

A Comparative Study on the Competitiveness of Main Ports between China and Singapore from the Perspective of International Trade

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ABSTRACT

Under the background of international trade circulation, this paper compares the advantages and disadvantages of the main ports of China and Singapore, and finds that the competitiveness of ports is affected by the following two kinds of factors: one is the internal factors, such as the hardware conditions and service types of ports; The other is external factors, such as the financial environment, traffic environment, geographical environment, regional economic environment and so on. The article holds that to enhance the competitiveness of Chinese ports, we must integrate resources, improve and innovate the service projects of ports, pay attention to the introduction of management talents and the innovation of circulation technology, and pay attention to the strategic cooperation between ports. The government should support the opening of China's ports from the policy level.

Keywords: *international trade circulation, Port competitiveness, Port of Singapore, Chinese ports.*

1. THE INTERRELATION BETWEEN INTERNATIONAL TRADE AND PORT COMPETITIVENESS

1.1.the improvement of port competitiveness can further promote the development of international trade

First, increase the economic output of international trade. In the early days, ports represented transportation, but under the driving force of the global economy, ports are a comprehensive service system involving multiple fields. In addition to the warehousing and distribution of goods resources known to all, most ports have developed their own production lines to be responsible for processing and distribution[1]. The vast majority of international trade is carried out in large ports. The port comprehensive service system includes all the circulation activities around the port, including financial services and other services in addition to production, processing, distribution and storage, which are important indicators to measure the comprehensive strength of a port. After reaching these hardware and software conditions, it depends on the service level and efficiency of the port. A port with outstanding comprehensive ability will surely bring active international trade.

Second, we will improve the allocation of factors of production in international trade. The allocation of factors of production in international trade is affected by multiple human and natural factors. The more outstanding the comprehensive ability of a port is, the stronger its ability to optimize the factors of production will be. Those who pay attention to from the perspective of global view, outstanding comprehensive ability of the port circulation can become a psychological boost, will help achieve international trade from the perspective of the most economic production factors such as personnel, the optimized allocation of capital, technology, information, etc, and at the same time ensure performance is not destroyed, the basis of the elements, give full play to its function. In general, how to combine these resources, how to give full play to their maximum function, and can fully control it, which is also an important performance of a port with strong competitiveness.

Third, promote the growth and progress of the international trade industry. Port trade belongs to the tertiary industry and has a strong attribute of service industry. In order to strengthen the international competitiveness of their ports, many big ports begin to take the route of strategic alliance, and will choose those ports with similar regional locations, overlapping

economic hinterlands and similar strategic development goals as strategic partners, which is also the future development direction of world port trade. As the world economy develops today, the primary industry and the secondary industry have reached the top, leaving no room for development. The tertiary industry will be the main driving force for future economic development.

Fourth, we need to promote specialization in international trade. Port trade belongs to the service industry, but with the emergence and expansion of more and more subsidiary industries and value-added services, port trade is an independent creation industry, and its services extend to a wider range of fields. Port trade can optimize the division of labor of international trade, mainly because some large enterprises in the port hinterland can outsource the circulation link to the port circulation department by virtue of their geographical advantages, and the freed manpower and financial resources can concentrate on the development of core products of enterprises and focus on production. This function of port circulation is very beneficial to the adjustment of international trade division of labor and the improvement of economic benefits

1.2. Efficient international trade can promote the overall improvement of port competitiveness

First, the thriving international trade is the foundation of the development of port circulation. Ports are originally carriers of circulation, and the basis of their development is international trade. Only with this foundation can we carry out cooperation in a variety of forms. International trade is an important thrust of port circulation. At the same time, port trade serves the economy. The more developed the economy of a region is, the more frequent the trade exchanges will be, the clearer the division of labor and cooperation will be, and the demand for circulation and the function of circulation will be better reflected. Because the developed international trade brings economic goods to and from various countries and regions in the world, and for these frequent trade, port conditions are the most superior, but also the most appropriate, the most economic choice.

Second, the agglomeration of international economic structure is the premise of the development of port circulation competitiveness. More and more industrial combination and strategic cooperation bring considerable economies of scale, which further expands the original market scope, and further improves the professional level in the process of complementary and mutual learning.[2] In the same region, enterprises of the same type often appear on a continuous scale[2]. They gather together to drive economic benefits, share resources and share economic risks, which is the so-called economies of scale. Port area trade centers and trade parks are generally formed in the vicinity of ports to provide professional and efficient circulation services for customers nearby, which

is the necessary prerequisite for the development of port circulation and the improvement of competitiveness.

Third, the trend of economic globalization is the main impetus to enhance the competitiveness of ports. The trend of international economic development is to break the regional restrictions and take an open economic development model. For ports, the open international economy has produced unprecedented market development potential, commodities flow around the world, the importance of port circulation has become more prominent. Huge and more and more frequent commodity trade is bound to put forward higher requirements on the service level, service capacity and service category of port circulation. If the port circulation can provide efficient services for the modern open economy, it will stimulate its sustainable development towards a more professional and more perfect service system. Therefore, international trade is the main driving force to promote the port circulation to a higher level and a higher field.

2. THE INFLUENCING FACTORS OF PORT COMPETITIVENESS

PORT COMPETITIVENESS IS MAINLY LIMITED BY THE FOLLOWING SIX CONDITIONS

2.1. Hinterland regional economy

The competitiveness of hinterland regional economy port and hinterland regional economy complement and promote each other. The supply region that supports port development is hinterland, whose overall industrial composition, systematic integration degree of collection and distribution and development of economic operation mode will directly determine the competitiveness of the port in this region.

2.2. Basic equipment status

Port competitiveness is related to wharf, gate, channel, yard, berth, warehouse, transportation facilities and loading and unloading equipment and other conditions. As long as such basic equipment is integrated, the quality and income generated by it will determine the level of port competitiveness.

2.3. Collection and distribution capacity

The collection and distribution capacity can reflect the operational effectiveness of distribution and distribution nodes. As the central content of port competitiveness, the level of operation effectiveness of trade circulation can determine the level of port production benefit, and the key component of port competitiveness is port production benefit.

2.4. Auxiliary production capacity

As an important component of the whole service system, auxiliary production capacity plays an assisting role in port production and development. Its contents include tugboat diversion, ship reserve, port affairs, equipment maintenance, legal arbitration, customs, consultation, inspection and quarantine, agency, insurance and other aspects of the port. The object of these auxiliary services is the port, and the quality of the auxiliary services also has a certain impact on the competitiveness of the whole regional port.

2.5. The level of information technology

The quality of information technology can directly affect the economic development of a port and the speed of obtaining relevant information in the region. Information technology can help the port to save more labor time, and at the same time, its efficiency has been greatly improved. If the port can connect the information system with other overall systems and subsystems, and make it a systematic platform to realize the effective dissemination and sharing of information, and at the same time make it smoothly realize the systematic operation, then the competitiveness of the port must not be underestimated.

2.6. Operation management level management

Operation management level management is also a form of strength, it can achieve the integration and control of resources, in addition, organization and planning, management and control, as well as the prevention of production duplication and inefficiency, are regarded as a hidden port competitive strength, but also as an important component of the port competitiveness.

3. A COMPARATIVE STUDY ON THE COMPETITIVENESS OF MAIN PORTS OF CHINA AND SINGAPORE

3.1. Introduction of Main Ports of China and Singapore

3.1.1. Top 10 ports in China. (According to China's Ministry of Commerce data as of January 2021, the top 10 coastal ports in China are as follows.)

No.1 Shanghai Port. The port of Shanghai, China, is known as the world's largest port. Statistical results in the first quarter of 2021 show that the total cargo throughput of Shanghai Port is 65.53 million tons, up 18.4% year on year, and the container throughput is 11.34 million tons, up 21.6%. As early as in 2014, the cargo throughput of Shanghai Port surpassed that of Singapore Port, ranking

the first place and gaining the honor of being the largest cargo port in the world.

No.2 Ningbo - Zhoushan Port. Ningbo-Zhoushan Port is the port of Ningbo City and Zhoushan City in Zhejiang Province of China. It is located in the central coastline of the Chinese mainland and the south wing of "Yangtze River Economic Belt". It is a Class I port open to the outside world in China. In January 2021, the cargo throughput was the only port in China with a cargo throughput exceeding 100 million, with an increase of 15.5%. In the first quarter of 2021, the container throughput was 7.69 million tons, with a growth rate of 25.1%, showing an extremely rapid development trend.

No.3 Shenzhen Port. Shenzhen Port is a port in Shenzhen, Guangdong Province, China. It is located in the southern part of the Pearl River Delta, at the mouth of the Pearl River and the east bank of Lingdingyang, adjacent to Hong Kong, and is one of the estuaries in the Pearl River Delta area. In the first quarter of 2021, the completed container throughput of Shenzhen Port was 7.22 million tons, with an increase of 35.3%. Further consolidated the position of international container hub port.

No.4 Qingdao Port. The business of Qingdao Port covers Shandong, radiates to the Yellow River and reaches to Central Asia. In the first quarter of 2021, the cargo throughput reached 52.38 million tons, with a growth rate of 3%. The number of containers was 5.55 million tons, up 10.1 percent.

No.5 Guangzhou Port. It is the port of Guangzhou City, Guangdong Province, China, which is located at the mouth of the Pearl River and the center of the Pearl River Delta region, near the South China Sea and adjacent to Hong Kong and Macao. Guangzhou Port is the largest comprehensive main hub port and container trunk port in South China. At present, it has opened 131 international container liner lines and achieved a cargo throughput of 636 million tons in 2020, ranking the fourth port in the world. In the first quarter of 2021, the cargo throughput reached 5671 tons, with a growth rate of 19.2%; Container throughput was 5.55 million tons. With a growth rate of 17.1%, the cargo throughput and container throughput in the country's coastal ports ranked third and fifth.

No.6 Tianjin Port. Tianjin port is located in the west of Bohai Bay. It is a sea of Beijing-Tianjin-Hebei portal, is in the eastern Mongolia Russia economic corridor starting point, the new Asia-Europe continental bridge important node, the maritime silk route strategic fulcrum in the 21st century. In the first quarter of 2021, the cargo throughput of Tianjin Port reached 45.54 million tons, an increase of 20.4%; Container throughput was 4.47 million tons, up 20.4 percent.

No.7 Xiamen Port. Xiamen Port is located in the southeast coast of China and the west coast of the Taiwan

Strait. It is located in the south of Fujian Province and the mouth of Jiulong River. It is a major port along the coast of China, a Class I port of China's opening to the outside world, and one of the major mouths of Fujian Province. Xiamen Port, as the port with the most diversified shipping methods to Taiwan, handled 2.8 million tons of containers in the first quarter of 2021, up 11.2%

No.8 the port of Suzhou. Suzhou Port is located in Suzhou City, Jiangsu Province, China, at the throat of the Yangtze River estuary. It is close to Shanghai in the southeast and the economically developed Suzhou, Xi and Changzhou areas in the southwest. In the first quarter of 2021, the cargo throughput was 16.13 million tons, up 14.9%; Container throughput reached 1.8 million tons, up 42.1 percent.

No.9 Yingkou Port. Yingkou Port has a long history, and the project of opening port to the outside world has a history of more than 140 years. It was once known as the "good trade port of the East" and was known all over the world. From the beginning of the 21st century, Yingkou Port has gradually developed into a more professional, deep-water and multi-functional port. In the first quarter of 2021, the cargo throughput of Yingkou Port reached 58.21 million tons, and the container throughput reached 1.28 million tons, ranking the ninth.

No.10 Beibu Gulf Port. Beibu Gulf Port, located in the southern part of Guangxi Zhuang Autonomous Region, is one of the major ports along the coast of China. Beibu Gulf Port is bordered by Chongqing, Yun and Guizhou in the north, Guangdong, Qiong, Hong Kong and Macao in the east, Vietnam in the west and Hainan Island in the south. It is located at the junction of South

China Economic Circle, Southwest Economic Circle and ASEAN Economic Circle, and it is the most convenient sea portal for China's inland hinterland to enter the ASEAN countries on Indo-China Peninsula. In the first quarter of 2021, the cargo throughput was 82.7 million tons, up 28.5%; Container throughput was 1.26 million tons, up 36.8 percent.

3.1.2. The main ports of Singapore.

There are six major ports in Singapore, namely Pasir Panjang, Brain, Cosco-Psa, Jurongkeppel, Sembawang, Tanjung Pagar, the largest of which is Pasir Panjang, Compared with the independent operation of the major ports in China, Singapore has a small area and no difference in the hinterland of the ports. The major ports often operate jointly and carry out trade circulation, so they are collectively called the Port of Singapore. The geographical location of the port of Singapore is more international, and the economic value and strategic value between the Pacific Ocean and the Indian Ocean are very outstanding. High-tech industries, such as electronics and oil refining, are among the world's top industries.

3.2. Comparison of the competitive advantages between China's major ports and Singapore's major ports

Based on the analysis of the characteristics of China's main ports and Singapore's main ports, this paper compares the competitive advantages of China's main ports and Singapore's main ports (see Table-1).

Table -1 Comparison of Competitive Advantages between Major Ports of China and Major Ports of Singapore

Advantages of China's major ports	Advantages of Singapore's main ports
<p>1. Wide coverage. The top ten coastal ports cover Shanghai, Jiangsu, Zhejiang, Anhui, Jiangxi, Sichuan, Hubei, Hunan, Fujian, Guangdong, Liaoning, Shandong and other provinces, with a vast economic hinterland. For example, Shanghai Port and Ningbo Port, as the most prominent ports in the Yangtze River Delta and the national port development, play a leading role in the background of the nat.</p> <p>2. Advantage of traffic conditions. For example, Shanghai Port connects the east and west transportation channels of the Yangtze River, having both inland and maritime advantages. It connects with the south and north coasts of China, the Pacific Ocean and the Indian Ocean to the south, and is adjacent to the Yangtze River Basin. The main railway lines and expressways in the port area extend in all directions, forming the transport arteries from east to west to north and south;</p> <p>3. Advantage of port hardware conditions. For example, Shanghai Port, Ningbo Port, Tianjin Port and Xiamen Port are connected by islands and expressways in the east-west, north-south direction, so the maritime and land transportation advantages are obvious.</p>	<p>1. Geographical advantage. Singapore's ports enjoy the unique geographical advantage of the Strait of Malacca;</p> <p>2. The world famous free port. Singapore's ports are world-renowned for their financial openness and freedom of trade and navigation.</p> <p>3. Financial advantages. The ports of Singapore belong to the international finance and international trade center, for example: Singapore Hong Kong-style international finance and trade center;</p> <p>4. Advantage of port hardware conditions. Port equipment, ship management and loading and unloading operation efficiency are in the world's leading level;</p> <p>5. Innovate services. Provide shipping and IT, circulation, supply chain solutions; 6. Separate government from enterprise.</p>

Can be seen from table 1, compared with China's main port and Singapore port is characterized by higher management level, port efficiency is high, the value-added service is abundant Rich, compared with the quantity of port, port of Singapore has been focus on intensive development, is good at with a minimum of human cost, minimum economic input to obtain the biggest economic returns. Because clear its own positioning, attach importance to high-tech output, and the management is extremely perfect, so the output is far higher than other countries' ports; The feature of most ports in China is that "it is good to enjoy the shade by leaning against a tree". They have a vast economic

hinterland and obvious advantages in location and transportation.

Comparison of the competitive disadvantages between China's main ports and Singapore's main ports

3.3. In addition to the comparison of the competitive advantages, this paper further compares the competitive disadvantages of China's major ports and Singapore's major ports. (See table - 2)

Table -2 Comparison of Competitive Disadvantages between Major Ports of China and Major Ports of Singapore

Disadvantages of Shanghai Port	Disadvantages of Singapore Port
1. Low utilization rate of port resources, unreasonable management and allocation. 2. The comprehensive service and management level of the port is low. 3. The proportion of resources and the transportation structure are unreasonable.	1. Due to its geographical environment, Singapore does not have a large economic hinterland to support it. 2. Competitive pressure of ports in Southeast Asia.

Ports of Singapore is the only major defects without economic hinterland advantage, rather than in the talent introduction and training, this port circulation in the human resources department in our country land area with little economic scale is smaller, but its information technology, the circulation system, financial services, trade and economic is one of the world's leading service level and capacity.[3] Singapore ports go specialization, scale, intensive and value-added development route, this approach can reduce the economic cost to the greatest extent, realize the double appreciation of the transit trade, so as to make the port of Singapore is famous for its rigorous and efficient operation of the world, these are the main port in China lacks, and unable to catch up in the short term.

enhance its competitiveness. Although the port of Singapore has a small economic circle and has not formed regional economic advantages, its status as an international financial center and advantages in the international geographical position of the port are enough to make up for the defects of the economic hinterland, and it can still attract a large number of goods. Singapore just transit port of the port, but it has caught the feature, the value-added service development in full swing, this is China's coastal ports are very short, if in the vast economic hinterland can also will study Singapore port development of value-added business experience, can greatly enhance the international competitiveness of Chinese ports.

3.4. Comparative analysis of the competitiveness of China's main ports and Singapore's main ports by comparing the advantages and disadvantages of the two countries' main ports.

4. STRATEGIES AND SUGGESTIONS FOR ENHANCING CHINA'S PORT COMPETITIVENESS FROM THE PERSPECTIVE OF INTERNATIONAL TRADE

China's ports can learn from Singapore's port a lot of advanced experience that it lacks, such as changing the extensive mode to the intensive mode of development. For example, Shanghai Port has far more resources than Singapore Port, but the development has no clear purpose and the management is backward, resulting in a large amount of waste of resources. It can learn from the intensive development route of Singapore. Singapore port has perfect hardware facilities, strong comprehensive quality and ability of personnel, high port information level and high operation efficiency, all of which are better than Shanghai port. Therefore, Shanghai port should strengthen its study in these aspects to

4.1. Increase the opening of China's ports from the policy

First, further opening up. The main carrier of port circulation is the circulation of goods. To enhance the competitiveness, the first thing to do is to expand the circulation and international trade. In addition to the domestic market flow, it is more important to have the market demand in the international field, which is the basis of becoming an internationally competitive port. Leading by Shanghai port, China's ports can open their horizon, fully tap potential resources, strengthen export-oriented economy, make use of their own unique

advantages of ports, and vigorously develop entreport trade. The level of opening to the outside world is also the key to enhance the competitiveness of China's port circulation[4]. The port is an open industry, so the higher the level of openness, the wider the scope of influence, the faster and higher the economic benefits of the port.

Second, we need to innovate regional cooperation models. Regional cooperation is an important trend of port competitiveness development in recent years. The benefits of regional cooperation include learning from experience, complementarity, resource sharing and risk sharing. Cooperative development in some important areas, such as finance, shipping and Marine industry, can greatly reduce input and maintenance costs.

4.2. Increase financial input

The state shall set up special funds to provide necessary economic support for the infrastructure construction of ports, the development of key projects and the expansion of bases, etc. In addition, most ports in China to promote the pilot offshore accounts for export-oriented enterprises to open offshore accounts in China, and so on.

4.3. Pay attention to the introduction of management talent and circulation technology innovation

Ports of Singapore is the only major defects without economic hinterland advantage, rather than in the talent introduction and training, this port circulation in the human resources department in our country to realize the importance of talent, not restricted by geographical, cultural, age, solicit comprehensive quality highlight the flow of talent; In terms of training, the staff of different departments, different positions and different types of work should be trained and assessed on schedule every year. Organize excellent employees to visit and study in top ports of developed countries every year. In the field of circulation technology innovation, we should follow the trend of The Times and improve the coverage of information network in port circulation, so as to increase the degree of sharing and utilization of resources and reduce economic costs. Improve the port circulation information service platform, build a set of information system connecting various enterprises and fields, so that the unimpeded access to resources; We should innovate the concept of port management, optimize the production mode, take the route of informatization development,[5] and improve the level and efficiency of port operations. In addition, it is also very important to optimize the working process of the port, which can greatly improve the internal efficiency, establish a good image of the port and obtain a good social reputation. In general, all the innovation activities of China's port circulation technology should be carried out in an orderly manner

according to their own comprehensive strength and actual needs, and must not blindly seek change and be eager for quick success and instant benefits.

4.4. Management and Optimization of China's Port Clearance Environment

First, improve the efficiency of port clearance. As with any process, you want to improve efficiency, save time, and reduce costs. To optimize the customs clearance environment and improve work efficiency, the customs clearance department of Shanghai Port can introduce part of the experience of Singapore Port, such as strengthening information construction and setting up electronic one-stop customs clearance, which not only saves manpower and time, avoids the possible mistakes caused by human operation, but also provides 24-hour continuous acceptance service. At the same time, through the popularization of information technology, it can also

provide customers with reservation service, avoid congestion in peak hours, save time for customers, and reduce their workload. Secondly, seek feasible innovation of port customs clearance system. The time-consuming and labor-intensive procedures for declaration, inspection and inspection of goods can be gradually streamlined.

5. CONCLUSION

Based on the comparative study of major ports in China and Singapore, this paper mainly draws the following conclusions:

First, it can be seen from the research results that China's major ports still have many competitive advantages, such as. Extensive coverage advantages; Excellent conversational conditions; Superior port hardware conditions. Shanghai Port, in particular, is far more competitive than other ports. Especially when Shanghai Yangshan Port was built and put into use, the comprehensive competitiveness of Shanghai Port reached a new level.

Second, China's main ports have advantages in the quantity of resources, but there is a large amount of waste of resources. At the same time, value-added services are also relatively deficient, which need to be improved.

Third, in this article, I only made a comparative study of China's major ports and Singapore's major ports from the perspective of international trade, without taking into account many other factors, such as the port's supporting service capacity, infrastructure construction, loading and unloading, transshipment capacity, etc. In the future research, the follow-up research can be carried out more comprehensively and deeply.

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