Study on the development and future of Hong Kong trade logistics

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Abstract. As one of the most important trading ports in the world, Hong Kong is not only a benchmark for international trade liberalization but also an important participant in promoting the innovative development of international economic and trade rules and governance. As one of Hong Kong's four pillar industries, the trade logistics industry plays a vital role in Hong Kong's economic growth and the prosperity of global trade. Researchers review the development process of Hong Kong's trade logistics, analyze its various advantages as a free port and the challenges it faces at present, and propose corresponding measures and suggestions to strengthen the innovative application of trade facilitation with its experience, promote the prosperity and development of Hong Kong's trade logistics, and bring a stable impetus for sustainable development to support regional economic and trade activities. Research shows that: (1) Hong Kong's trade and logistics industry has a deep historical foundation and government support. As a world-class port, Hong Kong is located in the heart of Asia, with a superior geographical location, perfect infrastructure and a free trade environment. (2) Hong Kong's trade and logistics industry is still facing challenges such as geopolitical changes, trade tensions and the impact of anti-globalization trends.(3) The future development of Hong Kong's trade logistics is influenced by emerging technologies and sustainable development. On the basis of the Guangdong-Hong Kong-Macao Greater Bay Area, Hong Kong and the Pearl River Delta can be used to face challenges and innovate.

Keywords: Trade Logistics, Hong Kong, Industry status.

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1 Introduction

1.1 The background of Hong Kong as a trade logistics center

As one of the world trade centers, Hong Kong is located at the southern end of East Asia, very close to many countries and regions in Asia, and is one of the most important shipping centers in Asia. Cargo ships from Japan, the Korean Peninsula to Central Asia, Africa and Europe regard it as a stopping point. Hong Kong's geographical location makes it an important hub connecting Chinese mainland with the rest of the world, which greatly facilitates the development of the trade logistics industry.

Hong Kong has a natural deep-water harbor capable of accommodating huge ocean-going vessels. The port is surrounded by the island of the mountain and the mainland, is a relatively open port, with good wind shelter conditions, and less sedimentation, no serious pollution, and not easy to appear high drop tides.

Since the 1970s, Hong Kong has maintained the free operation of the market mechanism, practiced non-interventionism, and pursued the policy of economic diversification. It has always adhered to an open and liberal economic policy, with the government encouraging free trade, no major trade barriers, no foreign exchange controls, and low tax rates. In addition, Hong Kong has an independent judicial system and clear legal provisions to protect property rights and contractual rights, and a stable legal environment and social order for a long time provide confidence and protection for enterprises.

As an international financial center, Hong Kong also has a highly developed and regulated financial system. Numerous financial institutions and service providers provide support for various financial activities around the world, attracting a large number of international financial institutions to set up branches here, becoming an important financing and investment center.

1.2 The importance of trade logistics in Hong Kong's economy

Hong Kong's world-leading port and logistics infrastructure, with its ability to handle large volumes of cargo and provide efficient freight services, has made it an attractive destination for ships, airlines and logistics companies. Due to its location between mainland China and international markets, Hong Kong plays a key role in trade transit and distribution. Many international companies choose to set up distribution centers or trade headquarters in Hong Kong to introduce products to mainland China or other Asian countries through Hong Kong, and Hong Kong's advanced logistics network and convenient cross-border trade policies also make the process more efficient and flexible.

Moreover, Hong Kong's status as a financial center is closely linked to trade logistics. Financial services such as trade finance, credit insurance, settlement and payment play an important role in international trade, and Hong Kong's role as an international financial center makes these services more convenient and efficient.

1.3 Research objective

Hong Kong is one of the most important trading centers in the world, and trade logistics plays a vital role in Hong Kong's economic growth and the prosperity of global trade. Hong Kong's trade logistics development has advantages in terms of location, facilities, supply chain, information technology and finance, but it also needs to address geopolitical risks, trade frictions, environmental sustainability and global supply chain restructuring challenges. Through literature research, case study, historical research and other methods, this paper conducts qualitative and quantitative analysis of Hong Kong trade logistics data, aiming to investigate the historical development of Hong Kong trade logistics, analyze its advantages and challenges, and predict the future development trend. The study includes a review of the development of the trade logistics industry, an assessment of Hong Kong's competitive advantages, an exploration of current developments, and projections for future growth.

2 Historical development of trade logistics in Hong Kong

2.1 The development of trade logistics in Hong Kong

In 1841, after occupying Hong Kong during the First Opium War, Britain implemented a "policy of nonintervention". For Hong Kong's free entry and exit of goods, most of the goods are duty-free, have a low tax rate, and taxable goods are not abundant, attracting foreign business firms to Hong Kong to attract business. Hong Kong's entrepot trade developed rapidly and became Europe and South China's trade transit port. For a long time, entrepot trade accounted for 80% to 90% of the total import and export trade.

After the Opium War, the Chinese mainland market was further opened up, and import and export trade was greatly improved. As an important transit base for trade with China, Hong Kong also achieved unprecedented prosperity driven by transit trade. From the 1930s to the 1950s, Hong Kong's entrepot trade was seriously affected by the economic crisis of the capitalist world, the outbreak of the Second World War, and the exclusion of Hong Kong from the "Imperial preferential tax system" of the Commonwealth. After the unconditional surrender of Japan and the recovery of Hong Kong's sovereignty by the United Kingdom, Hong Kong's import and export trade volume increased significantly, trade relations with other countries in the world quickly resumed, and a large amount of capital flowed into Hong Kong, laying a solid foundation for the development of Hong Kong's financial industry and industry.

In 1950, the outbreak of the war against the United States and aid Korea, coupled with the US-led trade embargo against China in 1951, severely restricted Chinese mainland exports, and severely affected Hong Kong's re-export trade. To change this situation, relying on the previous stage of capital accumulation and a large amount of cheap labor, Hong Kong vigorously developed the export-oriented textile and garment processing trade, which effectively promoted the gradual recovery of Hong Kong's economy and trade recovery. Processing trade gradually replaced transit trade as the main mode of trade in Hong Kong, and transit trade shrank significantly.

After entering the 1970s, Sino-US relations warmed, Hong Kong's re-export trade gradually recovered, and its commodity structure gradually changed from traditional labor-intensive products to technology and capital-intensive products such as electronics, watches, chemicals and instruments, which sounded the prelude to the adjustment of Hong Kong's industrial structure. In the late 1970s, Chinese mainland began to implement the reform and opening up policy, and the market was further liberalized. A large number of labor-intensive industries such as toys, clothing and plastics in Hong Kong moved to Chinese mainland, and a large number of raw materials, parts and semifinished products in Hong Kong were deeply processed or packaged in Hong Kong and then flowed to other parts of the world in the form of Hong Kong products. More importantly, along with the transformation and development of the manufacturing industry, the modern service industry, dominated by finance, real estate, tourism and information, began to develop rapidly. According to the data of the World Bank, in 1990, the added value of the service industry in Hong Kong accounted for 73% of Hong Kong's GDP and continued to rise.

In the 1990s, transregional economic and trade cooperation emerged worldwide. Hong Kong became one of the founding members of the WTO in 1995 and is also a participant in a number of economic cooperation organizations, including APEC, the Organization for Economic Co-operation and Development, and a full member of the Asian Development Bank and the World Customs Organization. The return of Hong Kong to the motherland in 1997 and the implementation of the "one country, two systems" policy further strengthened the economic ties between Chinese mainland and Hong Kong region. In 2001, with China's accession to the WTO, the Chinese mainland market began to fully open up, and a free trade zone was established with Hong Kong, allowing Hong Kong products and services to enter the Chinese mainland market on more favorable terms. Until February 18, 2019, when the Outline of the Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area was promulgated, the integrated development of the Guangdong-Hong Kong-Macao Greater Bay Area accelerated, and Hong Kong's role as the core engine of regional development was further enhanced. Hong Kong's close links with the world economy have been further deepened, and diversified regional economic cooperation has also gained deeper development.

2.2 Early trading activities in Hong Kong

As early as the early 19th century, Hong Kong was an important port city, attracting merchant ships from all over the world to load, unload and trade goods. In addition, the tea trade is an important trade activity for Hong Kong. China is one of the world's major tea producers, and tea is in high demand on the global market. As the trade gateway between Chinese mainland and the outside world, Hong Kong has become a tea distribution center and entrepot trade center, and tea merchants conduct wholesale and export in Hong Kong, exporting Chinese tea to the rest of the world.

In addition, Hong Kong also played a very important role in the silk trade. Early Hong Kong region merchants procured silk from Chinese mainland, processed and

traded it, and shipped it around the world. Hong Kong is also an important place for traders from all over the world to buy Chinese silk.

With the growth of trade activities, Hong Kong has gradually developed into a financial center, providing a variety of financial services, such as financing, settlement, and exchange. Early financial institutions and merchants provided financial support and risk management for trade activities, which promoted the prosperity of trade.

2.3 Establishment and development of trade logistics infrastructure

As one of the global trade centers, the establishment and development of Hong Kong's trade logistics infrastructure has gone through the stages of port construction, airport construction, road construction, facility service construction and information technology development.

Beginning in the 19th century, Hong Kong began to develop port facilities. Early Hong Kong relied mainly on natural ports, but with the growth of trade and the expansion of ships, the improvement and expansion of port facilities became necessary. The Hong Kong Port Authority has carried out a number of port expansion projects, including land reclamation, pier construction and bay dredging. As shown in Table 1, these projects have greatly increased the capacity and handling capacity of the port of Hong Kong, making it an important hub for international trade.

Hong Kong International Airport is a key node in Hong Kong's air transport. According to the geographical conditions and aviation development needs, Hong Kong decided to build a new international airport to replace the original old Lung Dong airport. Opened in 1998, Hong Kong International Airport is one of the most advanced international airports in Asia, with modern terminal facilities, efficient ground transport links and advanced cargo facilities.

To support the circulation and distribution of trade logistics, Hong Kong has also vigorously developed road and rail networks. Hong Kong's land transport is highly developed, with a modern road system and world-class tunnel and bridge facilities. In addition, Hong Kong's rail network, such as the MTR and light rail system, provides a convenient and efficient means of transportation for goods and people.

At the same time, Hong Kong has built a number of modern warehousing facilities and logistics parks to meet the growing logistics demand. For example, the Super Terminal and Shuttle Bay container terminals near Hong Kong International Airport are important logistics bases in Hong Kong, providing container cargo distribution, storage and distribution services.

With the development of information technology, Hong Kong is also constantly promoting the application of digitalization and e-commerce in trade logistics. Hong Kong has developed an advanced information technology infrastructure, providing technical support such as electronic data interchange and logistics information systems to facilitate the development of innovative services such as cargo tracking, supply chain management and electronic payment.

Through continuous investment and improvement, Hong Kong has successfully established a modern, efficient and reliable trade logistics infrastructure, promoting Hong Kong to become an important center for international trade and logistics and attracting

a large number of traders, logistics service providers and international enterprises to do business in Hong Kong.

Table 1. Statistics on the Development of Hong Kong's Port Transportation Industry

Year	Number of cargo ships calling outside Hong Kong (ships)		Container throughput	Total cargo throughput($\times 10^4$t)	
	ocean-going vessels	Inland waterway vessels	(standard containers)	ocean-going vessels	Inland waterway vessels
1968	6 551	13 003		1 019.9	127.1
1971	7 714	12 824		1 317.9	144.5
1974	7 321	15 430	726 215	1 705.3	157.5
1977	8 916	16 241	1 258 782	2 377.6	186.1
1980	10 229	22 466	1 466 491	3 069.2	287.0
1983	11 476	33 753	1 837 047	3 156.9	541.7
1986	14 109	44 096	2 774 025	4 746.9	882.0
1989	18 999	50 216	4 463 709	6 465.5	902.7
1990	20 363	54 141	5 100 637	6 600.8	928.7
1991	22 631	57 280	6 161 912	7 644.5	1 114.7
1992	28 255	67 907	7 971 758	8 338.2	1 933.3
1993	33 042	76 775	9 204 236	9 610.0	2 203.8
1994	36 997	92 048	11 050 030	11 094.7	3 007.9
1995	41 043	109 428	12 528 692	12 717.5	2 873.2

Source: Census and statistics Department, Hong Kong. Hong Kong Monthly Digest of Statistics.

2.4 The impact of international trade policy on logistics development in Hong Kong

The Free Trade Agreement has reduced tariff and nontariff barriers in Hong Kong and promoted the facilitation and fluency of cross-border trade. As a free trade port, Hong Kong has actively advocated and participated in the negotiation and signing of a number of free trade agreements. The World Trade Organization (WTO) was established on January 1, 1995, replacing the General Agreement on Tariffs and Trade (GATT) and also strengthening the rules and discipline of multilateral trade. Hong Kong is a founding member of the WTO and has been actively participating in its affairs. This is the best proof of Hong Kong's firm support for an open and free multilateral trading system. On July 1, 1997, it continued to participate in the World Trade Organization as a separate member under the name of Hong Kong, China. Apart from the World Trade Organization, Hong Kong became a member of the Asia-Pacific Economic Co-operation and Pacific Economic Co-operation Council in 1991. Hong Kong is a full member of the Asian Development Bank and the World Customs Organization. Hong Kong, China is an informal member of the United Nations Economic and Social Commission for Asia and the Pacific and participates in the United Nations Conference on Trade and Development. In April 1994, Hong Kong became an observer of the Trade Committee

of the Organisation for Economic Co-operation and Development. Since July 1, 1997, Hong Kong, China has continued to actively participate in the activities of the Asia-Pacific Economic Co-operation Organisation, the Pacific Economic Co-operation Council and the relevant committees of the Organisation for Economic Co-operation and Development. In addition, goods entering and leaving Hong Kong do not have to pay customs duties, and the visa procedure is easy. Even if some goods need to be licensed, it is only because Hong Kong needs to fulfil its obligations to its trading partners, or meet public health, safety or internal security requirements. These free trade agreements have opened up a wider market for Hong Kong and facilitated the development of trade logistics.

Customs and cargo inspection policies in international trade simplify customs procedures, improve customs clearance efficiency, and reduce logistics time and costs. In this regard, Hong Kong has adopted a series of measures, such as the implementation of an intelligent customs system and the implementation of customs clearance facilitation measures, to improve the customs clearance efficiency of import and export goods and speed up the logistics process. In addition, international trade policy also has strict provisions on the safety inspection, compliance requirements and certification standards of goods. Hong Kong is committed to improving cargo security and compliance, actively implementing international standards and requirements, and strengthening cargo security management and compliance measures in trade logistics.

With the rapid development of cross-border e-commerce, international trade policies have also had an important impact on the e-commerce and logistics industries. The support and standardization of international trade policies are crucial to the smooth development of e-commerce. Hong Kong has actively promoted the formulation and implementation of cross-border e-commerce policies and promoted the development of Hong Kong as a cross-border e-commerce center and logistics hub by establishing e-commerce platforms and simplifying tax refund and customs clearance procedures for cross-border e-commerce.

Of course, trade disputes and sanctions may also lead to changes in trade flows, trade routes and trade partners, which will cause uncertainty and confusion in trade logistics.

3 Current situation of Hong Kong trade logistics

3.1 Hong Kong trade logistics industry overview

As an international trade center and logistics hub, Hong Kong has a well-developed trade logistics industry. Hong Kong's trade logistics industry involves many fields, including freight transport, distribution, warehousing, supply chain management, etc., forming a complete trade logistics service system with advanced logistics infrastructure and communication technology facilities.

Hong Kong is also a major international trade center in the world, and the trade and logistics industry is one of the four pillar industries of Hong Kong's economy and an important source of international competitiveness. In terms of gross domestic product and number of employees, trade and logistics are the top four pillars of Hong Kong's economy. According to WTO statistics, in 2021, the total import and export trade of

goods between China and Hong Kong ranked sixth in the world. According to the data released by the International Shipping Consulting and Analysis Agency, the container throughput of Hong Kong Port in 2021 ranked 10th in the world, with 17.788 million TEUs [7]. Hong Kong International Airport is also one of the busiest international airports in the world today. According to the statistics of the World Federation of Airports, since 2010, the average amount of cargo turnover of Hong Kong International Airport has been ranked first in the world for ten consecutive years, and in 2021, the total amount of cargo turnover was more than 5 million tons. In 2021, Hong Kong will become the ninth largest container port in the world.

3.2 Key players and stakeholders in the industry

The major players and stakeholders in Hong Kong's trade logistics industry include the following:

First, traders and manufacturers. Traders and manufacturers are the main players in the trade logistics industry, sourcing or manufacturing goods from home and abroad and responsible for their transportation, customs clearance and distribution, requiring related logistics services. It is in the interest of traders and manufacturers to transport goods to their destinations on time and efficiently to meet market demand and gain greater profits.

Second, logistics service providers. Logistics service providers, including freight forwarders, shipping companies, airlines, warehousing companies, and distribution companies, perform key operational functions in the trade logistics industry. They provide logistics services, including cargo transportation, warehousing, distribution, supply chain management, etc., to meet the needs of traders and manufacturers. The greatest benefit of logistics service providers is to create high-quality logistics services to obtain the trust and business of the majority of users to open up a wider range of logistics fields.

Third, government agencies and regulators. Government departments and regulatory agencies are responsible for formulating and enforcing relevant laws and regulations and supervising and managing trade logistics activities. The Customs and Excise Department, the Economic Development Agency of the HKSAR Government, the Transport and Logistics Bureau and others are responsible for monitoring trade logistics activities to maintain the safety and convenience of trade. The interests of government departments and regulatory agencies are to maintain public order, protect the rights and interests of consumers, and promote the healthy development of the trade logistics industry.

Fourth, financial institutions and chambers of commerce. Financial institutions, commercial banks, insurance companies, etc., can provide investment, guarantees and other services for commercial transport companies. At the same time, chambers of commerce and industry associations represent the interests of the trade logistics industry and provide industry research, training, networking and voice media support. The interests of these institutions and associations are to provide financial service guarantees, reduce the operational risks of trade logistics companies, and promote the smooth progress of trade.

Fifth, consumers. As the final destination of goods, consumers' demand and demand for trade logistics drives the operation of the entire supply chain. The interest of consumers lies in the ability to obtain high-quality, low-price goods and to obtain goods conveniently and quickly, which also reflects consumers' expectations for the development of the trade and logistics industry.

Together, these key players and stakeholders form the benign ecosystem of Hong Kong's trade logistics industry, and their cooperation and interaction are conducive to driving the development and prosperity of the entire industry.

3.3 Case study of a successful trade logistics business in Hong Kong

Hong Kong International Airport (HKIA). Hong Kong International Airport (HKIA) is now one of the busiest cargo airports in Asia and one of the busiest cargo airports in the world, consistently ranking first in the world in cargo volume and fifth in total passenger volume. The airport offers a wide range of air freight services to connect cargo from all over the world. Through efficient cargo facilities and advanced logistics technology, Hong Kong International Airport successfully handles a large number of trade logistics operations.

Hong Kong International Airport is located at Ched «š - Kok, opened in July 1998 Originally, there was only a first runway and related equipment, but a second runway and related equipment were opened in May 1999. Considering the expansion of passenger and cargo traffic and its long-term development, the Airport Authority of Hong Kong decided to build a third runway. The total construction cost of the third runway is approximately HK $141.5 billion, and construction began in August 2016. Apart from the construction of the third runway, the project also includes the upgrading of the existing second-function passenger building, as well as the construction of a new passenger corridor, a passenger rapid transit system and a baggage management system. As of June 2022, the third runway project of Hong Kong International Airport has been fully completed. With a total runway length of approximately 3,800 meters and an effective length of approximately 60 kilometers, the investment will enhance the passenger and logistics capacity of HKIA several times and strengthen its status as an international aviation hub.

Most of the air cargo and logistics operations at Hong Kong International Airport are operated by private companies. The airport currently has five cargo terminals, which can handle an average of more than 7 million tonnes of cargo a year, the largest of which is Super Terminal 1, which handles 35 billion tonnes of cargo a year, ranking among the top in the world. The cargo agency center is set up in the terminal, including warehouses, loading and unloading platforms, cargo parking airports and office buildings, to provide support for the air cargo terminal.

The study of Hong Kong International Airport shows that Hong Kong has successfully carried out trade logistics business with its own advanced logistics facilities and efficient logistics services and plays an important role in international trade.

4 Advantages and challenges of Hong Kong's trade logistics

4.1 Advantages of Hong Kong's trade logistics industry

Proximity to Mainland China and its impact on trade logistics.

Hong Kong is close to the Chinese mainland, the geographical position is advantageous, and the Chinese mainland has close trade logistics links. This has made Hong Kong an important bridge and hub between Chinese mainland and global trade, greatly facilitating the import, export and transfer of goods. Chinese mainland is the largest source and main destination of Hong Kong's cargo. As shown in Table 2, during 2020, among the countries importing goods from Hong Kong's trade logistics, the trade volume with mainland China was US $304.7 billion, accounting for 55.2% of Hong Kong's total exports. In 2021, in terms of service input, Chinese mainland is the most important source, with a total service input of 196.9 billion yuan, accounting for 41.4% [6].

Table 2. Hong Kong's trade in services with major trading partners, 2019 - 2021

Major services trading partner	Year	lmports of services		
		HK$million	Share(%)	Year-on-year%change
All sources	2019	622295	100	-0.8
	2020	418322	100	-32.8
	2021	475607	100	13.7
1 The mainland of China	2019	234949	37.8	-1.1
	2020	161868	38.7	-31.1
	2021	196904	41.4	21.6
2 United States of America	2019	68177	11	-2.5
	2020	68168	16.3	§
	2021	77043	16.2	13
3 United Kingdom	2019	39340	6.3	4.6
	2220	33215	7.9	-15.6
	2021	33091	7	-0.4
4 Singapore	2019	27189	4.4	-0.2
	2020	25636	6.1	-5.7
	2021	28920	6.1	12.8
5 Japan	2019	50927	8.2	-2
	2020	19306	4.6	-62.1
	221	17841	3.8	-7.6
6 Germany	2019	13827	2.2	-0.3
	2020	11752	2.8	-15
	2021	14801	3.1	25.9
7 Australia	2019	25251	4.1	-3.6
	2020	14588	3.5	-42.2
	2021	14,741	3.1	1
8 Holland	2019	11,089	1.8	0.6

	2020	7812	1.9	-29.6
	2021	10,610	2.2	35.8
	2019	25,209	4.1	-3.4
9 Taiwan	2020	8627	2.1	-65.8
	2021	9248	1.9	7.2
	2019	9222	1.5	-2.7
10 Malaysia	2020	7784	1.9	-15.6
	2021	8469	1.8	8.8

Source: Census and Statistics Department, Hong Kong.Hong Kong Trade in Services Statistics.

In terms of transport construction, the Hong Kong-Zhuhai-Macao Bridge is the longest cross-sea bridge in the world, which mainly facilitates land passenger and cargo transport between Hong Kong, the mainland and Macao and greatly reduces travel time, becoming a new route connecting the east and west sides of the Pearl River Delta. At the same time, there are currently 10 land control points connecting Hong Kong region to Chinese mainland, including six road crossings (Shenzhen Bay, Lok Ma Chau, Man Kam To, Sha Tau Kok, Hong Kong-Zhuhai-Macao Bridge and Heung Yuen Wai) and four rail crossings (Lo Wu, Lok Ma Chau Spur Line, Hung Hom Intercity Through Train terminus and Hong Kong West Kowloon Express Rail terminus).

There are also convenient and efficient cross-border trade policies and customs clearance procedures between Hong Kong region and Chinese mainland. These trade logistics policies simplify the formalities and procedures of cross-border trade and improve the speed and efficiency of Hong Kong's trade logistics. Examples include the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA). With the development of economic globalization, the rapid economic growth of Chinese mainland and the promotion of the Belt and Road Initiative, countries are more closely connected, and Hong Kong will continue to play an important role as a bridge and window for trade exchanges between China and the rest of the world.

Hong Kong's proximity to Chinese mainland gives it a enormous influence in the field of trade logistics. As one of the ports open to the outside world on the Chinese mainland, Hong Kong region provides a channel for the export of commodities on the Chinese mainland, which is conducive to China's smooth opening of the international market. Hong Kong is also an important transit point for imported goods from the Chinese mainland, providing a convenient international trade channel for Chinese mainland enterprises. Hong Kong's trade logistics industry plays an important role in promoting trade logistics cooperation between Chinese mainland and the world.

World-class port facilities.

Located between Chinese mainland and Southeast Asia, Hong Kong is the heart of the Asian region and an important freight hub connecting Asia with the world. The advantageous geographical location makes Hong Kong an important transfer station and distribution center for international trade logistics and a world-class port.

As early as 20 years ago, Hong Kong's port operation efficiency was among the world's best. The average loading and unloading time of bulk carriers is 1.9 d, container

ships are usually 10 h or less, and the annual loading and unloading of 26×104 containers per hectare of terminal land is also among the highest in the world. This highly efficient operation is due not only to the management quality, operation scale and other factors but also to modern port facilities. The Kwai Chung Terminal is one of the most modern container terminals in the world, with 7 terminals. Advanced facilities, a high degree of mechanization, in 1993 handled 580×104 standard containers. In addition, the recently completed Stonecutters Island Pier 8 also has an annual handling capacity of 180×10 standard containers. A total of 5,989 m long container terminals can accommodate 19 third-generation (35×10 t class) container ships at the same time. Due to the limited land for wharfs, it is a characteristic of Hong Kong port operation to make full use of the wide water surface of the flood area to replace the wharfs with pontoons for ships to berth and load cargo. The port has 78 pontoons, which are divided into berthing areas and anchorage areas according to the central channel of the port, and thousands of barges of different sizes come and go during the period, which integrates loading and unloading, transportation and storage functions in one and is flexible. The port's buoy facilities primarily serve bulk carriers, but in recent years, there has been an increase in services for container carriers. In 1993, approximately 280×104 standard containers were handled, accounting for 1/3 of the container throughput in Hong Kong.

As a world-class port, Hong Kong has advanced logistics infrastructure: modern port terminals, airports, cargo centers and logistics parks. At present, there are 9 container terminals in Hong Kong, with a total of 24 berths, which can accept various large-scale means of transport and handle various types of bulk goods, providing a good logistics environment and convenient conditions for the development of the trade logistics industry, which is conducive to the efficient completion of trade logistics.

Hong Kong is equipped with perfect communication technology facilities, including high-speed Internet and mobile communication technology, as well as advanced road, railway and airport communication systems. These technologies and facilities promote the digital and intelligent development of Hong Kong trade logistics, with information sharing, online transactions, real-time tracking and other functions, making it more convenient for Hong Kong and the mainland and other countries to esdlish information connections and provide instant communication updates for trade logistics.

Advantages of a free trade environment and customs.

As a free port, Hong Kong enjoys a high degree of freedom in its foreign trade policy and the advantages brought by its free trade policy and open economic environment; that is, when carrying out trade logistics activities in Hong Kong, goods can enjoy the treatment of tax exemption or low tax rate, which improves trade efficiency and cost competitiveness. In the World Trade Organization's Global Trade Facilitation Index, Hong Kong has been ranked among the top in the world for many years in a row. In addition, Hong Kong does not restrict the right to import and export commodities, all Hong Kong organizations and individuals can apply for import and export commodities, and there is no need to declare and register with Hong Kong. Hong Kong has signed free trade agreements with many countries and regions, such as mainland China, ASEAN, Europe and other regions. Such FTAs have broken down trade barriers and reduced trade tariffs, opening up a wider global market for Hong Kong's trade logistics

industry. The Organization for Economic Co-operation and Development (OECD) regularly ranks Hong Kong first in the world in its Index of Economic Freedom.

In terms of customs, Hong Kong Customs implements an efficient and convenient customs clearance system to provide fast and convenient import and export declaration and clearance services. According to the World Bank's Trade Facilitation Index report, Hong Kong's customs efficiency ranking in cross-border trade is usually among the top in the world. Hong Kong has a simple, low-rate customs tax system, no value-added tax or customs duties, and no tariffs on imports and exports. The Customs and Excise Department has also championed digital trade, providing a range of online self-service services, including electronic declaration and payment systems, which have greatly improved the efficiency of cargo clearance. According to the Hong Kong Customs and Revenue Department, approximately 95% of goods can be cleared immediately upon entry or exit. In addition, the department has adopted modern customs technologies such as intelligent surveillance systems and advanced image recognition technology to ensure the safety and compliance of cargo. This has made Hong Kong an important entrepot trade center, attracting many trade logistics businesses, and many international companies regard Hong Kong as a trade and logistics base.

4.2 Challenges facing Hong Kong's trade logistics industry

The first is geopolitical changes and trade tensions. Hong Kong's trade logistics industry has long benefited from its geographical location and close links with mainland China as well as a favorable trading environment, but geopolitical changes and trade tensions in recent years may lead to a reduction in trade flows, which in turn affects Hong Kong's trade logistics industry. For example, the trade war between China and the United States led to higher tariffs on some imports and exports. In 2018 and 2019, the United States imposed additional tariffs on tens of billions of dollars worth of Chinese goods, some of which were as high as 25%. Thus far, tariffs on some commodities have remained high, thus affecting their transshipment through Hong Kong ports. At the same time, some international enterprises will reassess the value of their business in Hong Kong and consider whether to relocate to other regions.

The second is political uncertainty. As a special administrative region of China, political uncertainty in Hong Kong could have a negative impact on the trade logistics industry. Demonstrations and political tensions can easily lead to traffic jams, transport disruptions and financial stagnation, which in turn affect the functioning of trade logistics.

There is also the impact of increasing anti-globalization trends and changes in global supply chains. In recent years, the anti-globalization trend has been spreading, and the global supply chain has changed. Some countries and enterprises are increasingly concerned about the diversification of risk and supply chains and may take relevant measures to restrict trade with Hong Kong or transfer the trade supply chain from Hong Kong to other regions to reduce the degree of dependence on Hong Kong, which will have a more adverse impact on Hong Kong's trade logistics industry.

Hong Kong's trade logistics industry faces multiple challenges, such as geopolitical changes and trade tensions, but as an important international trade and logistics hub,

Hong Kong can leverage its existing strengths to address these challenges by adapting to changes and seeking new opportunities.

5 Government measures and policies for the development of trade logistics

5.1 Hong Kong Government's support for the trade logistics industry

After Hong Kong was occupied as a colony by the British in 1840, it was declared a free trade port and pursued a free trade policy. Through historical changes, Hong Kong has gradually developed from a single enterprise trade port into a free trade port with a diversified economic structure. The legal system of Hong Kong Free Trade Port is free, open, independent and flexible. These characteristics provide Hong Kong with unique advantages in the development of the trade logistics industry. The Hong Kong government has also fully recognized the advantages of Hong Kong and introduced a series of policies to support it.

Due to its large population, limited land and scarce resources, Hong Kong has always relied on the Chinese mainland as its hinterland for economic development and fully developed economic and trade relations with the Chinese mainland to ensure the stable development of its own economy [1]. Therefore, in 2003, Hong Kong region and Chinese Mainland jointly signed the Mainland and Hong Kong Closer Economic Partnership Arrangement (CEPA), and in the CEPA, it is mentioned that Chinese mainland and Hong Kong region can achieve zero tariffs on goods trade. We will promote the coordinated development of the two places at the government level. In December 2018, Hong Kong launched the "Trade Single Window Phase 1", which covers 14 types of trade documents and is now fully operational. On 15 May 2023, the Hong Kong government launched the second phase of the Single Trade Window service, which covers 14 types of trade documents and will gradually be extended to cover a total of 28 types of trade documents. According to a Hong Kong government spokesperson, "The 28 types of trade documents covered in Phase 2 will be processed in excess of 1.1 million documents in 2022." The government will promote Phase 2 services through a comprehensive support, publicity and training programme. We encourage the trade to log on to the Trade Single Window website to register as a user and submit the newly covered trade documents through this one-stop platform to further help the trade save time and cost and enhance the efficiency of cargo clearance in Hong Kong." [2]. The Hong Kong government expects to fully implement the single window for trade in 2027. Due to its advantages, such as convenient customs clearance and preferential tax treatment, Hong Kong has attracted an increasing number of enterprises to conduct cross-border e-commerce business through Hong Kong and has greatly improved the business volume of Hong Kong's express delivery industry. These changes are precisely because of the Hong Kong government's strong support for the trade logistics industry.

5.2 Regulatory framework and trade facilitation measures

After Hong Kong was occupied as a colony by the British in 1840, it was declared a free trade port and pursued a free trade policy. Through historical changes, Hong Kong has gradually developed from a single enterprise trade port into a free trade port with a diversified economic structure.

Hong Kong's numerous facilitation measures have also promoted the sustainable development and growth of Hong Kong's trade logistics. It only takes three steps to register a foreign company in Hong Kong. i check whether the business name is available at the online registry or the Companies Registry; ii. provide the necessary documents for the registration of the company electronically or in paper form; iii approved and filed the Company Registration Certificate and Business Registration. The simple and convenient registration has attracted an increasing number of foreign enterprises to register in Hong Kong. In addition to the convenient registration policy, the relaxed registration conditions also provide more development opportunities for small and medium-sized foreign-funded enterprises. For example, Hong Kong has no special restrictions on the number of foreign-funded enterprises registered. In addition, after the establishment of a foreign-capital enterprise, the registered capital can be increased at any time after the vote of the general meeting of shareholders.

The advent of the digital age has also helped the trade logistics industry. Among them, the E-Link Scheme can provide an electronic means to simplify customs clearance procedures. The traditional paper-based distribution was abolished and replaced by electronic means. "Haiyi Tong" can reduce the time cost of manual input and verification of information, and it is also easy to save statistical information electronically. The "Haiyi Tong" also does not charge for related procedures, which is the existence of a trade facilitation measure milestone.

6 Future trend and innovation of trade logistics

6.1 Potential impact of emerging technologies on trade logistics

With the continuous development of information technology, the trade logistics system is also constantly optimized. In particular, supply chain management, as mentioned above in the "Haiyi Tong program", uses electronic customs clearance for simplification, reducing labor and time costs. In addition to electronization, information technology has also brought about great changes in the mode of transportation. For example, cold chain transportation, which integrates all links, establishes a transportation system of temperature and humidity monitoring throughout the whole process. The application of this emerging technology has significant advantages for the transportation of specific fields, such as medicine and food [3].

The Multi-Technology Research and Development Centre for Logistics and Supply Chain (LSCM) [4]was established in 2006 with funding from the Innovation and Technology Fund of the HKSAR Government. It is run by the University of Hong Kong, the Chinese University of Hong Kong and the Hong Kong University of Science and Technology to provide one-stop applied research and development (R&D) and technology

transfer services, strengthen the development of the local logistics and related industries, and enhance the collaboration between the industry and R&D institutions in applied research to bring meaningful and influential benefits to the industry and the community. LSCM has developed accompanying robots with platoon-driving technology. The technology uses ultrawideband and visual technology for personalized following and has an automatic collision avoidance system. It can effectively improve the efficiency and productivity of the warehouse, reduce the pressure and workload of the workers, and help the operator move heavy objects.

Many of the new technologies invented by LSCM have had a large impact on the trade logistics industry. Automatic storage operations and automatic transportation logistics robots can achieve unmanned automatic handling and transportation. The invention of robots effectively solves the problem of labor shortages in the logistics industry and can also realize high-precision logistics operations and improve transportation efficiency. The invention of 5G remote control warehouse stackers can control multiple stackers in real time (and even operate in different places), improving operational efficiency. With the movement of 5G communication networks, communication has become more reliable and real-time. At the same time, the 5G remote control truck uses auxiliary mobility technology and safety sensors, which means that the operator can operate without much training. This gives more people a chance to work, and it also helps companies recruit people.

6.2 Sustainable logistics practices and green initiatives

Under the trend of sustainable development, green logistics has become an international trend. Logistics uses sea, land and air transportation, and the carbon emissions caused by the transportation process become a problem that cannot be underestimated. The International Civil Aviation Organization (ICAO) has put forward the "Carbon Offsetting and Emission Reduction Plan for International Aviation", which aims to encourage the industry to use alternative energy sources such as biofuels by 2035, improve aircraft performance and energy efficiency with advanced aviation technology, and reduce the carbon footprint of the shipping industry. [5]. At the same time, land logistics transport also uses trams to transport goods to reduce carbon emissions.

6.3 Improve supply chain visibility and transparency

The application of emerging technologies simplifies the entire supply chain management. From the source to the destination, the whole process of cargo transportation, inventory, customs clearance and distribution can be tracked and monitored electronically in real time, making all aspects of logistics convenient, transparent and real-time and greatly improving the communication and management efficiency of the logistics industry.

The Internet of Things can improve the visibility of the supply chain, through which enterprises can track goods in real time and monitor the condition of goods in transit. We use the visibility platform "Visibility", which provides cargo tracking and visualization so that customers can monitor their shipments throughout the logistics process.

The Sun Tong Hong Kong Co., Ltd. also developed a separate warehouse management system "MARS", the use of advanced technology to manage the warehouse, greatly improving the transparency of the company's internal warehouse management.

6.4 Forecast future challenges and opportunities for trade logistics

As one of Hong Kong's four pillar industries, trade and logistics have made great contributions to Hong Kong's economy and employment. However, in the past, the performance of parts of the logistics industry has declined. In 2004, Hong Kong's container throughput was 21.98 million TEU, ranking first in the world. In 2020, Hong Kong's container throughput was 17.97 million TEU, ranking ninth in the world. Coupled with the inherent unfavorable conditions, such as an insufficient supply of logistics land, the development of the logistics industry has brought great challenges[8].

The fundamental weakness of Hong Kong is the lack of land supply, resulting in very small exports of goods from Hong Kong's manufacturing industry, which cannot provide stable supply support for Hong Kong's logistics industry. The development of Hong Kong's logistics industry depends more on the convenience of its free port, becoming a transit station for China's inland and foreign goods, and Hong Kong must also give play to its advantages in future development.

However, the greater challenge facing Hong Kong's logistics industry is the deteriorating external environment, such as globalization and the Sino-US trade conflict, which have caused many negative impacts on the global production chain in which Hong Kong is a part, and the new coronavirus epidemic that has lasted for more than a year has dealt a heavy blow to Hong Kong's business environment. At the same time, more stringent international requirements for security and environmental protection not only bring additional manpower, money and time costs to logistics companies but also pose greater challenges to the current business model.

The Hong Kong logistics industry can promote the development of the Guangdong-Hong Kong-Macao Greater Bay Area market on the basis of the framework of the area. Although there are some differences in political and economic policies between Hong Kong and the PRD, Hong Kong can also make use of their respective advantages, such as different customs and monetary regimes, to enhance the unique business environment of the Guangdong-Hong Kong-Macao Greater Bay Area in the world. Attract investors and customers with different needs and considerations, including international logistics enterprises, to enter the Guangdong-Hong Kong-Macao Greater Bay Area market.

7 Conclusion

This paper analyzes and researches Hong Kong's trade logistics industry mainly by using literature research method, qualitative analysis method and survey method. Firstly, the background conditions of Hong Kong as a trade logistics center are briefly introduced from the aspects of geographic location, historical factors, policy advantages, advanced facilities, and financial status, highlighting the importance and necessity of

trade logistics for Hong Kong. Secondly, in-depth analysis from the historical development level reveals that trade logistics is of great significance to Hong Kong's economic growth, not only promoting the development of related industries, but also consolidating Hong Kong's position as an international trade and financial center. Then the current situation of trade logistics in Hong Kong is introduced through case studies. Based on the analysis of the current situation, the strengths and challenges of trade logistics in Hong Kong are also summarized. The favorable geographical location, port measures and free trade environment give Hong Kong a competitive edge in trade logistics. However, political uncertainty and the trend of anti-globalization also make Hong Kong face challenges. Lastly, Hong Kong's drive for innovation and digital transformation has helped to improve the competitiveness of Hong Kong's trade logistics and laid a solid foundation for future economic growth. At the same time, Hong Kong needs to develop a regional trade and logistics hub, emphasize regional cooperation in the Guangdong-Hong Kong-Macao Greater Bay Area, actively use innovative technologies to develop cross-border e-commerce and the Internet economy, focus on sustainable development, and firmly grasp the opportunities for development to promote Hong Kong's economic prosperity.

References

1. Meng Li, (2017). The enlightenment of Hong Kong Free Trade Port system to China's free Trade area. Available: https: // www. mpu. edu. mo/ cntfiles/ upload/ docs/ research/ common/1country_2systems/2017_3/16.pdf.
2. Hong Kong: Launch of the second phase of Trade Single Window service to enhance cargo clearance efficiency. (2023.5.15). ZhiTong Financial. Available: https: // www. 163. com/ dy/article/I4PR456S05198UNI.html.
3. Emerging technologies will have six major impacts on the port and shipping industry. (2019.9.29). Available: http://www.centex.cc/list/10/3738.htm.
4. Logistics and Supply Chain MultiTech R&D Centre (LSCM). Available: https: // www. innovationhub.hk/zh-cn/articles/lscm.
5. Yongjian Chen and Zhile Fu, (2023.2.15). The Road to Zero Carbon: Planning a Green Logistics Route. Available: https://research.hktdc.com/sc/article/MTI5NTM2NDc3OQ.
6. Census and Statistics Department, Hong Kong Special Administrative Region Government. (2021.2.28). Hong Kong Trade in Services Statistics, pp.7-45.
7. Yun Zhong and Kai Bang Hong. (2023). “Study on the development of Hong Kong trade logistics industry from the perspective of global value chain”. Hong Kong and Macao studies, pp.28-40.
8. Hongkang Du, (2023.3.1). Overview of Hong Kong logistics industry. Available: https://research.hktdc.com/sc/article/MzExMjkxOTgy.