 2019, 330,000 kilometers of roads were added, and the total length of roads increased to approximately 4.85 million kilometers. The number of expressways has grown to 142,600 kilometers, and both the mileage and the scale of the system rank first in the world. The total length of rural roads exceeded 4.04 million kilometers, the rate of hardened roads exceeded 99.6%, the newly rebuilt rural roads of 290,000 kilometers, the implementation of road renovation projects reached 79,000 kilometers, and the construction of more than 8,300 kilometers of resource roads, tourist roads and industrial roads in rural areas. At the end of the year, the total mileage of highways nationwide was 5.0125 million kilometers, an increase of 166,000 kilometers over the previous year. The highway density is 52.21 kilometers/100 square kilometers, an increase of 1.73 kilometers/100 square kilometers. The highway maintenance mileage is 4,953,100 kilometers, accounting for 98.8% of the total highway mileage.

In 2019, the efficiency of road freight transportation continued to improve, and the efficiency index of road freight transportation was 97.47, a significant increase of 4.14 points compared with the previous year. The efficiency index of road freight transportation in each month was higher than the level of the previous year. In addition, China's logistics industry to diversify the allocation of logistics and transport assets, according to the statistics of China Association of Automobile Manufacturers, truck sales reached 3.85 million, slightly down 0.9% year on year; Among them, heavy truck sales hit a record high of more than 1.174 million units,

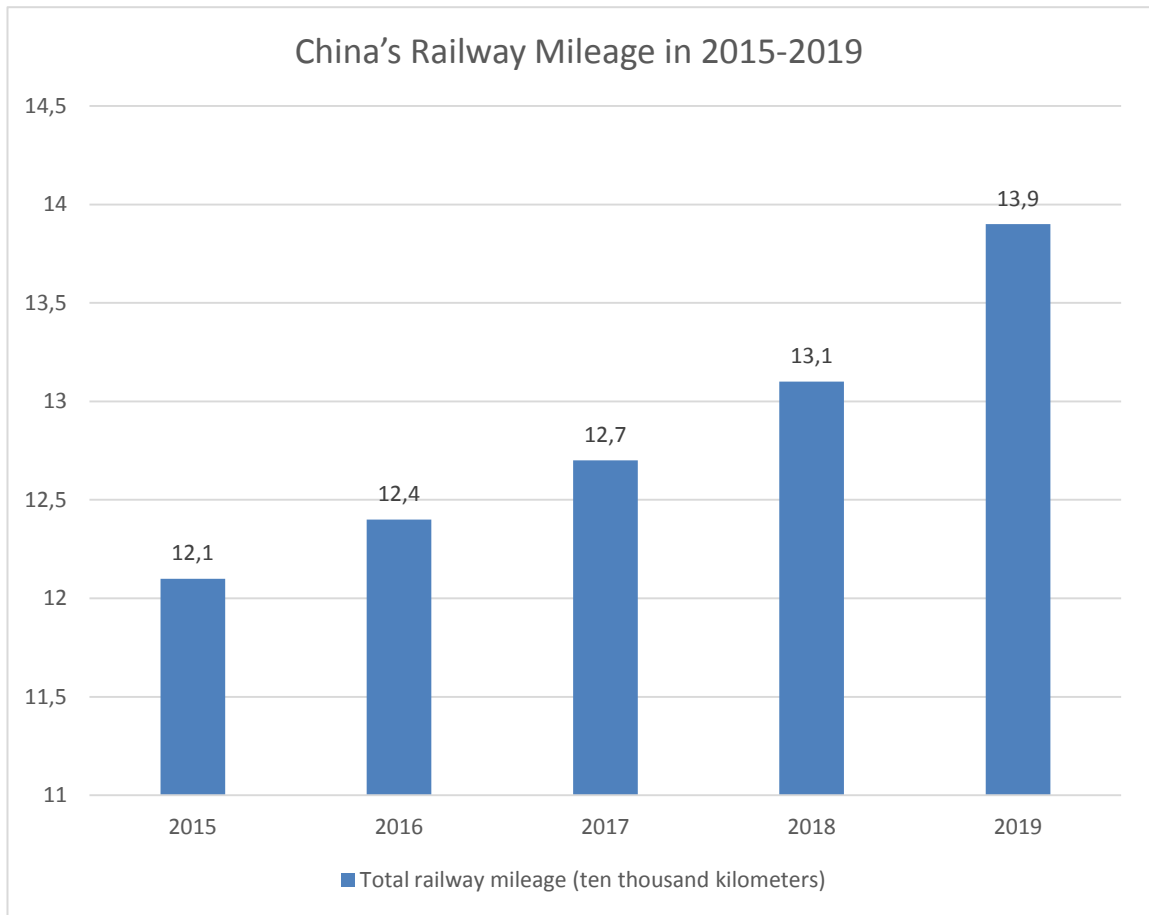
up 2.3 percent year on year.



Picture 2.1 - China's highway mileage and density in 2015-2019

Natural gas trucks have become a major means of transportation in the freight market, which has reduced the fuel consumption cost of traditional transportation. At the same time, the replacement of diesel trucks around the speed up, transport vehicles from high fuel consumption vehicles to low-cost natural gas vehicles.

In 2019, China's national railway fixed asset investment completed 802.9 billion yuan, and 8,489 kilometers of new lines were put into operation, of which 5,474 kilometers were high-speed railways. The national operating mileage was more than 139,000 kilometers, an increase of 6.1% over the previous year. Among them, the high-speed railway was 35,000 kilometers, and the national railway network density was 145.5 kilometers/10,000 square kilometers, an increase of 9.5 kilometers/10,000 square kilometers.



Picture 2.2 - China's railway mileage in 2015-2019

Among them, the mileage of double-track is 83,000 kilometers, with a double-track rate of 59.0%. The electrified mileage is 100,000km, and the electrification rate is 71.9%. The total length of railways in service in the western region is 56,000 kilometers. Fifty-one new lines, including the Beijing-Zhangjiagou high-speed railway, the Beijing-Xiongxiong intercity railway (Beijing section), and the Chengdu-Guizhou high-speed railway, have been put into operation.

In 2019, there were 238 transportation airports in China (excluding Hong Kong, Macau and Taiwan), an increase of 3 over the previous year. Among them, there were 237 airports for scheduled flights, 234 cities for scheduled flights, and new airports for scheduled flights during the year⁴ One: Beijing Daxing International Airport, Bazhong Enyang Airport, Chongqing Wushan Airport, Ganzi Gesar Airport. One city was newly opened by scheduled flights during the year.

In 2019, 59 airports had an annual cargo throughput of more than 10,000 tons,

6 more than the previous year. The cargo throughput of all domestic airports accounted for 98.4% of the total cargo throughput, the same as that of the same period last year. Among them, the cargo throughput of Beijing, Shanghai and Guangzhou accounted for 46.5 percent of the total cargo throughput of domestic airports, down 2.3 percentage points from the previous year. There were 180 airports with an annual cargo handling capacity of less than 10,000 tons, 2 fewer than last year. The cargo handling capacity of all domestic airports accounted for 1.6% of the total cargo handling capacity, the same as that of the same period last year.

In 2019, China's domestic warehousing scale continued to expand, and the situation was good. The industry's overall supply and demand has increased, and profits have continued to increase. However, as costs and expenditures soar, profitability is still insufficient. In 2019, the average value of the new orders and business activity expectation indexes of the warehousing industry were 57.4% and 58.4%, respectively, which were slightly higher than those in 2018. The confidence of the company was significantly restored, and the industry demand expectations were more optimistic. The following picture shows the situation of China's warehousing index from January to December 2019.

Stable growth of storage resources, high standard storage gap, insufficient cold storage resources. By the end of 2019, the total area of common warehouses nationwide exceeded 300 million square meters, accounting for more than 80 percent of the total warehouse volume. Due to strong adaptability and high utilization rate, the scale of China's general warehouse is also expanding.



Picture 2.3 - China's warehousing index in mileage in 201901-201912

2.2 The history and current situation of China's international trade development

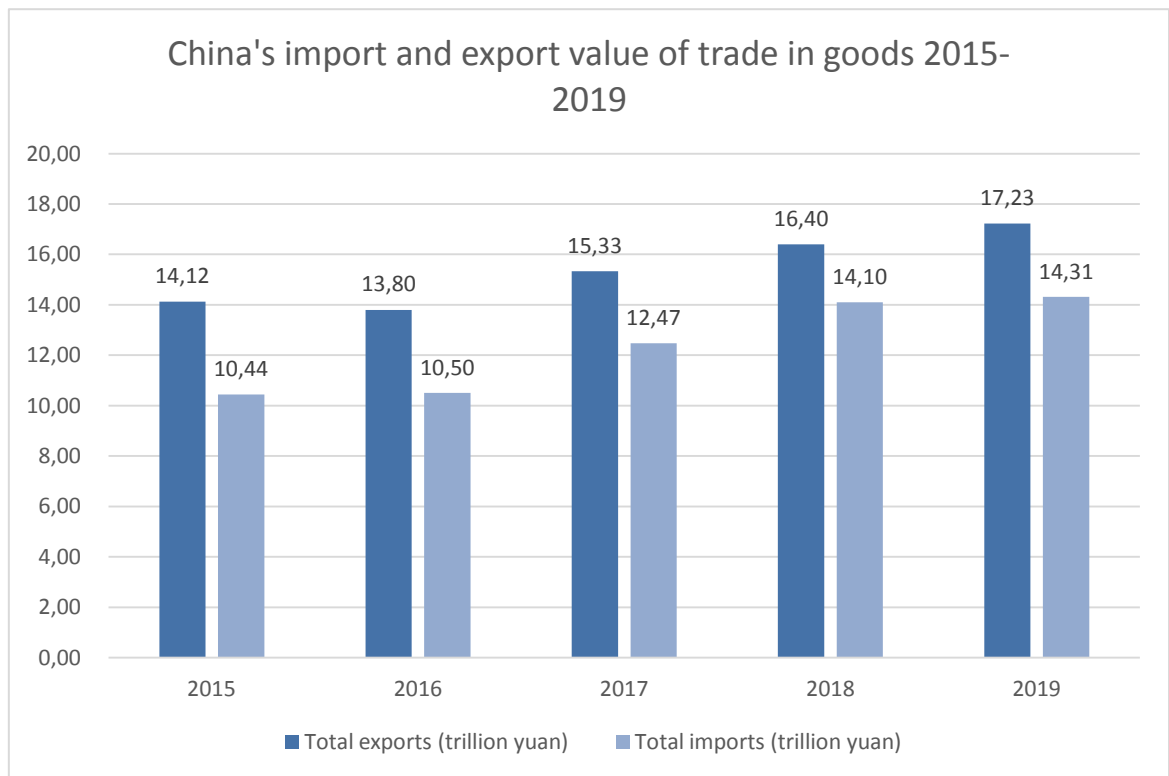
In history, China's foreign trade has never been interrupted. From the Warring States Period to the Ming Dynasty, China's trade played a favorable position. During this period, China's foreign trade has experienced three important leaps[13]. These three leaps have also brought major changes to people's production and life. The first leap was in the period of Emperor Wu of the Han Dynasty. Explorers opened up a trade route represented by the Silk Road. Due to the limitations of land transportation, China has made a second leap: from land to water transportation. The explorers of the Song Dynasty established the largest sailing fleet and merchant fleet in human history. When the navigation technology became more mature, the third leap came to a halt. After the Ming Dynasty, European merchants flocked to this ancient civilization with legends of gold everywhere. During this period, China's trade surplus and silver inflow established

China's trading position.

After the Ming Dynasty, China had a history of humiliation. China was opened by western countries with cannons and opium. China's foreign trade in the extreme humiliation, extreme unbalanced conditions passively embarked on the road of development paved with blood and tears. During the period from 1840 to 1949, China's foreign trade was generally characterized by backwardness and abnormal development. Because of the loss of sovereignty, it belongs to the subordinate position in the international trade, the regional distribution of trade is very unbalanced, and the trade benefits continue to outflow [14].

In modern times, China basically completed the socialist transformation of private ownership of the means of production in the early 1950s, and China has been exploring and advancing on the road of developing international trade. After the national recovery period, the First Five-Year Plan and the Second Five-Year Plan, China's foreign trade has entered a brand new stage. After the Third Plenary Session of the Tenth Central Committee of the Communist Party of China, my country's foreign trade has seen a rapid development. Import and export trade has grown rapidly and the commodity structure has also been greatly improved. In the past two decades, China's international trade level has continued to rise steadily.

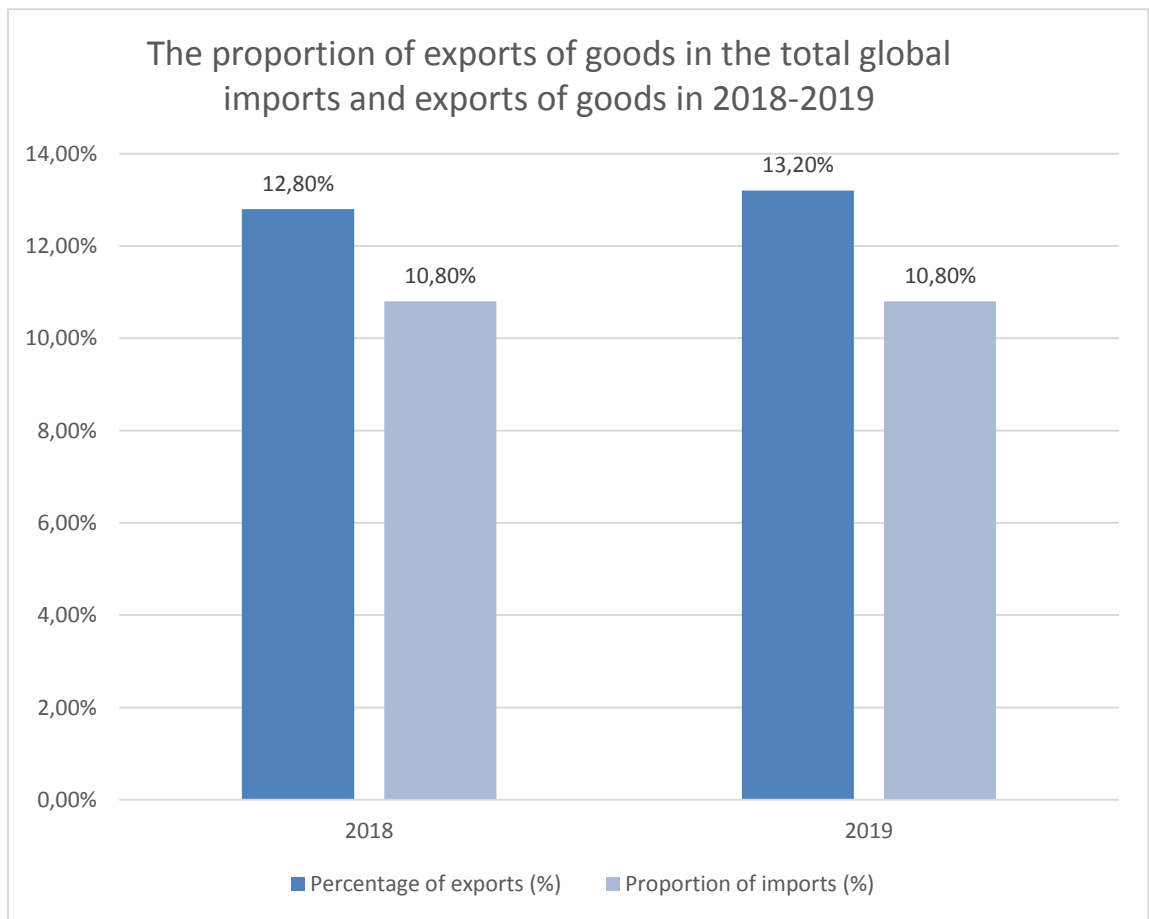
Downturn in 2019, in the face of the world economy, international trade friction intensified, domestic economy downward pressure, and many other difficult challenges, in the global economy and trade under the background of the overall slowdown, China's foreign trade growth, contrarian scale hit a record high, to achieve stability in the quality, development of high quality had made new achievements, and make a positive contribution to the national economic and social development, We will inject impetus into the recovery and growth of global economy and trade. In 2019, China's total volume of imports and exports in goods was 31.54 trillion yuan, of which exports were 17.23 trillion yuan, up by 5.0%; Imports were 14.31 trillion yuan, up 1.6 percent; The trade surplus was 2.92 trillion yuan, an increase of 25.4%. The scale of imports and exports and imports all reached a record high.



Picture 2.4 - China's import and export value of trade in goods 2015-2019

In 2019, China's exports of goods accounted for 13.2% of total global exports of goods, an increase of 0.4 percentage points over the previous year. The share of exports in the international market has steadily increased; imports of goods accounted for 10.8% of total global imports of goods, compared with the previous year. The share of imports in the international market remained at the highest level in history.

Trade between China and countries along the "One Belt One Road" Belt and Road is developing well, and cooperation potential is constantly being unleashed, which is becoming a new driving force for China's foreign trade development. Imports and exports to Latin America and Africa grew by 8.0% and 6.8% respectively, 4.6 and 3.4 percentage points higher than the overall growth of imports and exports, accounting for 6.9% and 4.6% of total imports and exports, respectively.



Picture 2.5 - The proportion of exports of goods in the total global imports and exports of goods in 2018-2019

In 2019, the downward trend of the global economy is severe, and the trade frictions provoked by the United States have brought many uncertain problems to the global economy. In particular, the trade war initiated by the United States against China has impacted the economic and trade relations between the two countries. The U.S.'s proposal to impose additional tariffs on US\$200 billion of goods imported from China has not only brought pressure on the operation of Chinese export companies, but also disrupted the global supply chain of some U.S. companies, and transmitted impacts along the supply chain. , Freight forwarding, warehousing and other logistics industries.

2.3 The relationship and influence mechanism of logistics and international trade

Before the occurrence of international trade, the scope of logistics activities

was only limited to the border, with the emergence and development of international trade, the circulation area and scope of domestic logistics can be extended and expanded, breaking through the border restrictions, the emergence of the form of logistics between countries. At the same time, it is precisely because of the continuous expansion of international trade, the demand for logistics continues to grow, which makes the logistics technology and management level increasingly mature, and speeds up the development of international logistics[15]. Under the new situation of the constant change of international trade mode, logistics has put forward higher requirements in terms of quality, efficiency and safety, and promoted the refined, professional and green development direction of logistics.

International trade promotes the development of logistics[16]. First, international trade promotes the emergence and development of international logistics, which has created a new pattern of subdivision in the logistics industry. To achieve long-term development of logistics, it needs to be supported by frequent international trade. If countries lack mutual trade, then the development of logistics will lose their previous business, and with the disappearance of international trade, international logistics will no longer disappear. This shows that the role of international trade in promoting the development of logistics, China needs to strengthen trade with other countries, so as to better promote the development of international logistics. Under the deepening development of economic globalization, logistics to modern logistics transformation, more and more multinational companies around the world began to implement centralized development, purchase, production, and logistics from the original simple goods transportation into a collection of storage, packaging, transportation and information processing and other functions into one comprehensive logistics, under the continuous development of international trade, China's logistics began to modernize the direction of continuous development[17]. Second, international trade promotes the improvement of logistics system. The continuous development of international trade makes the growing demand of logistics, the resulting form of international logistics, the logistics form of the emerging gradually evolved into a

more organic system, and of the development of the industry agglomeration in the international division of labor under the background of increasingly refined, a lot of production and sales of enterprise logistics outsourcing, logistics service development, start up or down Logistics consulting, logistics order management, logistics inventory control also continue to expand[18].

The reverse driving effect of logistics on the development of international trade. First, changes in logistics costs have an important impact on the development of international trade. Logistics cost is a combination of the costs and expenses that need to be paid for the entire process from the completion of production to the sale of goods in order to better realize international trade. It specifically includes the logistics costs of export trade in the three stages of exporting country, importing country, and international transportation. Logistics cost is an important cost for the development of international trade[19]. When the cost changes, the trade direction will also change accordingly, and product sales will flow to the country's market with lower logistics costs. The rapid development of modern logistics provides important support for international trade. First, reduce trade operating costs. The development of international trade to enhance trade efficiency is deeply benefited by the development advantages of each country's economy, among which the comparative cost is an important embodiment of the advantages[20]. With the continuous development of social economy, the development space of production and sales will be smaller for cost reduction, but the space of logistics will have a broader development space. The development of modern logistics can minimize the cost of logistics by utilizing the inverse relationship of benefits between logistics elements and the coordination and coordination of various functions so as to reduce the development cost of international trade. Secondly, the development of logistics industry expanded the scale of trade development. At present, China has a large number of foreign trade partners, including Japan, the United States and the European Union. Its export volume to these three countries accounts for about half of the total. The high dependence of foreign trade development limits the expansion of market size to

some extent.

However, modern logistics is an important way for the development of international trade, and it plays a large-scale role in the development of international trade. Especially with the improvement of transportation facilities and infrastructure construction, international trade import and export exchanges are more convenient, and it is the scale of international trade. The expansion provided good conditions for support. Finally, the development of the logistics industry is conducive to trade participants to increase market response speed and enhance the market competitiveness of products. In view of the current irrational structure of import and export commodities and the low technical content of commodities, relevant personnel are required to accelerate the development of high-tech products and strengthen the management of product logistics[27]. With the development of international logistics, it can help import and export companies to speed up their response to the market, reduce product transaction costs, and enhance the marketability of products.

In 1817, David Ricardo put forward the principle of comparative advantage in his book *Political Economy and Taxation Principles*. He believes that the basis of international trade is not limited to absolute differences in production technology. As long as there are relative differences in production technology between countries, there will be relative differences in production costs and product prices, which will give countries comparative advantages in different products and enable international division of labor and international trade. In classical trade theory, the cost that reflects the price level of products mainly refers to the production cost, which does not take into account a series of costs generated in the circulation field of commodities, and the theoretical significance is greater than the practical significance. Later, Coase introduced transaction costs into Commodity Exchange, which gradually enriched and improved the trade system.

From the macroscopic level, compared to not consider the transaction cost of international trade activities, the introduction of the logistics cost make trade between countries access to the cost of goods increase, absolute advantage of all

kinds of goods have taken place in varying degrees of decline, and the advantage of high added value, easy to transport goods to rise, promote the export trade of this commodity. After the existence of logistics cost is determined, the change of cost will also have an impact on international trade: Suppose A countries through international trade access to commodity for country B into production cost plus the cost of goods produced by moving from country B to the country A logistics cost, when the country B through technical innovation and the effective management of the logistics cost reduction, constant cost, due to A country's own production and falling through the acquisition costs of international trade, at this time the goods from the comparative advantage to rise for country B, It has promoted the export of B country to this commodity.

From a micro-level analysis, suppose that the cost of a company to purchase a product is the sales price of the product plus the logistics costs incurred when the product is transferred to the company[21]. The company has two choices: domestic purchase, and the total cost is the domestic sales price plus the domestic sales price. Logistics costs; for foreign purchases, the cost is the foreign sales price plus international logistics costs. Assuming that the selling prices at home and abroad are the same, the company's purchase basis at this time is the cost comparison between domestic logistics and international logistics. Will choose to buy from abroad, which promotes the occurrence of international trade.

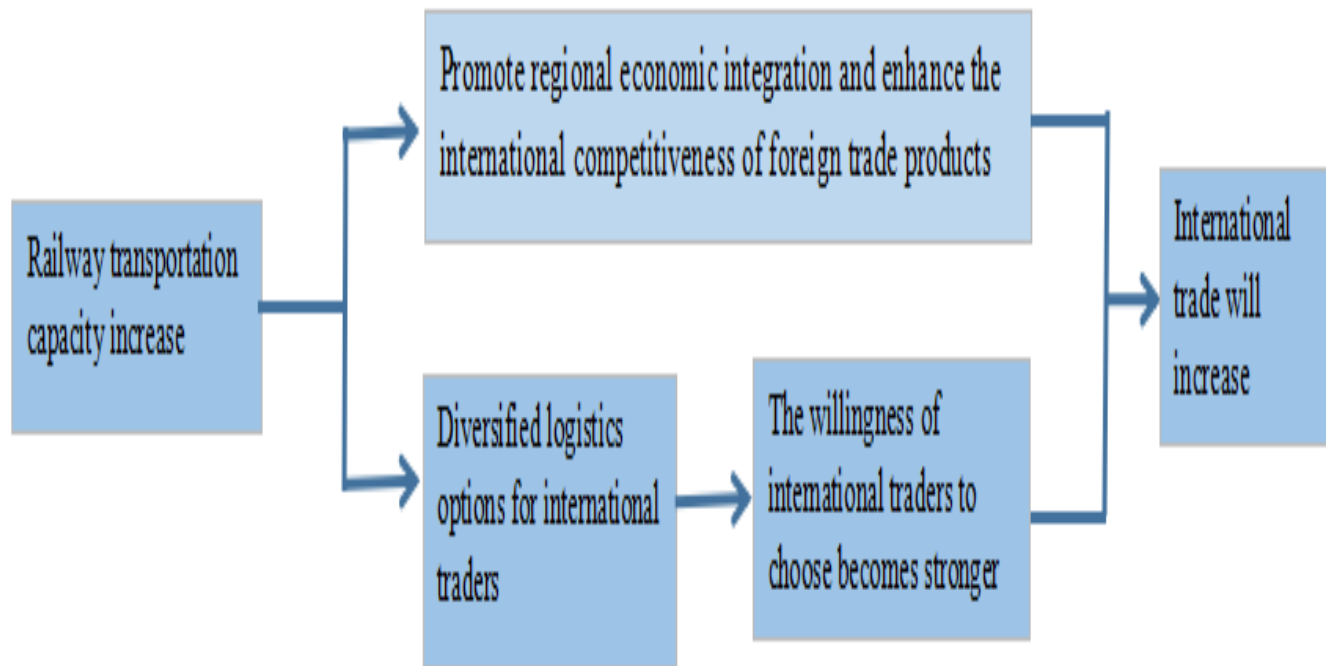
Today's social and economic development cannot be separated from international trade, which cannot be separated from logistics. Therefore, logistics efficiency and international trade are closely linked together. The academic community has studied the influence between the two, assuming that even if the international market has a large demand for a commodity, the volume of import and export trade will not decline because of the increase of logistics transportation costs and prices, which will eventually lead to the inefficiency of logistics and its operation efficiency will not be improved or improved[22]. Of course, the premise of this study is that the huge demand for commodities in the international market does not exist in reality, but the time-limitation factor of commodities has attracted

the attention of some scholars. Commodities requiring high timeliness also require high efficiency of logistics and transportation in international trade. Only efficient logistics and transportation efficiency can guarantee the punctual delivery of goods to the buyer, so that exporters can receive the payment and make profits. Nowadays, with the development of the world economy, more and more commodities are flowing around the world, and flowers, fruits, vegetables and other commodities from all over the world have begun to enter our daily life. These commodities with strong timeliness need higher logistics efficiency. Without efficient logistics efficiency, the development of international trade will be blocked, so it is necessary to improve logistics efficiency. Logistics efficiency is very important, because it can greatly reduce the time cost, prevent risks that may appear in international trade, and promote import and export trade.

The construction status of logistics infrastructure in various countries around the world can reflect the logistics and transportation status of the country, which can have a huge impact on the progress of international trade. When studying this issue, scholars believe that the logistics infrastructure only includes two parts: transportation. Cargo ships and port terminal loading and unloading equipment. Assuming that if the number of ships transporting goods increases and the freight rate decreases, then the logistics cost of goods transportation between countries will be reduced, and the reduction in cost will increase the profits of exporters and exporters will expand their exports. Another hypothesis is that the equipment for loading and unloading goods at the port and wharf has been built and completed, then the logistics efficiency between countries will be significantly improved, the trade efficiency will also be directly improved, and import and export trade will be developed to a large extent[23]. These two assumptions will abandon other factors that affect logistics, and only consider these two main influencing factors, which leads to the conclusion that the smooth development of international trade is affected by the construction of logistics infrastructure between countries.

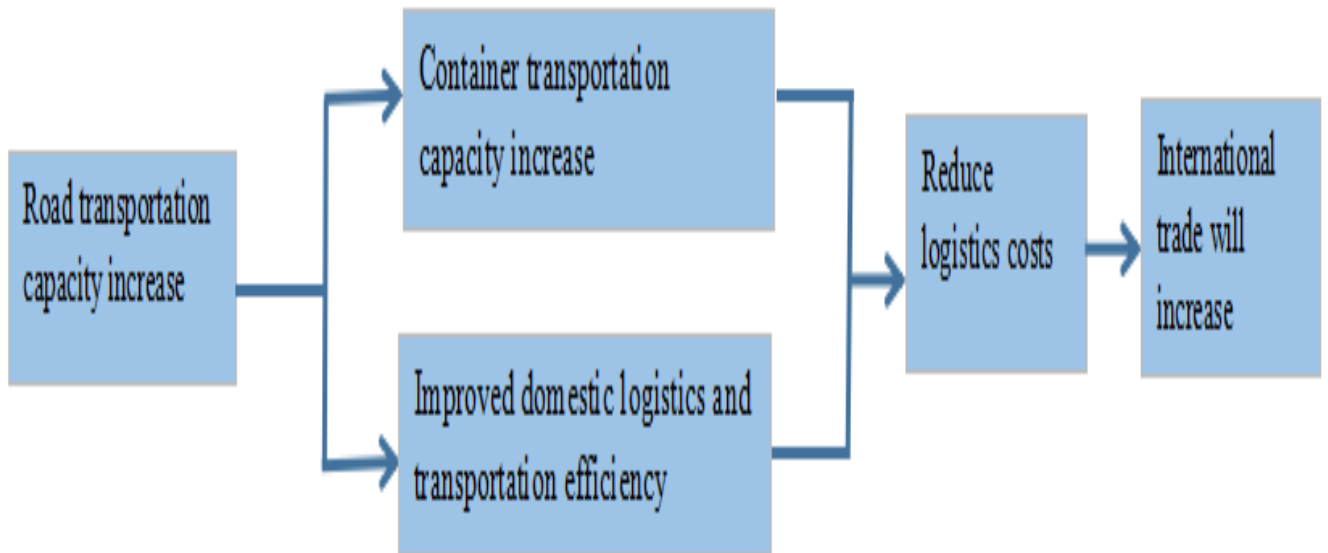
Taking railway transportation as an example, the development of railway transportation has a certain history in China. From the perspective of mainland

China, because its transportation speed is faster than water transportation and the transportation cost is lower than road transportation, railway freight transportation is still the backbone to undertake medium and long distance transportation. Railway freight focus will still be bulk goods, railway finished goods and container transport of the international market prospects are very broad.



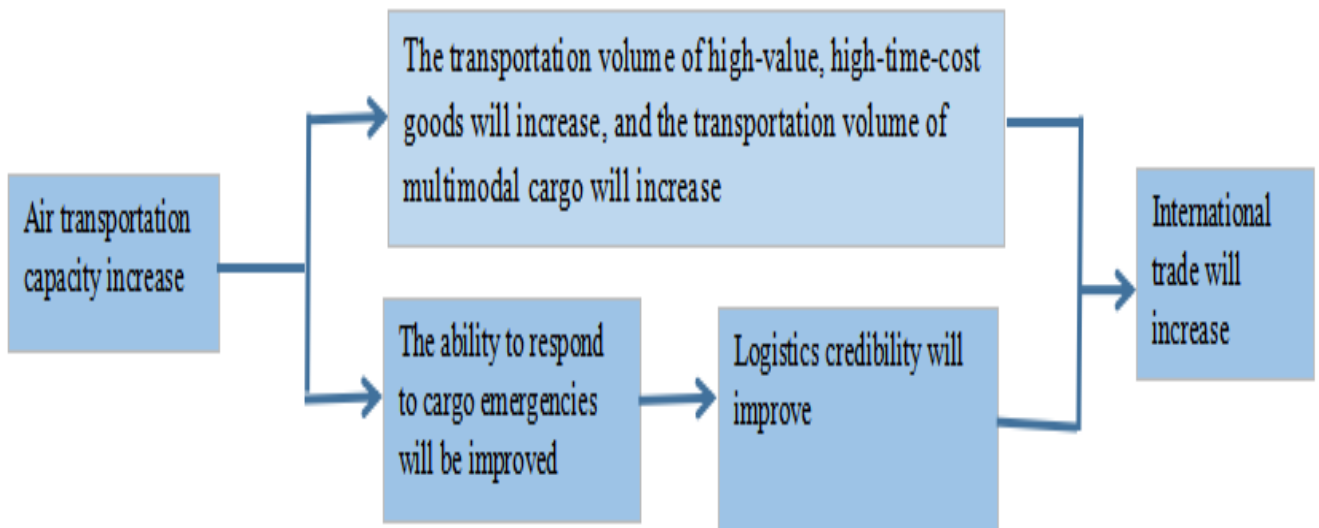
Picture 2.6 - The impact of railway transportation capacity on the logistics industry

Taking road infrastructure as an example, the impact of road infrastructure on international trade is reflected in many aspects. Although road transportation is more expensive than rail transportation, it is the only transportation method that can achieve “door-to-door” services. Convenience and universal road transportation has an irreplaceable position in international logistics[24]. In addition, the popularization of container transportation has put forward higher demands on the construction of highway infrastructure. Therefore, the improvement of highway transportation capacity is of great significance to improving the efficiency of logistics transportation.



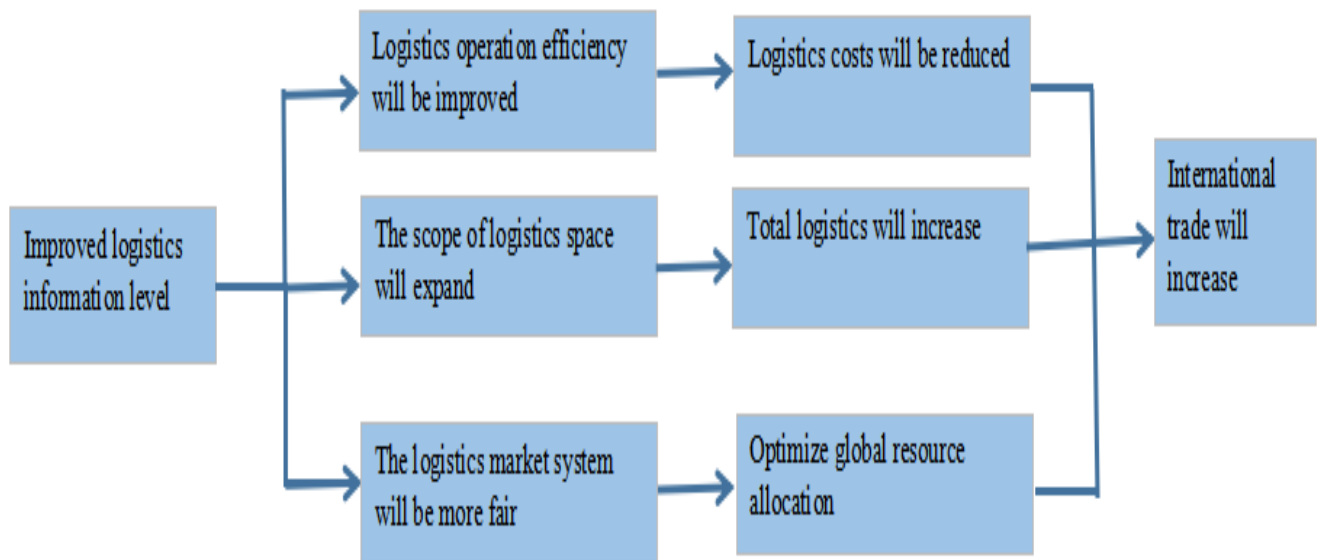
Picture 2.7 - The impact of road transportation capacity on the logistics industry

Take the air transport industry for example, the development of the air transport industry will promote the development of regional multimodal transport industry, and then promote the development of international trade. Secondly, air transportation is an indispensable mode of transportation for the transportation of high-value and time-cost goods such as valuables, fresh goods and precision instruments in international trade. The construction of aviation infrastructure directly affects the import and export volume of such goods. Although the volume of import and export goods carried by air transport is not large, it accounts for a large proportion of the trade volume due to the high value of the goods transported. Moreover, due to the high efficiency of air transport, it provides a guarantee for dealing with some emergencies of cargo transport, thus affecting the import and export volume to a certain extent.



Picture 2.8 - The impact of air transportation capacity on the logistics industry

Nowadays, the continuous development of post and telecommunications industry and Internet technology have greatly changed the traditional logistics methods. Building a fully integrated logistics information system, creating advanced logistics supply chain management software, and achieving logistics informatization are the core requirements for building a modern logistics enterprise. With the help of modern information technology, centralized management of the entire operation link of a logistics enterprise can be realized, and information resources inside and outside the enterprise can be shared in real time, thereby improving the efficiency of logistics operation and optimizing the entire logistics process[25]. Secondly, the informatization of logistics enables logistics management to cross the distance of space and time, realize the real-time sharing of information, expand the spatial scope of logistics, and shorten the logistics time, which in turn generates more logistics demand and increases the total logistics the amount. Under the trend of information internationalization, the world's logistics system is more fair and reasonable than before, providing international logistics companies with more quicker and more accurate market demand information, helping to achieve optimal allocation of resources globally.



Picture 2.9 - The impact of logistics information level on the logistics industry

Chapter Summary: Based on China's logistics industry development history and current development situation, China's international trade development history and the present development situation, the relationship between logistics and international trade and influence mechanism is analyzed, the logistics industry development and international trade development is connected, only improve the level of every link of the logistics industry development, to give full play to the international logistics of the influence of international trade. The development of logistics should be controlled at an appropriate level with the purpose of promoting the development of international trade. If the development is insufficient or excessive, it will inhibit the development of international trade.

3. LOGISTICS INDUSTRY AND INTERNATIONAL TRADE ANALYSIS, PROBLEMS AND SUGGESTIONS

3.1 Case analysis of logistics industry and international trade development

In order to study the relationship between the development of logistics industry and international trade, this paper selects several representative Chinese provinces: Guangdong Province, Zhejiang Province and Tibet Autonomous Region. By analyzing the current situation of the development of the logistics industry and international trade in these provinces, this paper compares and finds out the factors affecting the international trade of the logistics industry and the existing problems.

1. Tibet Autonomous Region

First of all, we need to understand the status quo of logistics development in the Tibet Autonomous Region. Tibet's logistics channel is connected to the "Silk Road Economic Belt". The intersection of the zones is the enrichment and improvement of the overall strategic layout of the country's opening to the outside world. Its superior geographical conditions and location advantages are an important window and gateway for the country's foreign economic exchanges.

(1) Development Status of Logistics

A. Logistics infrastructure is improving day by day. The basic transportation conditions have improved remarkably. By 2017, the total length of roads open to traffic in Tibet was 90,000 kilometers, and the highway connectivity rate in counties had reached 98.6 percent, and in townships (towns) and administrative villages had reached 99.7 percent, 99.6 percent, and 77.61 percent, and 38.1 percent, respectively. A road network had taken shape. With the smooth operation of the Guera section of the Qinghai-Tibet Railway and the La-Ri Railway, the total length of Tibet's railways in operation has reached 954 km, and the construction of the La-Lin Railway is progressing smoothly. Five airports have been put into operation, and 74 air routes have been opened inside and outside the region. Highways, railways and civil aviation have been fully developed, providing

convenient transportation infrastructure conditions for the logistics industry. In logistics infrastructure, has been built in naqu logistics park, logistics park and regional logistics hub in Lhasa, xigaze is speeding up construction comprehensive logistics park south, nyingchi comprehensive logistics park, prosperous economic development zone logistics park and logistics hub node, speed up the logistics industry "much starker choices-and graver consequences-in" balanced development provides a strong support.

B. The development of information application technology is accelerated. As of 2017, the communication fiber optic cable network rate in Tibet is 100%, the penetration rate of fixed telephones has reached 96 units per 100 people, the penetration rate of mobile phones has reached 90 units per 100 people, and the number of Internet users has reached 2.177 million, creating a powerful force for the construction of logistics informatization. Conditions: Approximately 69.7% of the enterprises in the district have achieved Internet access, 52.3% of the enterprises have established a local area network, and 66.7% of the enterprises have established a website. The application capacity of enterprise information technology has been further enhanced.

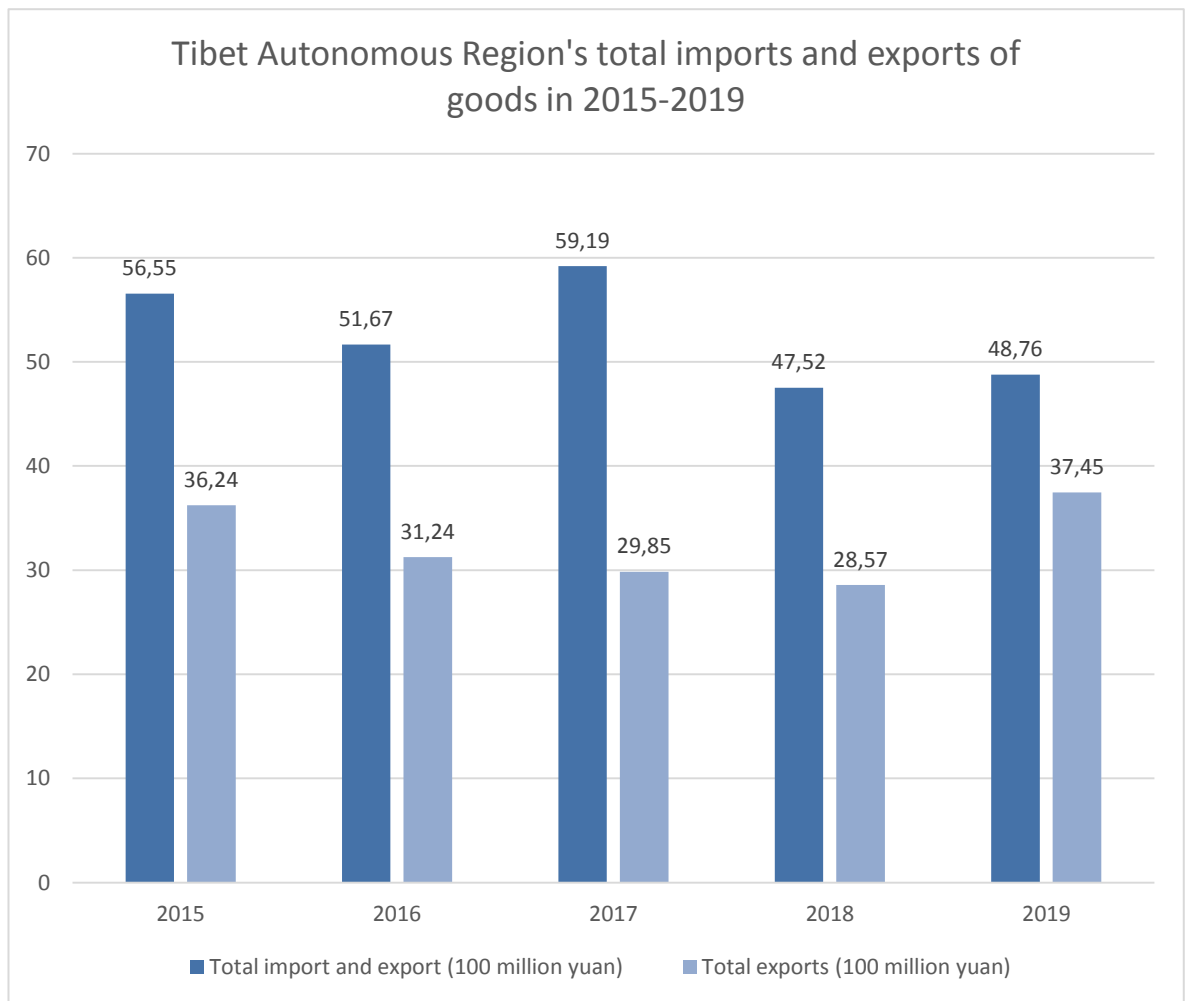
C. The logistics industry is expanding. By the end of 2017, the amount of postal and telecommunications business had reached 4.832 billion yuan, including 232 million yuan for postal services and 4.6 billion yuan for telecommunications. A total of 22.1658 million tons of goods were transported, including 528,700 tons by railway, 21.47 million tons by road, 23,900 tons by civil aviation and 143,200 tons by pipeline. With the continuous improvement of transportation conditions, the logistics cost of the whole society has been reduced, the turnover speed of enterprises' current assets and commodity inventory has been accelerated, and the quality of economic operation has been continuously improved.

(2) Current situation of the development of international trade

Although the Tibet Autonomous Region's foreign trade situation is not as good as that of other provinces, it is showing a good situation of growth year by year. The total value of Tibet's foreign trade import and export in 2017 was 5.885

billion yuan, a year-on-year increase of 13.9% compared to 2016, of which exports were 2.95 billion yuan, a decrease of 5.6%; imports were 2.935 billion yuan, an increase of 43.6%. Tibet's exports are dominated by traditional labor-intensive products, while imports are dominated by airplanes and other aircraft and pharmaceuticals. Last year, the export of traditional labor-intensive products was 1.99 billion yuan, a decrease of 17.6%, accounting for 67.5% of the total export value of Tibet; the import of aircraft and other aircraft was 1.389 billion yuan, an increase of double, and the import of pharmaceuticals was 1.178 billion yuan, an increase of 37.5%. The total commodities accounted for 87.5% of Tibet's total import value. The total import and export of Nepal, France, and Belgium accounted for 72.1% of Tibet's total import and export value during the same period. France is the largest source of imports, and Nepal is the largest export market. In 2019, the total value of imports and exports of goods in the region was 4.876 billion yuan, an increase of 2.6% over the previous year. Among them, exports were 3.745 billion yuan, an increase of 31.1%; imports were 1.130 billion yuan, a decrease of 40.4%.

In 2019, small border trade accounted for 2.933 billion yuan in import and export trade, an increase of 21.6 percent over the previous year. Among them, exports reached 2.901 billion yuan, up 21.6 percent; Imports reached 33 million yuan, up by 20.0%. In 2019, Tibet had trade with 71 countries or regions, with Nepal, Indonesia and the United States as the top three trading partners. Among them, the total trade volume with Nepal was 3.165 billion yuan, up 26.7% over the previous year, accounting for 64.9% of total imports and exports. Trade with Indonesia totaled 430 million yuan, up 132.7 times; Trade with the United States totaled 176 million yuan, down 40.9 percent.



Picture 3.1 - Tibet Autonomous Region's total imports and exports of goods in 2015-2019

2. Guangdong Province

Guangdong Province is one of the top provinces in China's logistics development and plays an important role in the development of China's logistics industry. In terms of the total amount of logistics economy, the logistics industry in Guangdong Province has developed rapidly in recent years, and has become an important support for economic transformation and upgrading, high-quality development and a leading force to drive economic growth in Guangdong Province.

(1) Development Status of Logistics

In 2018, Guangdong Province achieved a total social logistics of 23.9 trillion yuan, accounting for 8.5% of the country's total social logistics, and the total logistics of imported goods accounted for 8.0%. In 2018, the added value of the

logistics industry was 718.46 billion yuan, accounting for 7.4% of Guangdong's GDP. In 2018, the total cost of social logistics in Guangdong Province was 1.38 trillion yuan, and the total logistics cost accounted for 14.2% of GDP, slightly lower than the national development trend. From 2009 to 2018, the total annual growth of the total logistics industry in Guangdong Province was 10.5%. , 0.1% higher than the average annual growth rate of GDP in Guangdong Province, but its share in the total social logistics of the country has fluctuated and declined. In 2018, it decreased by 1.6 percentage points compared with 2009. The average annual growth rate of the logistics industry's added value was 11.9%, 1.5 percentage points higher than the average annual growth rate of Guangdong's GDP, and the proportion of the logistics industry's added value in Guangdong's GDP was steadily increasing. In 2018, it was 0.9 percentage points higher than in 2009, indicating that the contribution rate of the logistics industry to economic growth has continued to increase.

In terms of the total volume of freight logistics, in 2018, the annual cargo volume of various modes of transport in Guangdong was 4.248.17 million tons, and the cargo turnover volume was 2.864.251 billion ton-km. From 2009 to 2018, cargo volume, cargo turnover, port throughput, container throughput and civil aviation cargo throughput all maintained rapid growth, with an average annual growth rate of 10.0%, 21.6%, 8.3%, 8.7% and 8.1%, respectively. Road and port transport capacity kept growing. From 2009 to 2018, the proportion of cargo volume, cargo turnover, port throughput, container throughput and civil aviation cargo throughput in the country all showed a disproportionate increase. Among them, the cargo throughput of civil aviation accounted for more than 40% of the country, increasing by 7.6 percentage points over the past 10 years. The proportion of cargo turnover in the country increased the fastest, rising from 4.0% in 2009 to 14.0% in 2018.

From the perspective of logistics infrastructure supply, in terms of transportation infrastructure construction, Guangdong, as a large logistics province, has an advanced level of infrastructure in China. In 2018, the mileage of highways

opened to traffic in Guangdong Province was 218,000 kilometers, of which the proportion of graded highways was 96.1%, 4.1 percentage points higher than the national level. The highway mileage reached 9,000 kilometers, the highway density was 132.7 kilometers, 200 square kilometers, and the railway operating mileage The total distance is 4,630 kilometers, the navigable mileage of inland rivers is 12,111 kilometers, the port terminal has 2,498 berths, of which there are 316 10,000-ton berths, the number of civilian trucks reached 2.18 million, and the highway operating trucks accounted for the proportion of the national infrastructure To see, in 2018, the proportion of road traffic mileage, railway business mileage, inland navigation mileage, and highway operating truck tonnage accounted for 4.5%, 3.5%, 9.5%, and 4.7%, respectively. From the perspective of the changing trend of the proportion, in addition to the steady increase in the proportion of railway operating mileage, the proportion of kilometers opened to traffic and the tonnage of highway operating trucks has declined to varying degrees. This is mainly due to Guangdong's vigorous development of high-speed railways in recent years.

From the perspective of the supply of the main body of logistics, the strength of logistics enterprises is constantly enhanced, and the logistics service ability is significantly improved. There are more than 200,000 logistics enterprises in the province. By the end of 2018, there were 340 A-level logistics enterprises in Guangdong Province, among which 28 were 5A-level logistics enterprises, an increase of 3.3 and 3.7 times over 2009 respectively. A-level logistics enterprises accounted for 6.8% of the country's 5,025, and the number of 5A logistics enterprises accounted for 9.0% of the country's 310, ranking the top in the country. In addition, a number of modern, large-scale and brand-oriented logistics leading enterprises have emerged, such as SF Express, Baosupply, ANDE, Southern China Merchants, Guangdong Shipping Group, etc. In addition, according to the statistics of Guangdong Province, at present, there are more than 360 logistics parks of various kinds in the province, which are mainly divided into 7 categories: port logistics parks, aviation logistics parks, railway logistics parks, pharmaceutical

logistics parks, highway logistics parks and cold chain logistics parks. Among them, there are more than 20 large-scale logistics parks, mainly distributed in the Pearl River Delta.

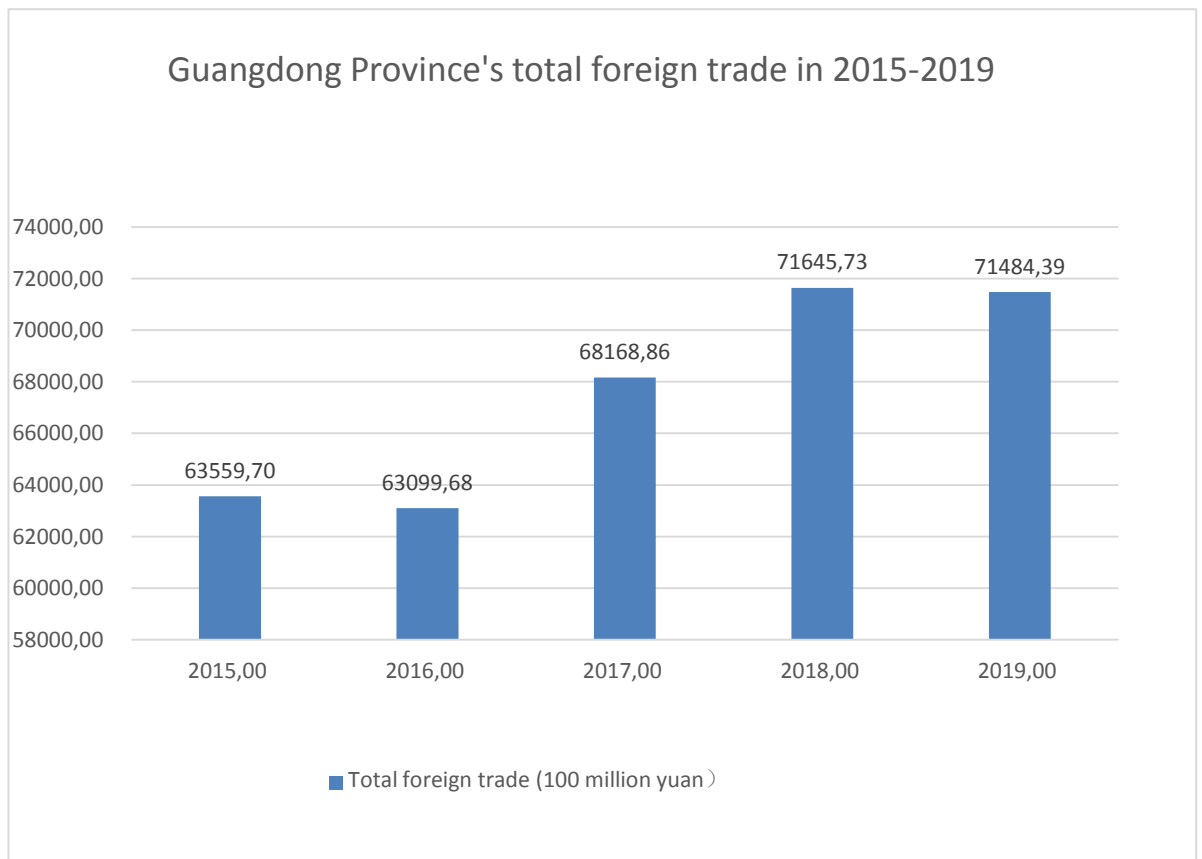
(2) Current situation of the development of international trade

The relatively good development of Guangdong's logistics industry has also brought a certain advantage to its foreign trade development. Although the total foreign trade volume of Guangdong Province from 2010 to 2013 was not very large, it was in a state of rapid growth. Between 2014 and 2016, the total trade volume of Guangdong Province declined for three consecutive years. The growth rate has been negative for three consecutive years. It was not until 2017 that it achieved a positive growth of 5.36%. The decline in foreign trade for three consecutive years was finally reversed by Guangdong Province. At the same time, it was also in 2017 that the total trade volume of Guangdong Province exceeded the one trillion U.S. dollar mark. In 2018, it was also in a state of steady growth, with a steady increase in growth rate.

In the process of trade development, especially from 2010 to 2018, Guangdong's foreign trade mode structure has been continuously optimized. The proportion of processing trade in the trade structure is decreasing gradually. Mechanical and electrical products and labor-intensive products in the export proportion of the trade is still the main. At the same time, the export of new and high-tech products increased steadily, and the export of service trade increased gradually.

3. Zhejiang Province

Zhejiang Province is an important city in China's coastal provinces. In 2019, the province's goal of accelerating the construction of a modern comprehensive transportation system has achieved new results, and new progress has been made in the construction of transportation infrastructure, the development of the transportation industry, and the improvement of transportation services.

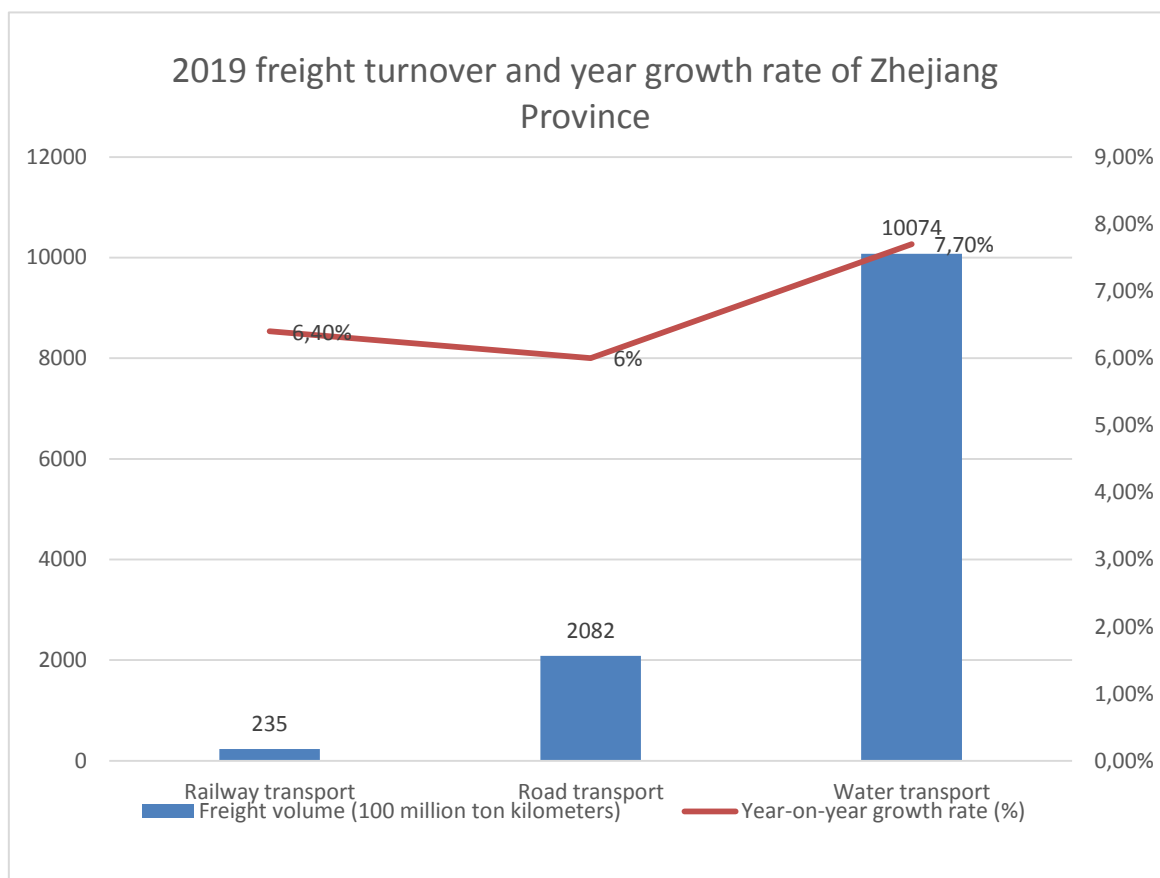


Picture 3.2 - Guangdong Province's total foreign trade in 2015-2019

(1) Development Status of Logistics

The total freight volume completed throughout the year was 288,549,300 tons, an increase of 7.5% over the previous year, and the cargo turnover was 1,239.121 billion ton-km, an increase of 7.4% over the same period last year. Among them, due to the rapid growth in demand for light-weight and high-value freight and the new demand brought about by the close economic and trade exchanges along the "One Belt One Road", the demand for railway transportation has grown steadily. The turnover of railway cargo is 23.5 billion ton-kilometers, a year-on-year increase of 6.4%; The demand for transportation of medium, light, and high-priced goods has surged, the demand for multimodal transportation has increased significantly, and the advantages of trunk transportation platforms have been quickly released. The synergy of multiple transportation methods has increased, and the road cargo turnover has been 208.2 billion ton-kilometers, an increase of 6% year-on-year; The comparative advantage of water transportation in the transportation of bulk materials has been further strengthened. The

development of inland water container transportation has accelerated. The turnover of water transportation has reached 107.4 billion ton-km, an increase of 7.7% over the same period last year.



Picture 3.3 - 2019 freight turnover and year growth rate of Zhejiang Province

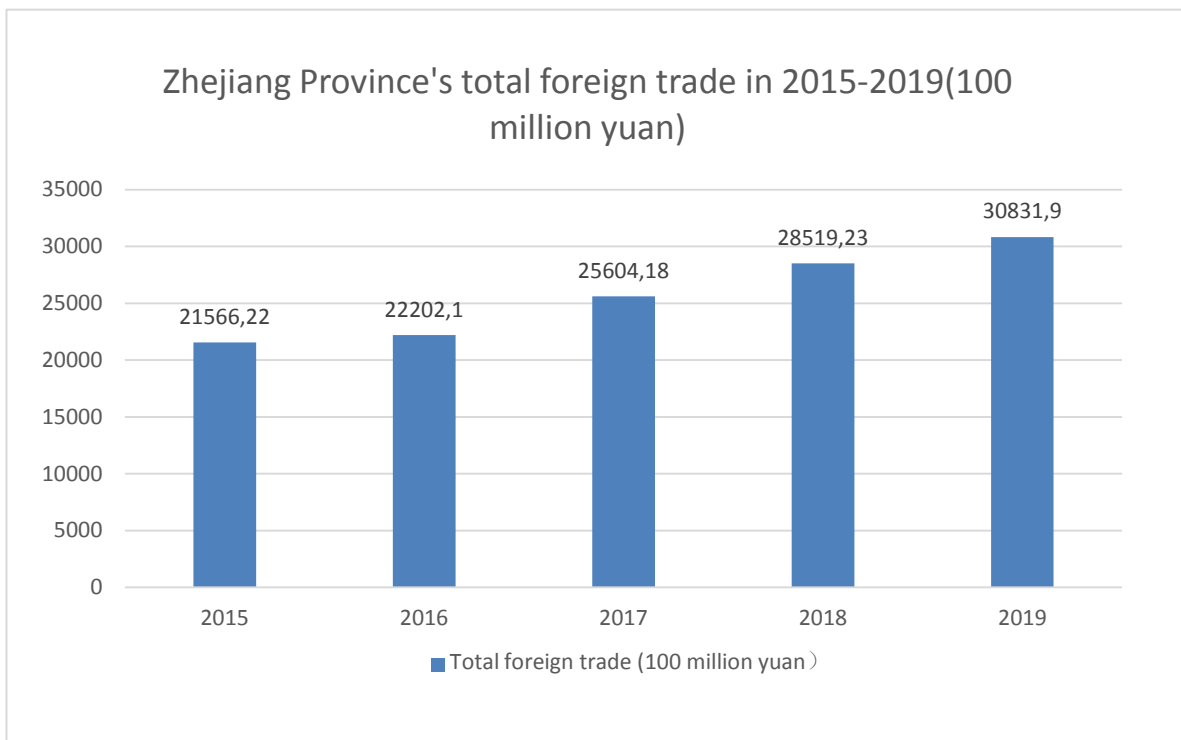
The cargo throughput of ports above designated size in the province reached 1.72 billion tons, up by 11.0%. Among them, coastal ports completed 1.35 billion tons, an increase of 8.3 percent. The cargo throughput of Ningbo-Zhoushan Port reached 1.12 billion tons, up by 7.9%, and the container throughput remained the third in the world, reaching 27.53 million TEU, up by 4.5%.

(2) Current situation of the development of international trade

The trade development of Zhejiang Province also occupies an advantageous position compared to other provinces in the country. In the past two years, trade frictions have continued. Zhejiang Province's import and export trade has maintained a trend of year-on-year growth. In 2019, the total import and export trade volume reached a new high. Among them, the total value of imports and exports to countries along the “One Belt One Road” has also shown a trend of

year-on-year growth, reaching 1045.8 billion yuan in 2019, a year-on-year increase of 16.7%. At the same time, high-tech enterprises in Zhejiang Province have started to go global under the construction of the “One Belt One Road”. In 2019, the export of high-tech products reached 160.542 billion yuan, a year-on-year increase of 14%.

In recent years, Zhejiang has actively participated in the construction of "One Belt One Road" and the Yangtze River Economic Belt, and actively integrated into the regional integration of the Yangtze River Delta. With the continuous promotion of trade structure optimization, the import and export trade of Zhejiang continues to expand. Even in the face of China-US trade friction, Zhejiang was able to maintain the growth trend of import and export trade. In 2019, Zhejiang's total import and export volume reached 308.319 billion yuan, an increase of 8.11% year on year.



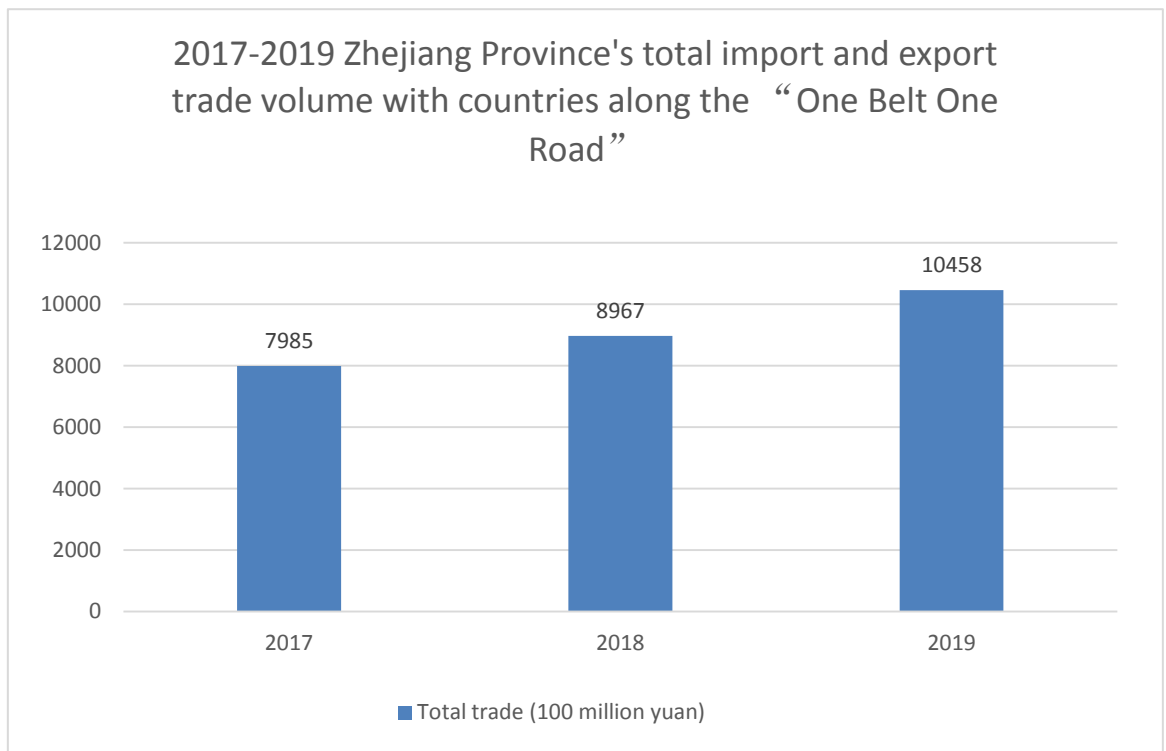
Picture 3.4 - Zhejiang Province's total foreign trade in 2015-2019(100 million yuan)

The European Union, the United States, ASEAN, Japan, Russia, and South Korea are the main import and export trading countries in Zhejiang Province. In 2019, Zhejiang Province had the highest import and export value with the EU,

reaching 588.5 billion yuan, followed by the United States and ASEAN with 426.7 billion yuan and 379.8 billion yuan respectively. As Zhejiang Province promotes the construction of the “One Belt One Road”, especially in Yiwu, Zhejiang, which is known as the “World Supermarket”, in 2019, the “Yixin Europe” China-Europe train opened 528 trains, and a total of 42286 TEUs were shipped. With a year-on-year increase of 65% and 68.7%, Zhejiang Province’s total imports and exports to countries along the “One Belt One Road” have shown a year-on-year growth trend, reaching 1,045.8 billion yuan in 2019, an increase of 16.7% year-on-year, of which exports reached 796.1 billion yuan, an increase of 16.8%.



Picture 3.5 - Major import and export trading partners of Zhejiang Province in 2019(100 million yuan)



Picture 3.6 - 2017-2019 Zhejiang Province's total import and export trade volume with countries along the “One Belt One Road”

Mechanical and electrical products are the main import and export products of Zhejiang Province, with the total import and export volume reaching about 37% of the total import and export volume of the province. In 2019, Zhejiang Province's exports of mechanical and electrical products and high-tech products reached new highs, reaching 1,013.097 billion yuan and 160.542 billion yuan, an increase of 10% and 14% year-on-year, respectively, accounting for 37.31% and 8.11% respectively.

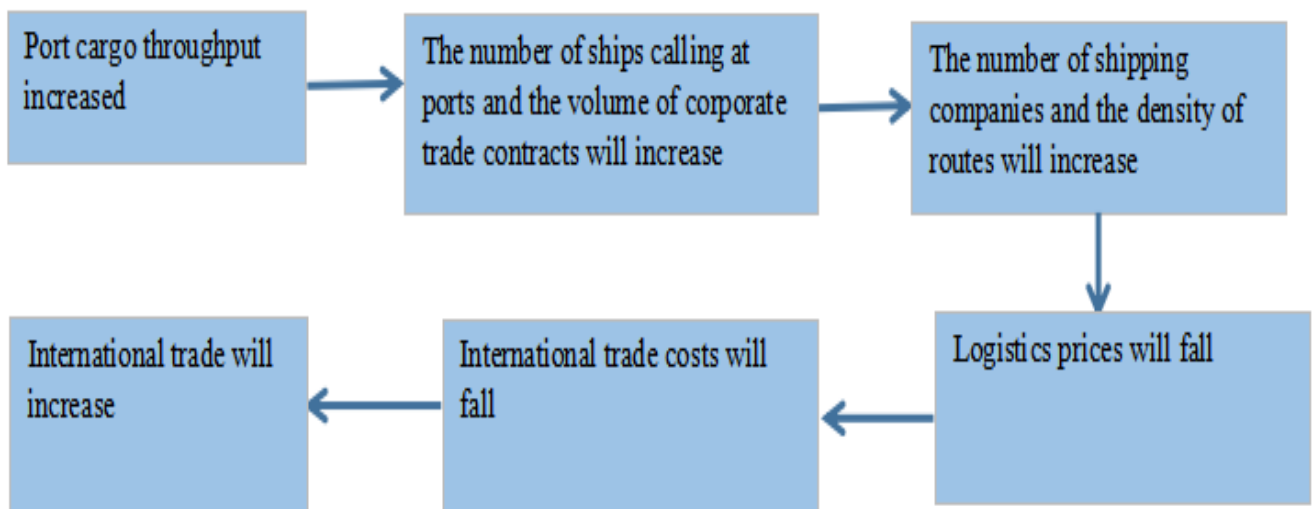
By studying the development of the logistics industry and foreign trade in these three provinces, we selected the following data to make a comparative analysis on the impact of the development degree of the logistics industry on international trade. The reason why these three provinces are selected as examples is that there are obvious gaps and differences between the special geographical location and the development level of logistics.

Tibet is located in the inland plateau region of China. There are no ports and docks, only road and rail transportation. Zhejiang and Guangdong provinces are located on the eastern coast and have unique shipping conditions. They all have the

world's leading ports: Ningbo-Zhoushan Port in Zhejiang and Zhejiang Province. Guangzhou Port in Guangdong Province. We can get the correlation between the two in the development process by comparing the basic logistics conditions and trade levels of these provinces.

(1) The impact of port cargo throughput on international trade

The cargo throughput of a port is the most important index to measure the production capacity of a port, which reflects the status of a port in the development of national economy and society, the level of enterprise management and the comprehensive situation of the construction of port facilities. In the following, we will analyze the port throughput of these three provinces. However, since the cargo throughput of coastal ports plays a major role in international trade, the cargo throughput of coastal ports is taken as the standard. The following figure shows the influence mechanism of port cargo throughput on international trade volume:



Picture 3.7 - The impact of port cargo throughput on the logistics industry

Table 3.1 - Cargo throughput of coastal ports and the total import and export trade in Guangdong Province

Years	Freight Throughput of Ports in Guangdong Province(10000 tons)	Total foreign trade in Guangdong province (100 million yuan)
2015	171109	63559.70
2016	179924	63099.68
2017	198015	68168.86
2018	211037	71645.73
2019	191819	71484.39

This paper uses the product-difference method to calculate the correlation coefficient to analyze the correlation between the above two sets of data. First, the cargo throughput of Guangdong Province is used as the independent variable X, and the total foreign trade of Guangdong Province is the dependent variable Y. The correlation coefficient between the variables X and Y is calculated r.

Available as follows:

X1,X2,X3,X4,X5=171109, 179924, 198015, 211037, 191819

Y1,Y2,Y3,Y4,Y5=63559.70, 63099.68, 68168.86, 71645.73, 71484.39

The definition calculation formula of the product difference method is:

$$r = \frac{\sigma_{XY}}{\sigma_X \sigma_Y},$$

In the formula, r represents the correlation coefficient, σ_X is the standard deviation of the variable X; σ_Y is the standard deviation of the variable Y; σ_{XY} represents the covariance of the variables X and Y. Equivalently replacing the correlation coefficient, the following expression can be obtained:

$$r = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

Substituting the above data into this formula is:

$$=(5*64559204471.94 - 321703914717.44) / (69562.02156*18487.37083)$$

So $r=0.849215865$

At that time $0 < r < 1$, the distribution of the correlation graph shows a positive slope trend of Y increasing with the increase of X, which is a positive correlation; and $r > 0.8$ is a high correlation.

It means that: $0 < r = 0.849215865 < 1$, indicating that the total amount of foreign trade in Guangdong Province increases with the increase in port cargo throughput, and $r > 0.8$, indicating that the total amount of foreign trade in Guangdong Province is highly correlated with port cargo throughput.

Table 3.2 - Cargo throughput of coastal ports and the total import and export trade in Zhejiang Province

Years	Freight Throughput of Ports in Zhejiang Province(10000 tons)	Total foreign trade in Zhejiang province (100 million yuan)
2015	109930	21566.22
2016	114202	22202.10
2017	125744	25604.18
2018	133534	28519.23
2019	135364	30831.90

Taking the cargo throughput of Zhejiang ports as the independent variable X and Zhejiang's total foreign trade as the dependent variable Y, the correlation coefficient r between the variables X and Y is calculated.

Available as follows:

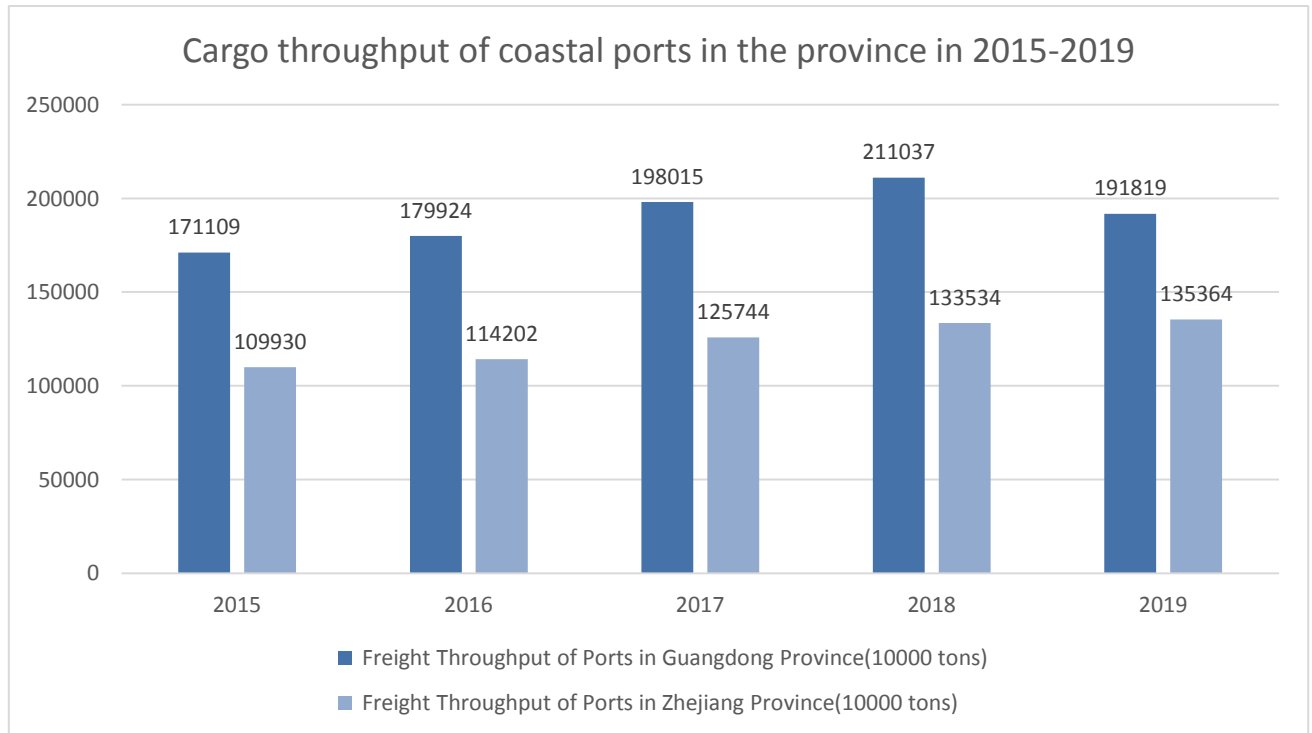
$X_1, X_2, X_3, X_4, X_5 = 109930, 114202, 125744, 133534, 135364$

$Y_1, Y_2, Y_3, Y_4, Y_5 = 21566.22, 22202.10, 25604.18, 28519.23, 30831.90$

Repeat the above calculation to get:

So $r=0.97916628$

It means that: $0 < r=0.97916628 < 1$, indicating that Zhejiang's total foreign trade increases with the increase in port cargo throughput, and $r > 0.8$, indicating that Zhejiang's total foreign trade is highly correlated with port cargo throughput.



Picture 3.8 - Cargo throughput of coastal ports in the province in 2015-2019

Through calculation, we know that the port cargo throughput of both Guangdong and Zhejiang provinces has a high degree of correlation with the total volume of import and export trade. The total volume of import and export trade increases with the increase of port cargo throughput. The greater the port cargo throughput, the greater the total amount of international trade in the province. By comparing the port cargo throughput and total import and export trade volume of the two provinces, we can find the above rules more clearly. This requires us to attach great importance to port construction in the process of logistics construction.

(2) The influence of road and railway development on international trade volume:

By 2017, Tibet had a total highway length open to traffic of 90,000 kilometers, and a highway network had taken shape. With the smooth operation of the Guera section of the Qinghai-Tibet Railway and the La-Lin Railway, the total

length of Tibet's railways in operation has reached 954 km, and the construction of the La-Lin Railway is progressing smoothly.



Picture 3.9 - The total import and export trade in 2015-2019

By 2018, Guangdong had 218,000 km of roads open to traffic and 4,630 km of railways in service.

The comprehensive transportation system of Zhejiang Province mainly includes water transportation, highway and railway. With the continuous increase of the government's attention and capital investment, the infrastructure construction of the whole transportation system has begun to take shape. By the end of 2018, the province has a railway operating mileage of 2,813 kilometers, with Shanghai-Hangzhou Line, Xiaoyong Line and other major trunk lines in the territory. The mileage of highways open to traffic is 120,600 kilometers, of which the mileage of expressways and first-level highways are 4,421 and 7,046 and 5 kilometers respectively, forming a relatively high-density expressway network

Table 3.3 - Total railway mileage and total foreign trade in three province

REGIONS	YEARS	Total railway mileage (km)	Total foreign trade(100 million yuan)
Guangdong	2015	4035.2	63559.7
	2016	4157.9	63099.68
	2017	4201	68168.86
	2018	4524	71645.73
	2019	4720	71484.39
Zhejiang	2015	2563.7	21566.22
	2016	2576.9	22202.1
	2017	2624	25604.18
	2018	2813	28519.23
	2019	2842	30831.9
Tibet Autonomous Region	2015	786.3	56.55
	2016	786.3	51.67
	2017	785	59.19
	2018	785	47.52
	2019	785	48.76

Taking the railway mileage of each province as the independent variable X and the total amount of foreign trade of each province as the dependent variable Y, the correlation coefficient r between the variables X and Y is calculated.

Available as follows:

$X_1, X_2, X_3 \dots X_{13}, X_{14}, X_{15} = 4035.2, 4157.9, 4201 \dots 785, 785, 785$

$Y_1, Y_2, Y_3 \dots Y_{13}, Y_{14}, Y_{15} = 63559.7, 63099.68, 71645.73 \dots 59.19, 47.52, 48.76$

Repeat the above calculation to get:

So $r = 0.982664262$

It means that: $0 < r = 0.982664262 < 1$, indicating that the total amount of foreign trade increases with the increase of railway mileage, and $r > 0.8$, indicating that the total amount of foreign trade is highly correlated with the railway mileage of each

province.

Table 3.4 - Total highway mileage and total foreign trade in three province

REGIONS	YEARS	Total highway mileage (km)	Total foreign trade(100 million yuan)
Guangdong	2015	216023	63559.7
	2016	218085	63099.68
	2017	219580	68168.86
	2018	217699	71645.73
	2019	220290	71484.39
Zhejiang	2015	118015	21566.22
	2016	119053	22202.1
	2017	120101	25604.18
	2018	120662	28519.23
	2019	121813	30831.9
Tibet Autonomous Region	2015	78348	56.55
	2016	82096	51.67
	2017	89343	59.19
	2018	97785	47.52
	2019	103951	48.76

Taking the highway mileage of each province as the independent variable X and the total amount of foreign trade of each province as the dependent variable Y, the correlation coefficient r between the variables X and Y is calculated.

Available as follows:

$X_1, X_2, X_3 \dots X_{13}, X_{14}, X_{15} = 216023, 218085, 219580 \dots 89343, 97785, 103951$

$Y_1, Y_2, Y_3 \dots Y_{13}, Y_{14}, Y_{15} = 63559.7, 63099.68, 71645.73 \dots 59.19, 47.52, 48.76$

Repeat the above calculation to get:

So $r = 0.977654974$

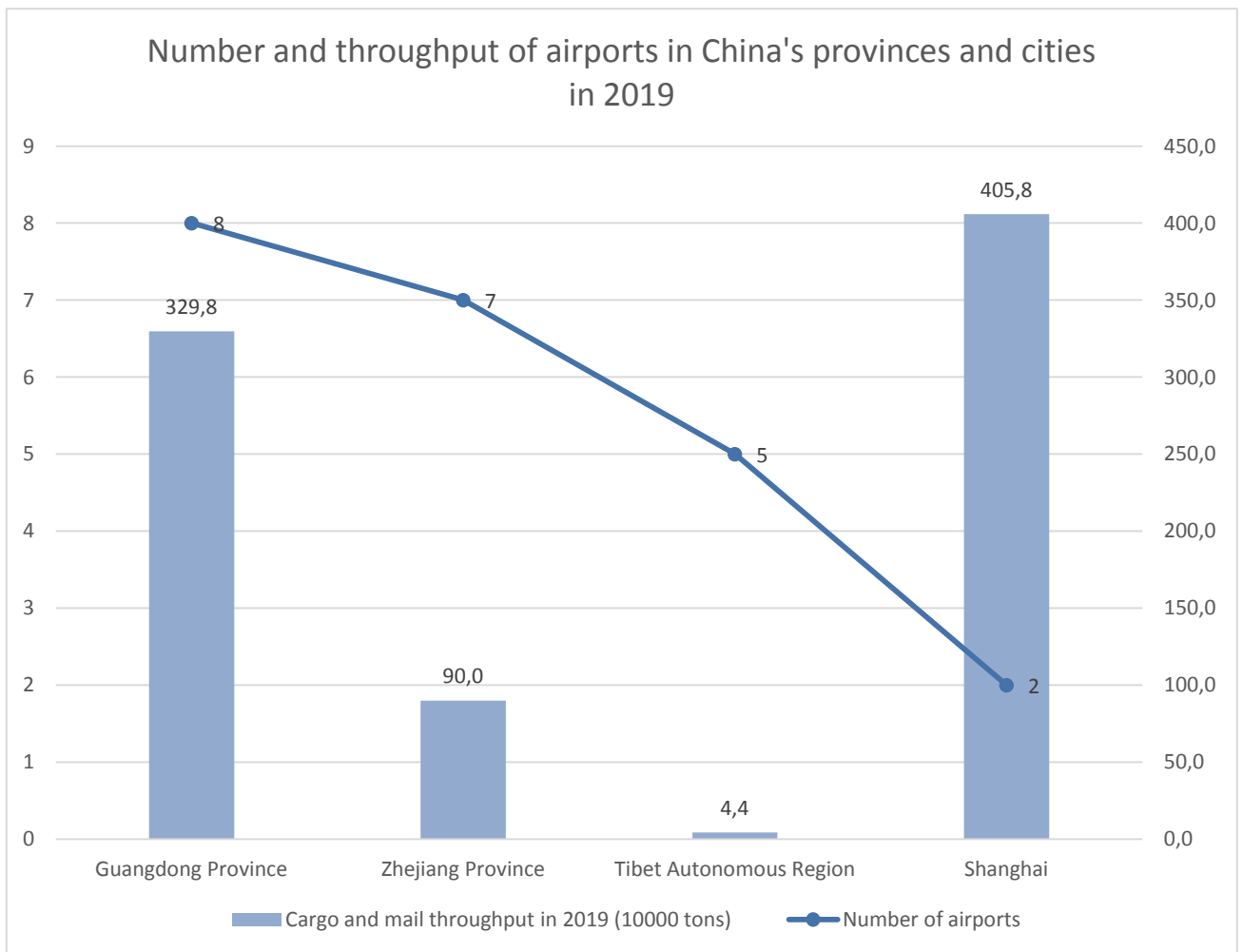
It means that: $0 < r = 0.977654974 < 1$, indicating that the total amount of foreign trade increases with the increase of highway mileage, and $|r| > 0.8$,

indicating that the total amount of foreign trade is highly correlated with the railway mileage of each province.

Through calculation, we can conclude that the mileage of kilometers and the mileage of railways in each province are correlated with the total foreign trade of each province, and the two are highly correlated. In other words, the better the development of roads and railways in each province, the higher the total foreign trade volume of the province. In addition, among the three provinces, Tibet has a large gap in terms of highway mileage and railway mileage compared with the other two provinces, especially the railway mileage. The gap is very large. As a very important land in international trade and logistics. The mode of transportation and the development of roads and railways have a huge impact on international trade.

(3) The impact of the development of aviation logistics on the volume of international trade.

From the number of airports and throughput data tables of various provinces and cities across the country in 2019, it can be seen that although Tibet has five airports second only to seven in Zhejiang Province and eight in Guangdong Province, the total cargo and mail throughput of its airports is. The amount is very small, located in the inverse of the country, and has great differences with Zhejiang and Guangdong provinces. There are two main reasons: 1. Tibet's airports are all small airports, which do not have the conditions for large-scale aircraft to take off and land, so they cannot transport a large amount of cargo. 2. In the above analysis of the current situation of logistics, Tibet's cargo operation mainly relies on roads and railways, and the proportion of air transportation is low. When comparing the number of airports and cargo throughput in Zhejiang Province and Guangdong Province, we found that when the number of airports in Zhejiang Province is only one difference from the number of airports in Guangdong Province, the difference in cargo throughput is more than three times.



Picture 3.10 - Number and throughput of airports in China's provinces and cities in 2019

The main reason is because of the geographical location of Zhejiang Province, most of the international flights or international cargo transportation destinations will first choose Shanghai, which is very close to Zhejiang Province. This has led to a gap between the air transportation industry in Zhejiang Province and Guangdong Province. Very big.

It is not difficult to find from the above that the development level of the aviation industry directly affects the air traffic volume, and thus has a significant impact on the international trade industry. Aviation logistics industry and the development level of the airport infrastructure and location has a lot to do, only airport has enough landing conditions of large transport aircraft, to let more air transport companies in the international transport of time in the local airport on the choice of landing, thus to further the development of aviation logistics industry,

thereby giving impetus to the development of international trade.

3.2 Problems in the development of China's logistics industry

In the above comparison, we found that the development of the logistics industry has an important influence on the development of international trade. If we want to improve the overall international trade development of our country, we must solve the problem of the development of the logistics industry, and then change the existing development through the development of the upper and lower linkages. situation. Through the comparison of the logistics development of the Tibet Autonomous Region, Guangdong Province, and Zhejiang Province, as well as the analysis of the current situation of the logistics development of each province in China, the development of China's logistics industry still has the following problems:

(1) The development of logistics industry is unbalanced

Through the comparison of three provinces, stark, we found that the level of logistics development in the coastal area is significantly higher than inland areas, and as a whole, for China, provinces are economy, productivity, infrastructure, marketization, informationization level and demand, the influence of such factors as the logistics industry showed the eastern development is fast, the Midwest development slow, relatively developed city logistics, Rural logistics lag and low level of the situation. The development level of the logistics industry will affect the economic development level of the region. When the economic development level is low, the government will also reduce the funds invested in the logistics construction, which forms a vicious circle.

Due to the long-standing concept of regional division in China, each region still only pays attention to its own development, without further considering the coordination and connection with other regions[28]. In terms of logistics planning and development goals, there are differences in each region. From the overall perspective of the whole country, we plan the development of logistics in various regions and determine the development goals of regional logistics, so that my

country's logistics industry can realize an effective transportation network across the country. From a national perspective, my country's logistics industry should be in a state of gradual development, forming a state of traction for logistics in the eastern and central and western regions. But in fact, each region of our country does not plan the development of logistics according to its own economic characteristics, but blindly pursues the modernization of logistics, let alone the coordinated development of logistics in other regions.

(2) The development of logistics industry is limited by geographical environment and location

In addition to the logistics industry between the regional development did not form an effective LAN, regional development only focused on the development of their own region. All regions are also limited by their geographical environment when developing logistics. From the above analysis of the transportation mileage of roads and railways in the three provinces, we can find that the transportation mileage of Tibet Autonomous Region is far less than that of the other two provinces. One of the main reasons for the construction of roads and railways in Tibet is the local geographical environment. The permafrost problems need to be overcome, the construction personnel need to face altitude reaction in the construction process, the road and railway construction need to avoid the nature reserves and a series of problems have brought more difficulties to its infrastructure construction, so its logistics industry development is also faced with greater problems.

In addition, the geographical location of each region will also bring limitations to the development of the logistics industry. For example, for cargo aircraft in Southeast Asia, if the destination of the cargo is China, the cargo unit will tend to choose an airport in Guangdong, because the transportation distance is short, and the airport's infrastructure and modernization level are relatively high, which will bring a lot to transportation. Great help. If it is a cargo aircraft from the United States or other European countries, the freight unit will tend to choose Shanghai instead of Zhejiang Province. Because of the high degree of

modernization and the superior geographical location, the transportation of goods in China will be very convenient because of Shanghai's roads and railways. The system is also very developed, the airport is more well-known internationally, and the handling procedures are easier. This has led to Zhejiang Province and Shanghai being adjacent to each other, and at the same time having excellent shipping conditions. With the number of airports in Shanghai being much smaller than that of Zhejiang Province, the traffic volume of Shanghai far exceeds that of Zhejiang Province.

(3) Structural shortage of logistics infrastructure.

China's logistics infrastructure is relatively backward, with structural shortages and a low proportion of modern facilities, which cannot meet the development requirements of modern logistics. Modern storage, multimodal transport and other facilities are insufficient, efficient, smooth and convenient comprehensive transport network is not perfect, logistics park system with reasonable layout and complete functions has not been established, logistics infrastructure is not compatible, it is difficult to effectively connect. The medium and long-distance transportation of coal depends on roads, which results in the consumption of a large amount of high-quality energy and the increase of transportation cost. Part of the high grade channel along the river takes up a low proportion and the network degree is not high. Air cargo infrastructure development is generally inadequate; The warehouse construction is seriously lagging behind, the warehouse area is much lower than the level of developed countries, and the construction of the national public general warehouse is slow and "operating with disease", which has major safety risks.

In terms of the number of airports, as of 2019, the United States has 15,095 airports, Brazil has 4,093 airports, Russia has 1,218 airports, and China has only 507 airports. From these data, it is not difficult to find that although China has achieved certain results in the development of the logistics industry, there is still a big gap between China and other countries in terms of infrastructure construction. The logistics and transportation links not only include air transportation, but also

storage area, logistics park, modernization level, etc., each of which is a little different, which is a considerable development gap for the entire country's logistics industry.

(4) Lack of a favorable international environment for development

International trade is the trade behavior between countries, which is easily affected by the national political environment, policies, diplomatic relations and a variety of unstable factors. For example, China's foreign trade will be affected by the trade war between China and the United States and the country's policy on COVID-19 prevention and control. At the present stage, China strictly controls the process and procedures of import and export, and has strict requirements on the hygiene of imported and exported goods, while other countries have different regulations on the import and export of goods. Internationally, the highly spread of the epidemic has led to the suspension of international trade and the obstruction of international logistics, which has severely damaged the global supply chain. The duration of the epidemic, the extent of the spread and the effectiveness of various countries' response policies bring great instability to the operation of the logistics industry. The current international environment is not performing well compared to the situation before the outbreak.

(5) The logistics system, mechanisms, laws, policies, etc. are not yet perfect

Firstly, the weak management system and governance capabilities of the logistics industry. The boundary between the government and the main body of the logistics market is unclear, and the government's overall thinking on the development of the logistics industry in the country is not clear enough. It needs to deepen the status of the logistics industry in the national economy, development models, development priorities, industrial systems, scientific systems and other major issues[29]. the study. As the main organization of the logistics market, due to the restrictions of ownership and industry, the market competition opportunities are different, which leads to the uneven development of the main organization of the logistics market. Compared with private logistics companies, state-owned logistics enterprises have a greater competitive advantage in important logistics resources

such as railways, highways, aviation, oceans, information, and finance. The management authority of China's logistics industry involves multiple departments and industries, involving central and local governments at all levels. The division of logistics management authority departments and divisions is extremely prominent, and the lack of effective coordination among different departments and regions hinders the logistics industry. The institutional barriers to development remain unbroken. The country has not yet had a unified logistics development department, lacking a national overall plan for transportation, warehousing management, and information networks for the logistics industry, and has failed to achieve a unified layout for the logistics network, and the management and governance of the logistics industry is diverse. Distributed way. This self-contained, regional blockade and market segmentation model has greatly weakened the management and governance capabilities of the logistics industry[30].

Secondly, logistics laws, regulations and policies are not perfect. China's logistics legislation is relatively backward, the current logistics laws and regulations are mostly adopted from the planned economy system, difficult to adapt to the needs of international development of logistics, let alone to adapt to the needs of modern logistics development under the market economy environment. Generally, the relevant laws and regulations system lacks the adjustment function and specific guidance to the logistics practice in terms of technology, and the micro restraint ability and macro control ability are insufficient. From the perspective of legal effect, China's current logistics laws and regulations have a low level of direct operability, weak legal effect and difficult coordination of value goals. Ministries, local enact regulations and all kinds of logistics policy, the lack of universal applicability in the concrete application, majority is only suitable for as the main body of logistics, logistics activities refer the basis, with local and departmental color segmentation, is not conducive to guide the development of logistics industry, from the macro and the lack of necessary for logistics main body behavior[31]. There are problems of overlapping

provisions and conflicts among laws and regulations, lack of systematicness and coherence, and it is difficult to give full play to the normative and regulatory role. The numerous logistics activities make the policies and regulations of adjusting logistics scattered in the department laws which are formulated by the competent departments of various industries out of their own interests, forming a situation of multiple and scattered. There is a lack of unified legal norms for the access conditions of the logistics market, and the entry threshold for logistics enterprises is low. The legislation on the market access and qualification of logistics enterprises needs to be improved.

(6) Unsustainable logistics and outstanding safety problems

The consumption and large-scale emission of resources, energy and land from roads, aviation, railways, waterways and other modes of transport are a serious problem. Ineffective transportation, unreasonable transportation, excessive packaging and other serious problems, resulting in increased urban traffic pressure and the waste of resources and energy[32]. Logistics enterprises lack the concept of green and low-carbon logistics management, the awareness of energy conservation and environmental protection is not strong, the investment of clean technologies and equipment in logistics operations is insufficient, the development of circular logistics and reverse logistics lags behind, the utilization efficiency of resources and energy is low, and the logistics process causes great harm to the environment. Serious personal safety and cargo damage accidents caused by overloading, overspeed, improper operation of drivers and continued driving of scrapped vehicles often occur. During the transportation of goods, operators throw them around, steal and take them privately, and the storage management of dangerous chemicals is weak, which brings heavy losses to enterprises and the country[33]. The information security level is very low, and the leakage of logistics information and express information often occurs. Some logistics enterprises cannot implement strict confidentiality system for user information, and the situation of internal personnel making profit from the information causes the leakage of user information and personal privacy, and the information security

situation is not optimistic.

In particular, the logistics supply chain has many links, involves a wide area, has a high degree of labor intensity, and the service objects and practitioners have strong mobility and non-specificity, high service frequency, service personnel and goods separation and many other characteristics, which make it easy to become an important channel for criminals to commit crimes or obtain criminal tools. Illegal elements can hide the real identity of individuals, and use logistics channels to illegally deliver guns, ammunition, explosives, drugs, etc., and even terrorists and individual extremists use this channel to illegally deliver and trade criminal tools. These actions directly threaten public safety and social security, and even national security.

3.3 Suggestions for the development of China's logistics industry

The 21st century is a period of economic globalization and rapid development of information technology. International trade accounts for an increasing proportion of the economic development of various countries. The surge in trade volume provides an opportunity for the rapid development of modern logistics industry. After decades of growth, China's economy has finally surpassed Japan to become the world's second largest economy after the United States. Therefore, my country's logistics industry has naturally entered a new period of development. Related companies should improve logistics infrastructure, Based on the development of modern logistics technology, calmly respond to the new order of world economic competition.

(1) Improving infrastructure construction

Logistics development imbalance in China, the logistics infrastructure construction is limited by geographical position, etc. According to China's economic development in different areas of the situation, according to local needs and actively the construction of different logistics infrastructure, for connecting different regions effectively, thus consummates our country the construction of logistics facilities[40]. We will establish a modern air transport and logistics

system. First of all, on the basis of the domestic air logistics park, the construction of connected with the international air transport logistics center, create modern air logistics system, make the storage, processing, transportation, loading and unloading organic combination, improve transport efficiency, reduce transport costs, make air transport in our country the important window of foreign exchange and intensify international cooperation[34]. To provide a strong logistics support for the rapid development of China's social economy, and effectively establish a coordinated operation of the air cargo logistics network. Strengthen highway infrastructure construction and highway transportation and logistics management link. In the construction of highway infrastructure, highway network should be reasonably planned, more roads should be upgraded, and modern information means and advanced technology should be used to reduce transportation costs, promote the rapid and low-cost flow of various trade commodities, and improve trade benefits. Facilitate the link between road transport and logistics management to meet the modern needs of customers at a low cost.

Speed up the construction of new railway lines and adjust the transportation organization structure. In the construction of new routes, it is necessary to increase the total scale of the road network, improve the structure of the road network, and form a railway network that traverses east-west, north-south, and covers the whole country; in the adjustment of the transportation organization structure, it is necessary to realize the sharing of railway cargo transportation information and strengthen the transportation personnel Technology upgrade, improve the ability of loading and unloading goods, and build a cargo transportation system and a heavy-duty transportation system to realize the separation of passenger and cargo transportation.

(2) Create a good environment to support the development of international trade and logistics

The logistics industry and international trade are an organic unity. The development of the two promotes each other. Therefore, a good social environment should be created for the development of both, and government policy support

should be increased[35]. At the same time, the government needs to improve its political status in the world, to expand their international influence and improve their ability to confront other countries with political means to combat the country's economic development. Enhancing political and economic acumen can immediately promulgate policies that are conducive to international trade and support the development of Chinese enterprises.

Improve the awareness of political risk prevention, increase the risk awareness of international trade and logistics development, and reduce the obstacles to the development of the domestic logistics industry due to political, diplomatic and other unstable factors. Improve the ability and level of responding to emergencies, and actively respond to relevant freight laws promulgated by various countries.

(3) Pay attention to talent cultivation

International senior logistics personnel training and introduction at the same time, to consolidate the rapid development of China's logistics enterprises. It can be seen from the development experience of foreign famous logistics companies that the senior management of logistics enterprises must have a certain amount of modern media technology and business management practice experience[36]. And the international logistics industry in China started late, engaged in logistics management talents growth time is shorter, at the same time, domestic colleges and universities on the cultivation of the students majoring in logistics management lack of experience, so led to the Chinese logistics enterprises existing staff ability is low, with China's international trade in the international logistics industry development, This shortage of management quality personnel has restricted the development of China's logistics industry.

Therefore, government agencies at all levels in China should take into account the reality of my country's logistics and encourage relevant companies to formulate logistics human resource strategies and introduction policies. At the same time, international logistics talent training institutions should take into account the market's demand for talents and actively carry out logistics-related curriculum

reform and actively cultivate High-quality compound talents in logistics are expected to become the backbone of the development of China's logistics enterprises[37]. At the same time, it is necessary to formulate policies for the introduction of foreign outstanding management talents in light of the international trade situation, and promote the rapid development of China's logistics enterprises and international trade through the participation of senior logistics management talents at home and abroad.

Except for logistics management talent cultivation and introduction, also need to pay attention to logistics grass-roots staff professional quality training, because of wide scope of personnel engaged in logistics industry at the grass-roots level, most have no contact with standardized training, to vocational skills training, improve the grass-roots staff's ability and level, improve the quality of logistics and the degree of standardization, From the point of view of improving work efficiency, reduce logistics costs.

(4) Improve government functions and improve management capabilities

From a macro perspective, the government must provide policy and economic support. If the logistics industry and international trade develop in a favorable direction, it will not only require the government to provide a large amount of funds to improve the construction of various links in the supply chain, but also require a strong government. Policy support[41].

First of all, the government should give full play to its policy guidance, conduct overall planning and organizational guidance for the development of the national logistics industry, issue relatively online policies and regulations that are conducive to the development of national logistics and are suitable for the current economic development system, and implement them to detailed requirements. Make the implementation of policies and regulations feasible[38].

In addition, the government also needs to give full play to the investment-oriented role and increase the injection of various resources, including not only capital, but also the introduction of high-tech technology and professionals, so that they can jointly build and maintain the basic equipment for public welfare of the

national logistics. To make full use of existing resources and optimize their allocation, strengthen the management performance of the government for logistics infrastructure, highlighting the government's regulation of foreign trade and economy, supervision of relevant markets, management of the development order of the logistics industry and the related responsibilities of public announcement and service.

The government has issued relevant industry regulations, advocating enterprises to pursue various forms of logistics such as green logistics, circular logistics, and renewable logistics, to reduce the waste and consumption of physical resources, and realize the reuse of logistics resources through the dual effects of scientific and technological means and environmental awareness.

In short, in the process of the development and construction of the national logistics industry, the role of the government is very important. While ensuring the development of the logistics industry and the smooth progress of international trade, the government, as a provider of logistics facilities, must not only provide policy support, but also discuss the formulation of strategic systems to ensure the development of international trade and the construction of logistics facilities; in terms of capital injection, the government the department should also show its special role, actively attract a large amount of capital investment, the introduction of high-tech technology, and the introduction of professional talents, and make full use of the high demand for foreign trade in China at this stage to promote the continuous improvement of the logistics industry in the development process. Accelerate the pace of China's internationalization[39].

(5) Promote the comprehensive development of the logistics industry and improve the relevant service system

For the development of international trade, the logistics industry itself must be developed soundly. Because logistics enterprises are the main operators in the whole process of logistics, they play an important role in improving the development level of logistics industry. The scope of modern logistics industry is very broad, not only logistics transportation, but also including warehousing, cargo

handling and other links. In order to make the healthy and rapid development of logistics industry, logistics enterprises must actively strengthen scientific and technological innovation, improve the quality of employees, to make up for their own shortcomings and improve themselves.

Pay attention to unfair competition and price wars among logistics companies in the same area[42]. From the perspective of company transportation time and company service types, market customers should provide differentiated services and carry out corporate innovation and technology. Innovate to fill the vacancies in the existing market. Under the guidance of the government, logistics enterprises can form cluster enterprises, form an effective logistics service network nationwide, and jointly provide logistics transportation services for international trade to avoid waste of resources.

From the perspective of the current development of China's logistics industry, although the development of China's logistics industry has achieved certain results, there are still many problems in the development process. We must actively discover the problems in the logistics development process and strive to find solutions to the problems[43]. Clarify the relationship between the development of the logistics industry and international trade, promote the coordinated development between the two, and achieve a double breakthrough in China's logistics industry and international trade.

CONCLUSION

The main content of my master's thesis is divided into three parts. The first part is about the theoretical basis of logistics, international trade, the development status of global logistics and international trade. The second part introduces the development status of China's logistics industry, international trade, the relationship and influence mechanism between logistics and international trade. The third part takes Zhejiang Province, Guangdong Province, and Tibet Autonomous Region as examples to analyze in detail the impact of some factors (port cargo throughput, kilometer and railway mileage, and aviation industry development) on the development of the logistics industry, and then on the development of international trade. Impact. And on this basis, summarize the problems that have occurred in the development of China's logistics industry, and put forward relevant suggestions.

Through theoretical analysis and case analysis of logistics development, this paper studies the development of China's logistics industry and its role in the development of China's international trade. By introducing the development status of the logistics industry in Zhejiang Province, Guangdong Province, and the Tibet Autonomous Region and the development of international trade, studying the interaction between the two, and using data for effective comparison, the following conclusions are drawn:

There is a mutual relationship between the logistics industry and international trade, and the development of the logistics industry can affect the development of international trade in many ways. For example, roads, railways, and aviation affect the development level of the logistics industry, which in turn affects the freight volume of international trade, the cost of international trade, and has an important impact on international trade. A detailed summary of the problems that have occurred in the development of China's logistics industry, and looking for problems that hinder the development of China's logistics, enables us to understand that my country's logistics development still has a large room for

progress at this stage, and prevents development in the logistics industry. There were stagnant scenes in the process. Propose certain solutions to the problems encountered in the development of the logistics industry, and make breakthroughs in all aspects of the existing problems, gradually narrow the gap between the development of China's logistics industry and developed countries, reduce the cost of logistics and transportation in my country, and expand China's Competitive advantages in international trade.

Put forward their own suggestions for the development of the logistics industry. First, improve the infrastructure construction. Through statistics, we find that China's logistics development is unbalanced and the construction of logistics infrastructure is restricted by geographic location. In response to this situation, according to the economic development of different regions of our country, according to local needs, actively construct different logistics infrastructures, so that different regions can be effectively connected, so as to improve the construction of my country's logistics hardware facilities. For example, based on the domestic air transport logistics park, build an international air transport logistics center connected to it, create a modern air transport logistics system, organically integrate warehousing, processing, transportation, loading and unloading, and improve transportation efficiency and reduce transportation costs. Second, the government, society, and individuals should strive to create a sound environment for the development of international trade and logistics. For example, the government needs to improve its political status in the international arena, expand its influence in the international arena, and improve its ability to use political means to combat the country's economic development in the face of other countries. Third, pay attention to the training of industry talents, pay attention to the vocational quality training of grassroots employees in logistics, improve the ability and level of grassroots employees, improve the quality and standardization of logistics transportation, and reduce logistics costs from the perspective of improving work efficiency. In addition, the logistics industry needs to strengthen its own development and improve related service systems. The modern logistics

industry covers a wide range, not only logistics transportation, but also warehousing, cargo handling and other links, to achieve efficient services in multiple links.

In short, the development of China's logistics industry has achieved certain results, but we still need to constantly discover, summarize and solve problems in the development process. To achieve a breakthrough in the logistics industry, thereby achieving a breakthrough in the international trade industry.

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