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WORLD MARITIME UNIVERSITY

Shanghai, China

**HOW TO BREAK THE MONOPOLY IN PORT
INDUSTRY**

By

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Shanghai China

A research paper submitted to the World Maritime University in partial fulfillment of The
requirements for the award of the degree of

MASTER OF SCIENCE

RESEARCH PAPER

International Transport and Logistics 2018

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DECLARATION

I certify that all material in this research paper that is not my own work has been identified and that no material is included for which a degree has previously been conferred on me.

The contents of this research paper reflect my own personal views, and are not necessarily endorsed by the University.

(Signature): GAO MINJIANG

(Date): July 30, 2018

Supervised by
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FOREWORD

First of all, I would like to express my special appreciation. Thanks to my supervisor, Dr. Wang Xuefeng for encouraging my project and giving me instructional advice as well as recommendations, I have such a fulfilling paper. At the same time, I would also like to thank the teachers and all the classmates of international transportation and logistics program from world maritime university. We studied the project together and help each other, thus we had a wonderful and unforgettable time.

In addition, I would also like to thank my friends and classmates for their great support and help in this thesis writing, which has greatly inspired me. Last but not the least, the authors in the reference literature give me a good starting point for the research topic through their research articles.

Finally, I sincerely thank you for your hard work for assessing my paper and my family, friends and classmates for their encouragement and support.

ABSTRACT

Title of research paper: **How to break the monopoly in port industry?OW TO
BREAK THE MONOPOLY IN PORT INDUSTRY?**

Degree: **MSc_**

In recent years, Chinese ports have developed rapidly, and the throughput of many ports is among the highest in the world. In April 2017, the national development and reform commission (NDRC) and the ministry of communications has carried on the antitrust investigations to Shanghai port and Tianjin port, in September, it added Ningbo port and Qingdao port and other 37 port to the antitrust investigations, until November 15, the national development and reform commission held a press conference. The investigation found that several Chinese ports were suspected of monopolistic practices and used their advantages to gain illegitimate benefits. The problems of some port enterprises suspected of violating the anti-monopoly law mainly include restricting the use of tugboats, cargo handling and shipping services provided by local subsidiaries. For non-competitive local foreign trade container handling services, much higher than the competitive international transit container handling fees; Adding unreasonable trading conditions such as forced unpacking and packing, non-competition clauses, loyalty clauses, etc.

On June 11, 2018, the state administration for market regulation made an administrative penalty decision on the monopolistic agreements reached and implemented by four tug companies in Shenzhen. Since 2010, these four companies had made communication with other port tug company and made the tugboat price

consistent. All these behaviors are restricting the relevant market competition, affecting the business environment of fair competition, leading to high prices of related services, increasing the operating costs of the real economy, and disturbing the market order.

Thus it can be seen that Chinese ports do have monopoly. In a large number of literatures, most scholars have also mentioned that port monopoly harms the development of port economy, and port should establish an effective system and fair competition

This paper combines antitrust cases in foreign country with Chinese cases, analyses the advantage of foreign advanced system of port, and then on the basis of port group of definition, the 37 regional port can be divided into Bohai rim port group, the Yangtze river delta port group, Pearl river delta port group, southeast coastal port group, southwest port group, then gather the throughput of container between 2007 and 2017, using of market concentration, the CR_n Index, Entropy Index and Herfindahl-Hirschman Index analysis the architecture evolution of the port group ,then, I can get the following conclusion: the architecture from of Chinese container port group was from centralized to decentralized, competition between ports group will be more intense. The Chinese port group will develop into a three-pronged port group system with the Yangtze river delta port group, pearl river delta port group and Bohai rim port group

Then, by analyzing the functional distribution and resource integration of foreign port groups, it can bring valuable experience of construction and development to Chinese port groups. At the same time, this paper analyzes Chinese port monopoly

and finds that Chinese port operation mechanism is not perfect, Chinese antimonopoly law is not perfect and the problem of port operators concentration. Finally, it puts forward some suggestions on how to break the port monopoly.

Key words: Port Monopoly; HHI; Port group; Antitrust law

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LIST OF ABBREVIATION

TEU	Twenty-feet Equivalent Unit
HHI	Herfindahl-Hirschman Index
CR_n	Concentration Ratio
EI	Entropy Index

1. Introduction

1.1 Background

On November 15, 2017, the National Development and Reform Commission (NDRC) said in a news release on the basis of Shanghai port, Tianjin port claimed monopoly investigation, the national development and reform commission jointly with the ministry of transport. China port association jointly held a meeting on September 22, which is asking the country's coastal 39 port to control the antitrust investigation and find problems, conduct self-check and rectification. All of these require port enterprises to realize the importance of fair competition, which is to promote port authors efficiency in production and management, better service entity economic development. In the survey it is found that part of the port enterprise is suspected of violation of the anti-monopoly law, which mainly includes forcing the shipping company to use the tug, cargo, shipping and other services provided by the designated port subsidiaries. For the uncompetitive local foreign trade container handling business, the charge is far higher than that of the competitive international transit container. Unreasonable trading conditions such as forced unpacking, non-compete clause and loyalty clause are attached to the transaction object. These behaviors exclude and restrict the related market competition, and affect the business environment of fair competition, leading to high prices of related services and increasing the operating costs of the real economy. The port monopoly is to point to the port to take advantage of its own advantageous position to obtain illegitimate benefit.

We know that although the monopoly has certain advantages. For instance, the quantity of goods can be allocated reasonably. Moreover, the monopolist can control

the port loading and unloading. It will not cause duplicative construction. However, the disadvantages brought by the port monopoly cannot be ignored. For example, monopolists control the market price and form a strong position and seller's market. Lack of competition in the market of port enterprises is no longer under pressure to promote efficiency, in turn, affecting the overall efficiency of regional logistics chain issues, which leads to the poor quality of service and customer satisfaction, etc.

At present, with the acceleration of the global economic integration process, the port is an important facility for international trade, and its role and status are becoming increasingly prominent. Under the support of our government, many ports in China became bigger in a few short years that also formed the link Bohai sea, Yangtze river delta, the pearl river delta and coastal areas of southeast coast and the southwest five port groups.

1.2 Literature review

First, study on the competition of port cooperation by scholars. Shi Xin (2001) in port cooperation game analysis from the perspective of game theory in the study of port cooperation conditions, points out that to bring economic benefits to the ports of port cooperation is an important business strategy; Zhuang Peijun (2005) in container port competition strategic research analyzed and thought that the cause of container port competition is intense, which can be used for competition and cooperation competition strategy of cooperation, in order to improve the competitiveness and market power; Li Nan (2006) in the port strategic trend of synergetic competition identified the relationship between monopoly and competition and he held the view that regional port from confrontational competition to cooperative competition can improve the comprehensive competitiveness of regional port group. Competition and cooperation will make the port competitive advantage. Shen Chen-guang (2011) in

the operation mode reform of monopoly industries in China - in the port industry, analyzed the operation mode of the port industry and expounded the operation mode of the natural monopoly industry. The operation mode of the port enterprises to port the product quantity, quality and service has a huge impact. For instance, port should meet their actual situation to choose the appropriate operating model; Notteboom, et al. (2001) pointed out in Container Shipping and Ports that cooperation between ports can enhance the competitiveness of ports in the region, thus enhancing the market share of cooperative ports.

Second, it can be seen from some domestic and foreign port case analysis, such as He Jianyun, et al. (1999) in the western European port cooperation experience and enlightenment, analyzing the Benelux port system and European seaport organization of operation. He summarized the experiences of Western Europe port cooperation and put forward the enlightenment of Yangtze river delta port cooperation; Chen Miao, et al. (2007) in the foreign port group of competitive cooperation enlightenment to China, analyzed the American New York and New Jersey port group, European ports group, Japan's Tokyo bay port group cooperation experience, as Chinese port group cooperation proposed. Li Yan , et al. (2012) in the Bohai rim port cooperation mechanism research, in the perspective of cooperative game theory, analysis of the Bohai rim port cooperation, from the angle of cooperative game theory proposed that the regional port cooperation mechanism suggestion; Wang Yinyin (2014) in the Yangtze river delta port group competition development strategy research analyzed of current situation of the development of Yangtze river delta port group, put forward the scientific orientation, resource sharing and collaborative governance promote port group of cooperation competition countermeasures.

Third, it indicates some relevant legal research on port monopoly. For example, Liu Bin (2011) in the port integration in the concentration of anti-monopoly law analysis points out that the port concentration is a double-edged sword. Excessive concentration degree will reduce the port operation market competition. All of those eliminate or restrict competition, weakening the port economic vitality. At present, the market mechanism of port operation in China is not perfect, and the port operator should be concentrated in the scope of anti-monopoly law to maintain the sustainable and healthy development of the port operation market. By analyzing the European ports monopoly specific case and the TREATYEU-EC, Zou Yingying, et al. (2014) in treaty for the prohibition of abuse of dominant market position in the EU port field case study gave the exclusive behavior guide on the market segmentation, dominance, identifying rules, abuse and typical form, in which anticompetitive effect factors are analyzed, and combined with characteristics of Chinese ports. This paper gives perfect elements identified.

Forth, it has some theoretical model and theoretical basis of port cooperative competition. To illustrate, Li Nan, et al. (2007) in the port area of monopoly and competition: with circle model, using the circular port of monopoly and competition model analysis, put forward the privatization reform and rebuild regulation scale such as competition, cooperative competition. Luo Fang, et al. (2010), in Chinese coastal ports group of the empirical analysis based on gravity model the application of gravity model analysis of coastal ports in China, points out that the attraction of core port for other ports helps the localization development of the port; Yu Jinkai, et al. (2015) in the port competition mechanism based on Stackelberg Leadership Model analysis for Bohai rima port competition, using the Stackelberg Leadership Model to analyze the structure of port competition, and the use of Bohai rim port

competition carries on the empirical analysis, puts forward related Suggestions on port group of ports competition in; Zhang Qiang, et al. (2017) in the Chinese port enterprises' competition between the ports of cognitive research - based on 21 listed port enterprise discourse analysis of the annual report " for each port listed companies annual reports in written discourse analysis to explore the state of the port to port competitive cognitive framework.

2. Competition and monopoly of port industry in China.

Chinese port industry is developing rapidly, but the problem of port monopoly cannot be ignored. Therefore, it is necessary to analyze the current development trend of Chinese ports, different behaviors of port monopoly and studies on port monopoly by different scholars.

2.1 Trend analysis

On January 26, 2018, the ministry of transport announced the express data of cargo and passenger throughput of ports in 2017. According to the data, the cargo throughput of Chinese larger ports is expected to reach 12.644 billion tons in 2017, an increase of 6.4% over the previous year. Liu Chanjian, et al. (2018) mentioned that among them, the growth of coastal ports and inland river ports was basically the same as that of the previous year, at 6.4% and 6.3% respectively, and the completed cargo throughputs were 8.625 billion tons and 4.019 billion tons respectively. The throughput of foreign trade goods reached 4.002 billion tons, up 5.7% year on year. Container throughput increased 8.3% year on year to 227m TEU and was significantly faster than cargo throughput by 6.4%. Compared with the corresponding growth rate in 2016, the above data are significantly accelerated.

In terms of container throughput rankings, the ministry of transport has not changed its ranking from last year and the growth rate is positive for all of the 12 ports with more than 12 sizes reported by the ministry of transport. Among them, Shanghai port exceeded 40 million TEU for the first time, reaching 40.18 million TEU, an increase of 7.7% over the previous year, ranking the first in the world. Shenzhen port completed 25.25 million TEU in 2017, with a growth of only 5.3%, ranking second; Ningbo - Zhoushan port by just 610000 TEU of a slight difference, in Shenzhen, it is worth noting that the Ningbo - Zhoushan port 2017 annual growth rate is as high as 14.3%, far higher than the 5.3% growth in Shenzhen, or back to Shenzhen in 2018, becoming Chinese second largest container port. The next four to 12 places were Guangzhou port, Qingdao port, Tianjin port, Xiamen port, Dalian port, Yingkou port, Suzhou port, Lianyungang port and Foshan port.

In recent years, the investment scale of the port industry has been negative, but the new production capacity remains high. The overcapacity is relatively prominent, and the trend of large-scale berths in coastal ports is more obvious.

2.2 The monopolistic behavior of port enterprise.

Because of the geographical location is different, different ports have different hinterlands, the competition between each other is not strong. Every port has a strong market power within a certain geographical area. In other words, the goods in this area are transported through the local port, which is the most economically reasonable, leading to the high dependence of shipping companies and shippers on them. Therefore, there are three general problems in ports

2.2.1 Joint restrictions on competition by port enterprises.

Horizontal cooperation among port enterprises restricted competition, including fixed prices and market segmentation. Fixed price refers to the port in order to avoid price competition between enterprises. Through the price agreement, it jointly determines terminal services (services that can set their own rates) can determine the charge standard of charging standards. Market segmentation refers to two or more port enterprises. In order to avoid competition, it reaches an agreement to delimit each other's port service areas and service shipping enterprises or shippers.

2.2.2 Port enterprises abusing their economic advantage to sell

The abuse of economic advantages by port enterprises in carrying out bundle sales means that when a port enterprise sells one service, it violates the wishes of buyers such as shipping enterprises and requires them to purchase another service at the same time. This monopoly behavior impact on some small shipping enterprises of China is bigger. Small shipping enterprises do not have enough goods supply and lack in bargaining power with terminal enterprise, which is the larger terminal enterprise supplicant, finally under the powerful shipping enterprise's competition. The small enterprise will be out of the market.

2.2.3 The price discrimination of the service provided by the port enterprise

So-called price discrimination includes two cases: one is the port enterprise choice for its competitors in specific areas or for specific shipping companies, where sales of its cargo, warehousing and other services; the other one is the port enterprises which have no legitimate reason to adopt different price standards for several shipping enterprises and other buyers with the same trading conditions.

2.3 Analysis and attitude of scholars at home and abroad on port monopoly

Li Nan, et al. (2007) used the circular model to analyze and understand the regional monopoly and competition characteristics of the port so that it can provide the basic theoretical basis for the public policy making to realize the competition of the port industry regulation model. Port has a certain monopoly within a geographical area, which is more helpful to obtain the economies of scale and make use of scarce resources, but market forces accumulated will lead to loss of welfare and efficiency. While the direct competition between the adjacent ports can promote higher efficiency and produce competition vitality, excessive dispersion will interfere with the economies of scale, and may also cause the waste of resources. The competition between ports not only requires enough port number and the intensity of competition, it but also cannot damage scale effect. It should avoid repeated construction and excessive competition caused by intense port layout.

Cui Zhongliang, et al.(2016) mentioned that port competition and cooperation is attracting wide attention of the industry and research. Port groups united into one, which can maximize its optimal benefits. However, it's easy to form a regional monopoly, endangering the overall efficiency of the logistics chain, so the port group needs to shoulder its social responsibility, abandon the monopoly profits, aim for fair competition. Besides, it should combine the development of port with the supply chain of the city, taking the overall situation, balancing excessive competition of the ports and monopoly, so as to enhance the quality and promote competitiveness of logistics chain to obtain the long-term benefits.

Li Nan. (2008) said Port industry regulation reform is a comprehensive process of connotation widely, avoiding goal conflict between the central government and local government, governing excessive competition between the ports of the governance or regional monopoly, balancing in different interests of all parties, and the risk allocation, preventing the abuse of monopoly power and improper anti-competitive behavior, etc., It's ultimate aim is to build coordinated and effective market system in each link of the port industry, to enhance the competitiveness of the port. Port privatization is a complex activity, linking privatization to regulation. In addition to the needs of regulation after privatization, the improvement of the regulatory framework also helps to promote the process of port privatization. Privatization has changed the property rights of port enterprises. The government can only intervene in the activities of enterprises through the law. At the same time, the privatization also calls for the implementation of the corresponding system of rules and regulations, in order to form and maintain the fair competition between different market subjects and prevent the occurrence of private monopolies, and so on and so forth, so the first task to push forward the reform of port privatization is the regulatory framework. Privatization makes market-oriented regulation policies easier to implement, which explains that once property relations are separated, regulatory bodies can implement more just regulation policies.

Liu Liang, et al. (2007) mentioned that with more and more capital competing for the Chinese port market, some foreign interest groups have completed the strategic layout of Chinese important ports and presented a monopoly trend. And principle of economics shows that monopoly is not conducive to the development of the industry, especially the monopoly of foreign holdings port enterprises, and more damaging. In macro level, it will affect national economic security, and in micro level will affect

the interests of the shipping enterprises of China, the port enterprise and the owner. Therefore, the relevant departments of the state should take active and effective regulation measures to encourage the development of Chinese port enterprises' economies of scale while combating the monopoly of foreign capital.

Basso, et al. (2007;2013) mentioned that the study of cooperation between two oligarchs means monopoly, but in practice, monopoly cooperation between ports in the region is not allowed, and cooperation between ports is often to enhance their competitiveness through alliance to compete with other ports.

Dong-Wook Song (2004) mentioned that synergistic competition is a moderate competition mode between cooperation and confrontation, which has become the critical choice for port operators to gain competitive advantages. Synergistic competition can avoid destructive competition between ports and strengthen the power of all parties involved through strategic partnership. Ports in the same region should expand the overall coverage space on the basis of safeguarding common interests and following the positive sum game.

From the articles of most scholars we can see that port monopoly will restrict port economic development, affect the interests of the port of shipping enterprises and the interests of the owner. Hence, we should break the port monopoly and establish an effective port system, carrying out fair competition, devoting to long-term development of the port.

3. The history of anti-monopoly of domestic ports

As is known to all, the waiting time and loading speed of ships in the port are one of

the important factors for the profitability of ships. For ports unilaterally command the berthing power of ships, when ships from the wholly-owned shipping company and ships of other shipping company successively or simultaneously arrived at the port of anchorage, the port will give priority to ships of proprietary shipping company to berth load and unload cargo, which will bring disastrous time lost to another ship. Because the existing law of China does not stipulate any specific provisions for ship berthing order, over the years, there is no regulation of berthing, loading and unloading of the ship order. The port operator unilaterally holds the management, which is unfair for the ship. Next, this paper will analyze the case of Chinese port monopoly

3.1 Nanjing port tally dispute

Nanjing Zhonglian obtained the business license on March 6, 2007, and obtained the port operation license issued by the ministry of communications in the same month, indicating that Nanjing Zhonglian could enter the port to conduct the tally business. But in March 30, 2006, Nanjing port group company called regional shipping agency and freight forwarding company, head of the meeting, at the meeting for Nanjing. Zhonglian proposes a "three principles". First, do not arrange the ship to dock in Nanjing Zhonglian; second, do not carry out tally work for Nanjing Zhonglian; third, Nanjing shipping agent and freight forwarding company are not allowed to operate in Nanjing Zhonglian. Nanjing Zhonglian failing to complete a tally business in the port after its opening.

1. Entrusted by Hanxiang logistics, the 25 containers sent from Shanghai to Longtan port are extracted from Nanjing Zhonglian port, and the Longtan port wharf side said that the group has clearly stipulated that Nanjing Zhonglian should be banned. In order to protect the interests of customers, the company

was forced to withdraw the order at 4 PM.

2. Commissioned by the receiving party in Belgium, Nanjing zhonglian anchor in Longtan port wharf tally on a foreign cargo ship for normal business. By 9 am on the 20th, when 40% of the business was completed, the dock suddenly stopped the crane and offered to the captain to leave the ship unconditionally as the only condition for the resumption of work.. At 12:45, the personnel of the branch were forced off the ship, and then they were removed from the port by the dock guard and dispatch.

The port maintains a monopoly in order to maintain its tally company. In the aftermath of the incident, Nanjing zhonglian has made several representations with the port, but none of them have results. And it also involves complex equity allocation problem, separating government functions from enterprise management reform. On the other hand, the government departments can't solve the subordinate company in the form of administrative commands like these negotiations of business issues, so the department of transportation, port authority and other departments can coordinate to this matter.

3.2 Thirteen shipowners' associations set up charging committees

On March 29, 2016, China shipowners association led the shipowner's association in Liaoning province and Qingdao shipowners' association, etc. twelve regional shipowners' association, to establish China port charges coordinated action committee. The port charges coordinated action aims to ensure the legal rights and interests of the shipowners. The meeting called for the port enterprise, the owner and the industry organization to set up communication and coordination mechanism, and strengthen supervision of port charge in advance, matter and afterwards.

In this speech, the presidents of various shipowners' associations mentioned different compulsory charging measures of various ports. Guangdong area ships need to sign a decontamination agreement, but price is a problem in question. Too big tugboats are used in Zhejiang port. At the same time, the port side forcibly stands as the agent for the goods and forcibly distributes the profits, leading to the bankruptcy of some enterprises. Qingdao port is fully involved in the shipping agency, freight forwarder and storage yard area. The shipping company must accept the services of port agent and storage yard, which has damaged the market and is not conducive to the healthy development of the port.

In the future, the China port charge coordination action committee will collect more feedbacks from shipowners on port charges and form internal documents for relevant departments to refer to. At the same time, through the port charge coordination action, it protects the legitimate rights and interests of shipowners and promotes the sustainable and healthy development of Chinese shipping industry. It pushes all members of the unit in step, and firmly opposes all violation of the state council "several opinions to promote the development of maritime industry health and the ministry of transport" implementation opinion "behavior, strengthening the social supervision, restricting port operation of monopoly and monopoly phenomenon, standardizing the port charges, cracking on illegal charges, to alleviate the current part of the abuse of a dominant position to exercise monopoly illegal phenomenon and the negative effect on the shipping market expectations and bad.

The meeting adopted the articles of association of China port charge coordination action committee, forming the resolution and issuing the initiative. China port charges coordinated action committee which will be under the guidance of the

ministry of transport and other departments, trade organizations, the media, the enterprise and the joint efforts of the market supervision system established between shipowners with port channels of communication, strengthening the regulation of charge in advance, matter and afterwards, to strengthen the social supervision and restriction port operations in monopoly and monopoly phenomenon, standardizing the port charges, cracking on illegal charges, alleviating the current port abusing their own advantages and the negative effects on shipping market and poor expectations to maintain the market order of fair competition, an effective industry rights and self-discipline. Through the port charge coordination action, it protects the legitimate rights and interests of shipowners and promotes the sustainable and healthy development of Chinese shipping industry.

3.3 Price monopoly case of Shenzhen tugboat companies

On June 11, 2018, the State Administration for Market Regulation of China made an administrative penalty decision on the monopolistic agreements reached and implemented by four tug companies in Shenzhen. Ordered the four companies stop the illegal practice, and respectively four companies related fines of 4% of the sales from the previous year, specific fines are: Shenzhen Yantian tug co., LTD., was fined 5753549 yuan. Shenzhen Lianda tugboat co., LTD was fined 396,7237 yuan. Shenzhen Chiwan tugboat co., LTD was fined 244,7201 yuan. Shenzhen Dachanwan tug co., LTD was fined 689,651 yuan, the total is 128,576 yuan.

The administrative punishment said four offending company since 2010, held regularly or irregularly a meeting with other towing company in Shenzhen port , communicating about the tugboat charges and the negotiation strategies. Because the punished four companies and other Shenzhen port tug are explicitly stipulated in the

company's business license the permission management area, which belongs to different ports. But the eastern port of Yantian, the western port of Shekou, Chiwan port and Dachanwan port are close to each other. There is more intense market competition between different ports. The cost of tugboats is included in the total cost incurred by the shipping company at the port as part of the shipping company's expenses at the port. Therefore, the competition between different port areas will be transmitted to their respective subsidiary tugboat companies, so that the tugboat companies have a competitive relationship.

The State Administration for Market Regulation thought this behavior limited the competition between the tug companies. This price collusion behavior with the agreement price instead of market price can let the companies get more profit. It destroys the market competition and evades the constraint of competition on pricing behavior. The result is a direct disruption of the market competition order.

At present, the tugboat fee is guided by the government, that is the upper limit price. Each port can be on the basis of the upper limit price and the customer independent pricing. In an anti-monopoly investigation conducted by the national development and reform commission in 2017, it was found that some ports signed contracts with shipping companies that set the standard terms for services provided by port subsidiaries. In some ports, there is no option for the tug company in the ship information declaration system, which is essentially a monopoly problem caused by the port's failure to set up the window of self-selecting tug company for customers.

Now, due to the imperfect anti-monopoly law regulations in China, related problems can only be addressed by coordination or penalty. Therefore, while exploring

Chinese port of antitrust cases, it is necessary for us to study the foreign ports monopoly case, the analysis on the foreign advanced port system and law, and how to break the port monopoly.

4. Case study on foreign port monopoly

The regulation of the EU against abuses in the port field is mainly aimed at the application of market entry and trading conditions in the port. Through these cases, the application of the elements of the EU's prohibition against abusing market dominance in the port sector has been clarified and improved.

4.1 Excessive price--The Helsingborg port case

According to the quantitative relation between output and monopoly price, Posner (2003) revealed the monopoly enterprise's production should be less than that of competition, and the price is possibly greater than the competition, thereby gaining extra monopoly profits. The monopoly price is generated in this process. The European Union's competition law says that a monopoly price means that there is no reasonable relationship between the price and the product or service it provides. The court set up two analytical steps to determine the high price of monopoly. The other is to determine whether the price of a product or service is unfair compared to the price of a competitive product or service, or whether the price of the product or service is unfair in itself.

The analysis of monopoly price has been applied to the helsingborg case. In this case, the port of helsingborg, one of the largest ports in Sweden, has a good geographical position. In 2004, two ferry operators, Scandlines Sverige AB and Sundbusserne,

filled a complaint to the commission over the unjustified cost of the port of Helsingborg. It said the port of Helsingborg charged too much for port services.

The dispute in this case centers on whether the port charges involved are unreasonable. In the case, the commission reaffirmed its consistent standard that abusive prices should be prices unrelated to economic value. In determining whether prices are too high, the commission gives the order in which the three methods apply. The committee acknowledges that the best comparison should be with alternatives provided by competitors in the same market. If such an alternative cannot be found, the same product sold by the same person in another market can be compared. If such information is not available, it can be compared with the prices of similar products provided by other companies in comparable markets. When using the third method of comparison, it should be noted that (1) the provided products or services should be comparable; (2) the charging system is allowed for meaningful comparison.

In this case, because of the difference between activities, assets, investment scale and income level of each port, it is impossible to draw a conclusion through comparison. The commission also stressed that the price of a product should not only take into account cost-related factors, but also demand. Therefore, even if the profit of a product is high, it is not necessary to conclude that the price is unfair. Committee considered all relevant economic factors, including the sunk costs, port terminal of intangible value. It was concluded that there was not sufficient evidence to prove that there was no reasonable link between the port charges and the economic value of the services. Therefore, it is determined that this port does not constitute monopoly and high price.

It can be seen from the Helsingborg port case, when the EU determine whether port price is reasonable, they will respect different consumers and horizontal comparison between the ports of the different prices. On the other hand, by using case law, the price composition and the rationality of price itself are further evaluated. At the same time, when evaluating the value, the sunk cost of the port side and the intangible value of the port are taken into full account, which is also a worthy method for reference.

4.2 Discriminatory price---MERCI case in Italy

Wang Xiaoye (2001) mentioned that in theory, discriminatory ACTS belong to an independent category of abuse. Discrimination refers to the different prices the buyer pays when the seller buys the same grade, the same quality of goods, or the prices seller pays when buyer provides the same level and the same quality of the goods, which directly affects the other person's ability to compete.

MERCI case comes from the Italian law provisions for terminal company monopoly franchise. That is to say, all the Italian port terminal operation must be conducted by the Italian port workers. And hired company should carry out it, otherwise it will be fined. It is also a monopoly to organize dock operations on behalf of a third party in Italian ports: the enterprises that organize dock operations can only let the wharf operation agents with monopoly rights operate. SINGERURGICA, the plaintiff in the case, requested discharge under Italian law from MERCI, which had the right to organize dock operations on behalf of a third party. But a strike by local dockers delayed unloading. The main point of contention in MERCI's case is whether MERCI abused its dominant position and traded with the other party who needed the service at an unfair price or other terms. Through investigation and evidence collection, the

European court of justice concluded that: first, the costs of providing dock services at other European ports were much lower than those charged by COMPAGNIA to MERCI and MERCI to the plaintiff in the case. The scope of the fees in this case was set by the port authority, so it was difficult to determine the criteria for their calculations. But it also showed that the price was not related to the actual cost of providing services. Therefore, there is an unfair abuse of transaction price. Second, MERCI company takes some port users to deduct surcharge preferential measures. But to improve the other user fees, the same business should be applicable to different transaction objects and different trading conditions, making the deal at a competitive disadvantage. It's also abuse. The MERCI decision is a classic case in which the court applies article 82 (a) and (c) of the treaty in the port case.

4.3 Non-price abuse—Holyhead case in Britain

Vickers (2005) said the non-price abuse mainly includes the refusal to deal, monopolizing the trading behavior, the selling behavior, the loyalty rebate, etc.

In the early 1990s, the commission's development of the "key infrastructure principle" was originated from two cases. One is B&I Line Plc. V. Sealink Harbors Ltd.; the other is Sea Containers v. Stena Sealink. Both cases are about Holyhead port.

1992 B&I Line Plc. V. Sealink Harbors, Sealink company controls the Holyhead port. The port supports ferry service between England and Ireland, Sealink and B&I companies operating in the port of the business, Sealink company in order to eliminate B&I business competition, modifying the use time of the port. So B&I companies filed a lawsuit. In the case, the European commission defined "critical

facilities" for the first time, and held that the port of Holyhead was a critical facility for trial and adjudication. Commission said if the dominant enterprise with key facilities refused to let their competitors use or compare to its own, it will provide the adverse conditions and agree to the competition using the facilities, so as to make its competitors at a competitive disadvantage, violating the article 82 of the treaty. In the 1994 Sea Containers v. Stena Sealink case, the committee extended the application of this principle to new market entrants seeking access to relevant markets and access to key facilities. Sea Containers, which also wants to operate ferries at the port of Holyhead, was rejected and filed a complaint with the European commission. The reason of suing is that Stena has Sealink company abuse Holyhead port owners and operators' dominant market position, which violates article 82 of the treaty. It does not allow the Sea Containers company to use key facilities or infrastructure based on reasonable reason and rely on it to protect ferry operator's commercial interests, not fully distinguishing the relationship between the role of port operator and the ferry operator. The commission believes that Sea Containers had to add the length of the strengthening port, or create a new port of their own in order to manage its ferry business in this line of the road. The two practices on physical or economic is not realistic. So Sealink has a dominant position in the market for port equipment for ferry or passenger ferry services within its capabilities as a port manager. To enable Sea Containers companies to use the Holyhead port reasonably and non-discriminatory, the European commission has taken interim measures against Sealink. The case ensures that any final decision by the European commission is as valid as any case in which the plaintiff is a new entrant and the plaintiff is an existing competitor.

Both cases involve the infrastructure-port. The owner of the facilities utilizes the

upstream market distribution status, to interact with the business in the downstream market competition opponent Settings, or explicitly refused to supply the facilities used for the competition. It also suggests that the key principle of facilities in the EU for the main are: leading and control of critical infrastructure companies not only exists in the upstream market, it also exists in the downstream market, and tries to avoid other competitors using the facility, in order to realize the monopoly on the downstream market.

EU applies to these basic systems prohibiting abuse of dominant market position both in article 82 of the ec treaty, in 2008 the exclusive behavior guide, and the corresponding program specification, which includes a series of typical cases in the field of port again. This is of great significance for improving the rules of port competition in China. China should emphasize the effectiveness analysis method and encourage competition in shipping rules, but it should prevent the anti-competition effect caused by the abuse of market dominance. Besides, our country should perfect the standards of relevant market, dominance, abuse, and other elements. Meanwhile it need to standardize legal language, apply general rules banning the abuse of market position system to the port competition, and fully embody the characteristics of port area at the same time.

5. Chinese port analysis

After analyzing Chinese port monopoly case and foreign advanced system, this paper will analyze Chinese port. This paper will use the Herfindahl-Hirschman Index, based on the theory of port system and competition, analyzing the competition situation of five coastal port group from 2007 to 2017, for the port group construction and planning, providing certain scientific basis for how to break port

monopoly.

5.1 The data collection

In 2006 “the national coastal port layout planning” divided the coastal ports above designated into the pearl river delta port group, Yangtze river delta port group, Bohai rim port group, southwest port group and southeast port group. How to rationally plan and utilize port resources and promote urban and economic development is a problem that needs to be solved at present.

According to "national coastal port planning" documents of the ministry of transportation, based on the concept of port group, this paper break the limitation of administrative division, dividing costal ports into Bohai rim port group, Yangtze river delta port group, southeast port group, pearl river delta port group and southwest port group. Bohai rim port group included twelve ports. Yangtze river delta port group contains six ports. Southeast port group contains five ports. The pearl river delta port group consists of nine ports. Southwest of port group contains five ports. There is a total of 37 coastal container ports (figure 1). Zhanjiang port will be classified as the southwest port group.

This paper mainly collected the throughput of 37 coastal container ports from 2007 to 2017 as the basic data from China port yearbook (2007-2017) and China port journal for research and analysis (table 1~5).



Figure 1 The distribution of coastal port group in China

Table 1 The throughput of Yangtze river delta port group from 2007 to 2017

	10000TEU					
Yangtze river delta port	Shanghai port	Ningbo-zhoushan	Lianyungang port	Suzhou port	Taicang port	Total
2007	2158.25	935.00	200.06	190.00	100.00	3364.00
2008	2800.60	1122.60	300.05	257.00	145.04	4326.00
2009	2500.00	1042.30	303.18	239.80	150.00	4489.11
2010	2906.90	1300.35	387.00	364.41	221.15	5445.30
2011	3000.00	1451.00	485.00	468.50	300.00	6000.00
2012	3252.90	1500.00	455.36	525.15	400.00	6581.00
2013	3361.70	1677.40	548.80	532.00	326.70	6621.00
2014	3528.53	1870.00	500.50	457.08	300.00	6989.86
2015	3653.70	2062.90	500.00	510.00	370.60	7326.78
2016	3713.30	2157.00	470.00	469.00	408.10	7808.00
2017	4030.00	2579.00	472.00	590.00	451.00	8549.76

Table 2 The throughput of peral river delta port group from 2007 to 2017

	10000TEU					
pearl river delta port group	Guangzhou port	Shenzhen port	Zhuhai port	Foshan port	Humen port	Total
2007	926.00	2109.91	61.30	236.00	0.00	3510.00
2008	1100.00	2142.00	65.50	250.00	0.00	3751.00
2009	1119.99	1825.01	56.39	292.20	2.50	3421.00
2010	1255.00	2250.97	70.27	305.95	5.49	4005.00
2011	1422.96	2256.98	81.49	285.00	15.97	4251.00
2012	1199.07	2172.80	81.28	266.27	100.00	4003.00
2013	1550.00	2327.80	95.00	270.00	151.34	4418.00
2014	1661.00	2403.70	109.40	282.96	229.36	4823.00
2015	1700.00	2420.40	121.00	299.60	336.30	5123.00
2016	1886.00	2398.00	165.36	310.92	364.00	5542.00
2017	2010.00	2525.00	227.04	391.00	450.00	5962.00

Table 3 The throughput of Bohai rim port group from 2007 to 2017

	10000TEU					
Bohai rim port group	Tianjin port	Qingdao port	Dalian port	Yingkou port	Yantai port	Total
2007	710.00	946.20	382.30	188.87	125.00	2598.00
2008	850.00	1002.00	450.27	203.00	153.00	2956.00
2009	870.00	1026.00	457.65	253.73	140.10	2954.00
2010	1000.00	1201.20	524.20	333.80	154.12	3621.00
2011	1158.80	1302.00	640.00	415.00	171.00	3966.00
2012	1129.47	1330.87	731.51	485.10	185.00	3906.00
2013	1300.00	1555.00	1000.00	529.62	215.00	4734.00
2014	1400.00	1658.00	1001.00	566.47	236.12	5169.00
2015	1450.00	1743.50	930.00	592.25	245.20	5235.00
2016	1455.00	1800.00	944.10	601.00	260.00	5439.00
2017	1504.00	1830.00	970.00	627.00	270.20	5632.00

Table 4 The throughput of southwest port group from 2007 to 2017

	10000TEU					
Southwest port group	Shenjiang port	Haikou port	Fangcheng port	The North Sea port	Qinzhou port	Total
2007	18.20	32.00	18.00	4.30	4.80	80.00
2008	19.00	45.00	21.00	4.93	6.11	102.00
2009	20.50	50.00	22.00	5.20	10.10	121.00
2010	32.02	60.00	25.10	6.18	25.10	159.00
2011	31.67	73.30	26.50	7.10	40.22	195.00
2012	41.20	96.00	27.00	8.02	47.40	265.00
2013	45.16	100.00	30.98	9.30	60.10	288.00
2014	57.84	136.71	32.20	10.47	70.20	362.00
2015	72.15	138.00	36.86	15.00	94.20	395.00
2016	85.00	140.00	26.63	15.48	137.40	460.00
2017	90.00	160.00	30.87	20.00	177.00	534.00

Table 5 The throughput of southeast port group from 2007 to 2017

	10000TEU					
Southeast port group	Fuzhou port	Quanzhou port	Xamen port	Total		
2007	100.00	102.00	462.70	856.00		
2008	117.65	120.00	503.46	750.00		
2009	122.27	125.10	468.00	732.00		
2010	147.05	137.00	524.00	820.00		
2011	168.00	156.86	646.07	980.00		
2012	182.50	169.70	649.97	1025.00		
2013	197.67	170.00	800.79	1203.00		
2014	223.94	188.50	857.00	1302.00		
2015	243.00	201.51	918.00	1363.70		
2016	260.00	209.15	918.28	1399.00		
2017	300.00	221.94	1040.00	1602.00		

5.2 Methods select

Market concentration is a measurement of the concentration degree of the market structure of the whole industry. It is used to measure the difference between the number of enterprises and the relative size. At present, the measurement methods of market concentration mainly include industry concentration (CR_n), Lorentz curve, Ginny coefficient, entropy index, Hirschman-Heffendale Index (HHI). Because the Lorenz curve can quantitatively measure the concentration, the Gini coefficient can only measure its maximum gap between the industry concentration (CR_n) and can only reflect the size of the top n enterprise market the cumulative percentage of the total market. These measurement methods all have certain defect, and HHI is the most ideal method to fully reflect the market concentration. Therefore, this paper will choose three methods: CR_n, Entropy Index and HHI, using the throughput of container ports as the market share to calculate the spatial structure changes of Chinese container ports in 2007-2017.

5.2.1 Method---CRn

CRn usually refers to the shares cumulative number of relevant values (such as output value, output, sales volume, number of employees, etc.) of the top n enterprises reflected in the industry scale represents of the entire market or industry. The advantage of using market concentration to measure market structure is that it is easy to calculate. However, the disadvantage is that such indicators cannot fully reflect the discrepancies in the size distribution of enterprises. For example, in 4 enterprises or 8 enterprises, they may be made up of those with similar sizes. Possibly, they may be made up of one extremely large enterprise and a few other enterprises with relatively small size. In addition, the index cannot reflect the product differences of enterprises. The CR4 data of southeast port group is approximate to CR3, because the container throughput of other ports is small to be ignored except the three major ports.

The formula: $CR_n = \sum_{i=1}^n S_i$

- Si: market share of the ith enterprise
- n: the number of enterprises in the industry

As shown in (table 6), the CRn Index of market structure classification by American economist Bain.

Table 6 The CRn Index of market structure classification by American economist Bain

Market Structure \ Concentration ratio	CR4(%)
Oligopoly type1	$CR4 \geq 85$
Oligopoly type2	$75 \leq CR4 < 85$
Oligopoly type3	$50 \leq CR4 < 75$
Oligopoly type4	$35 \leq CR4 < 50$
Oligopoly type5	$30 \leq CR4 < 35$
Competition type	$CR4 < 30$

The calculation results of CR4 for each port group are shown in table 7.

Table 7 The CRn values of the Chinese container port group and the five container port group

CR4	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
National port group	0.99	0.98	0.95	0.95	0.98	0.99	0.97	0.96	0.97	0.97	0.98
Yangtze river delta port group	0.93	0.93	0.91	0.91	0.90	0.87	0.92	0.91	0.92	0.87	0.90
Pearl river delta port group	0.95	0.95	0.96	0.97	0.95	0.93	0.97	0.95	0.93	0.89	0.90
Bohai rim port group	0.86	0.85	0.88	0.84	0.89	0.94	0.93	0.89	0.90	0.88	0.88
Southwest port group	0.91	0.89	0.85	0.89	0.88	0.80	0.82	0.82	0.86	0.85	0.86
Southeast port group	0.78	0.99	0.98	0.99	0.99	0.98	0.97	0.97	0.99	0.99	0.97

5.2.2 Method---HHI

Herfindahl-Hirschman Index is the result of Bain's - business - Performance (Structure - Conduct - Performance) theory, namely the market Structure decides enterprise in the market behavior, enterprise behavior and decision market operation in all aspects of economic Performance. The index can comprehensively reflect the number and relative size of the enterprise.

The formula:
$$HHI = \sum_{i=1}^N (X_i / X)^2 = \sum_{i=1}^N S_i^2$$

- X -- the total size of the market
- Xi -- the scale of enterprise I
- Si = Xi/X -- market share of the ith enterprise
- n -- the number of enterprises in the industry

When $1/n \leq HHI \leq 1$, When n is infinity, HHI goes to zero. When HHI tends to 1, the port system is highly concentrated and some ports have significant competitive advantages. When HHI goes to $1/n$, the port is scattered and the competition between the ports is encouraged.

The HHI indicators set by U.S. department of justice are as follows

Table 8 The HHI indicators issued by U.S. department of justice

Market Structure	Oligopoly type				Competition type	
	Highly oligopoly type1	Highly oligopoly type2	Low oligopoly type1	Low oligopoly type2	Competition type1	Competition type2
HHI	$HHI \geq 3000$	$3000 > HHI \geq 1800$	$1800 > HHI \geq 1400$	$1400 \geq HHI \geq 1000$	$1000 > HHI \geq 500$	$500 > HHI$

The calculation results of the HHI value of each port group are shown in table 9.

Table 9 The HHI values of the Chinese container port group and the five container port group

HHI	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
National port group	0.33	0.32	0.31	0.30	0.29	0.31	0.29	0.29	0.28	0.28	0.27
Yangtze river delta port group	0.40	0.40	0.37	0.35	0.32	0.31	0.34	0.34	0.34	0.31	0.32
Pearl river delta port group	0.44	0.42	0.40	0.42	0.40	0.39	0.41	0.37	0.34	0.31	0.30
Bohai rim port group	0.24	0.23	0.24	0.22	0.23	0.25	0.24	0.23	0.23	0.23	0.22
Southwest port group	0.27	0.28	0.24	0.23	0.23	0.20	0.20	0.21	0.22	0.22	0.23
Southeast port group	0.32	0.50	0.47	0.47	0.49	0.46	0.49	0.48	0.51	0.49	0.48

5.2.3 Method---Entropy Index

There are some differences between the Entropy index and the HHI index: the weights assigned to each enterprise's market share are different, the weight of the HHI is market share, while the Entropy Index is based on the logarithm from the inverse of market share. The two index give different weights to small enterprises. The Entropy Index gives greater weight to small enterprises and is easily influenced by the number of enterprises with less than 1% shares, while the HHI is almost unaffected by this. The lower the Entropy Index value is, the higher the market concentration. The higher the Entropy Index value is, the lower the market concentration. Because the calculation of Entropy Index formula is quite complex

and its value has no direct economic meaning, it is seldom applied in practice.

The formula: $E.I = \sum_{i=1}^n S_i \log \frac{1}{S_i}$

$$0 \leq E.I \leq \log N$$

- EI is the Entropy Index
- Si: market share of the ith enterprise
- n: the enterprise index in the market

The calculated results of each port group's Entropy Index are shown in table 10.

Table 10 The Entropy Indexes of the Chinese container port group and the five container port group

Entropy index	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
National port group	0.57	0.55	0.56	0.56	0.56	0.57	0.57	0.58	0.58	0.58	0.59
Yangtze river delta port group	0.46	0.47	0.49	0.51	0.54	0.54	0.54	0.52	0.53	0.52	0.53
Pearl river delta port group	0.42	0.41	0.43	0.42	0.43	0.45	0.47	0.48	0.50	0.51	0.53
Bohai rim port group	0.58	0.59	0.60	0.59	0.60	0.63	0.62	0.62	0.62	0.61	0.61
Southwest port group	0.59	0.57	0.57	0.61	0.60	0.57	0.58	0.56	0.59	0.57	0.57
Southeast port group	0.36	0.37	0.39	0.39	0.38	0.39	0.37	0.37	0.37	0.38	0.38

5.3 Results analysis

From the perspective of national container port group, the port group system structure has changed from centralized to decentralized, and the competition among port groups has intensified.

According to the data of CR4, comparing the container throughput of Chinese five port group, we can see that in addition to the Yangtze river delta port group, the pearl river delta port group and the Bohai rim port group, the market share of the other two port groups is small, and the five port groups all present the trend of oligopoly type 1.

It can be seen in the national port group of HHI value, HHI value has declined from 3283 in 2007 to 2680 in 2017. The trend shows that the container ports group of architecture is transferred from highly concentration to spreading. In terms of the proportion of port group market, in 2007, the market share of pearl river delta port group was 4358, that of Yangtze river delta port group 3966, and that of Bohai rim port group 2366. In 2017, the market share of the pearl river delta port group was 3045, that of the Yangtze river delta port group 3238, and that of the Bohai rim port group 2213. The market share was gradually balanced, as shown in figure 2. According to the HHI set by the U.S department of justice, the HHI of the national port group has changed from oligopoly type 1 to oligopoly type 2, while the Yangtze river delta port group and pearl river delta port group, the southeast port group were oligopoly type 1, and the Bohai rim port group and southwest port group were oligopoly type 2.

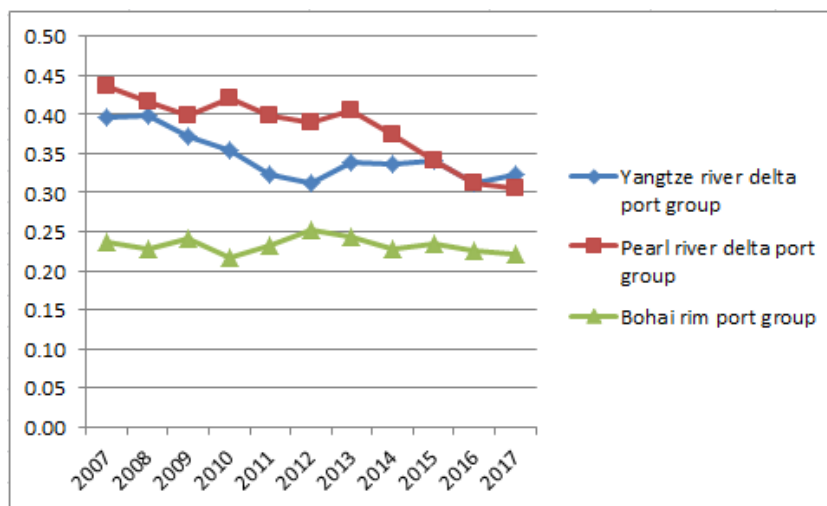


Figure 2 The trend of the three port group's market share from 2007 to 2017

From Entropy Index data, we find that the concentration of ports group in China increased slowly from 0.57 in 2007 to 0.59 in 2017. The market concentration of

Yangtze river delta port group and pearl river delta port group decreased rapidly, while that of Bohai rim port group decreased slowly. The market concentration of southwest port group and southeast port group remained modestly unchanged.

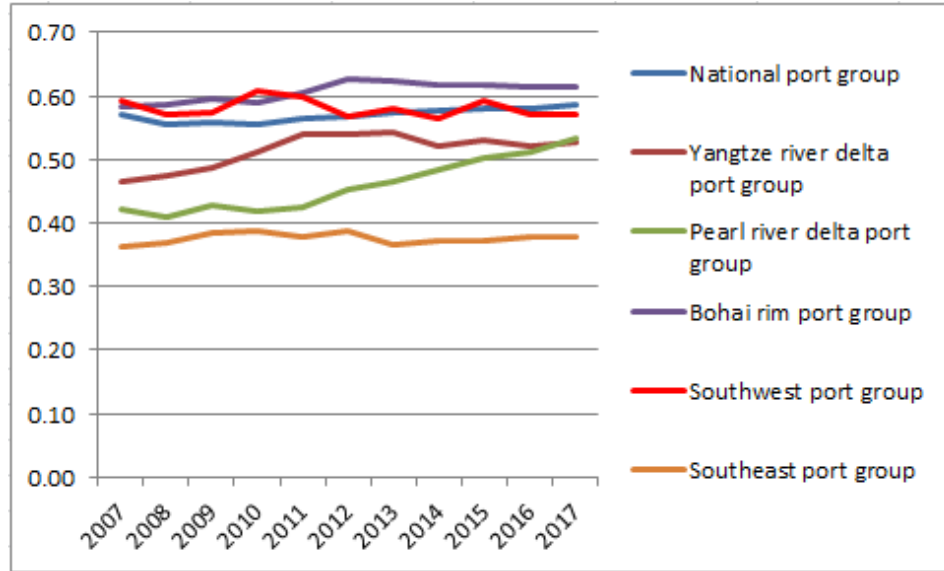


Figure 3 The Entropy Index of the five port group from 2007 to 2017

Based on the above analysis, we figure out that the container throughput of southwest port group and southeast port group is less than 1%, and the national container port group is formed into a three-pronged pattern in the Yangtze river delta, pearl river delta and Bohai rim port group. Container port transportation is different from general port transportation, not only meeting the needs of the development of the hinterland economy have resources agglomeration effects at the same time, the larger the throughput of container port, the port resource gathering ability stronger. Therefore, under the balance of market forces, each port group will increase the opening and construction of port resources to compete for goods sources, which will inevitably lead to the convergence of port functions and vicious competition.

The port system structure of containers is altered from single hub to coexistence of

multiple center port such as Dalian port, Qingdao port and Tianjin port of Bohai rim port group, Guangzhou port and Shenzhen port of the pearl river delta port group, Shanghai port and Ningbo-zhoushan port of the Yangtze river delta port group. In Chinese foreign trade development mode, the container port transportation and port transportation are different. The greater foreign trade transit are, the more obvious attraction of port to resources, which can lead to the development of regional economy. Therefore, under the mode of port management localization, the port investment and construction stand as a common method of driving regional economic development and improving the achievement of the port group construction and reasonable planning division of labor, preventing the port function convergence and vicious competition, which is an urgent task to deal with for port management department.

Hinterland economy is the main factor affecting the competitiveness of Chinese container port group. Along with the development level of regional economy, the construction and development of port group are promoted. For example, the competitive advantage of Bohai rim port group between 2007 and 2017 is weaker than that of Yangtze river delta and pearl river delta port group. According to the research, the competitiveness of the port group is affected by the hinterland economy, distribution network, port competitiveness and cooperation among ports. With the construction and development of the sea-railway transportation, the hinterland boundary of the port group becomes more and more blurred, and the influence of the hinterland economy on the competitiveness of the port group will be weakened.

The development stage of Chinese container port system structure is similar to the evolution of foreign container port system, which has experienced the stage of

decentralization, concentration, hub to edge challenge. At present, the Yangtze river delta, the pearl river delta and Bohai rim container ports group. Architecture has edge from hub to challenge stage, the formation of multi-center port and regional container port system.

6 Worldwide port competition and cooperation

After analyzing the Chinese port data, this paper will analyze the advanced management mechanism of foreign ports. In order to prevent the harm caused by disorderly competition. foreign ports constantly seek for cooperation opportunities and strengthen cooperation in the competition. The cooperation between ports is not only in line with the characteristics of the port industry, but also is the objective need of development and is proved by international experience. At present, many ports in the world have adopted the alliance, merger and other measures to expand the scale, which is the inevitable result of the chain reaction between the world liner company and the merger development. It also provides valuable experience for the development of Chinese port group.

6.1 New York - New Jersey port group

New York - New Jersey harbor was the first port group of operation. On the administrative division, the port of New York and New Jersey port located on both sides of the Hudson River estuary, belonging to the state of New York and New Jersey, New York - New Jersey port authority was established in 1921, the unified management of two port bridge, tunnel, waterway and port. New York - New Jersey port operation is typical of the landlord port mode, as New York and New Jersey of public institutions. The port authority authorized to exercise the functions of port

management, planning, construction and maintenance of ports, leasing to the professional company management, to ensure high quality and efficient transport service and port services, bearing the public power and public service departments of dual role, promoting overall regional competition ability.

Two ports break the administrative division and merger as the port of New York, New Jersey, relying on the world trade center in New York City, to form the port authority, the implementation of unified management and planning. Through joint efforts, it gives full play into the advantages of the port area, forming a unified competition entity, making the initiative position in competition with other ports, which played a powerful role of hub in the region. Figure 4 shows the New York-New Jersey port group competition and cooperation organization model.

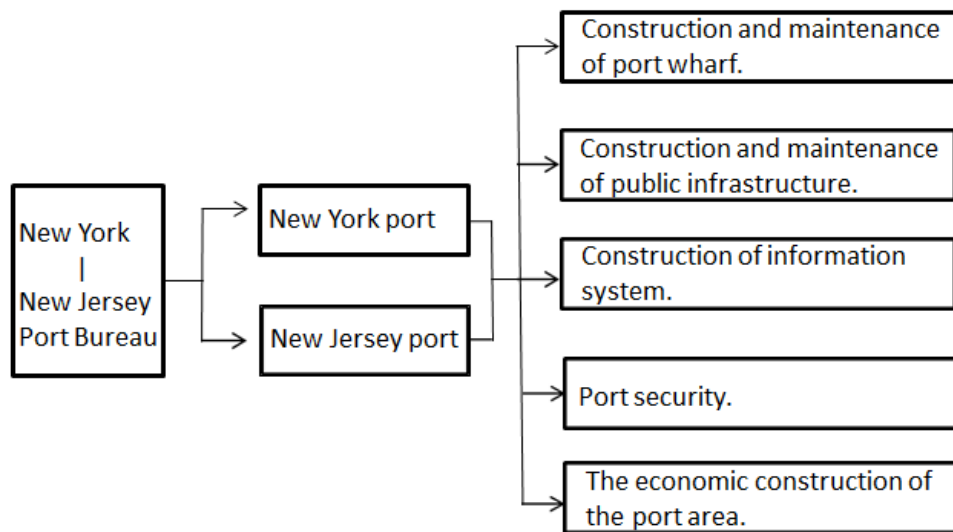


Figure 4 New York-New Jersey port group competition and cooperation organization model

6.2 European port group: European harbor organization

The EU has more than 1200 seaports, belonging to 20 maritime countries, which play

an important role in the international trade of the EU and the domestic market. As the world manufacturing transfer to developing countries, Europe and the world trade volume increased year by year, and the harbor for the EU economy is also growing, and the original European Community transport policy cannot timely and fully reflect the ports and port of the entire EU regional interests. As a result, the European Union was established in 1993 as the European seaport (ESPO) to coordinate management across Europe. Figure 5 shows the organization model of port competition and cooperation in northwest Europe.

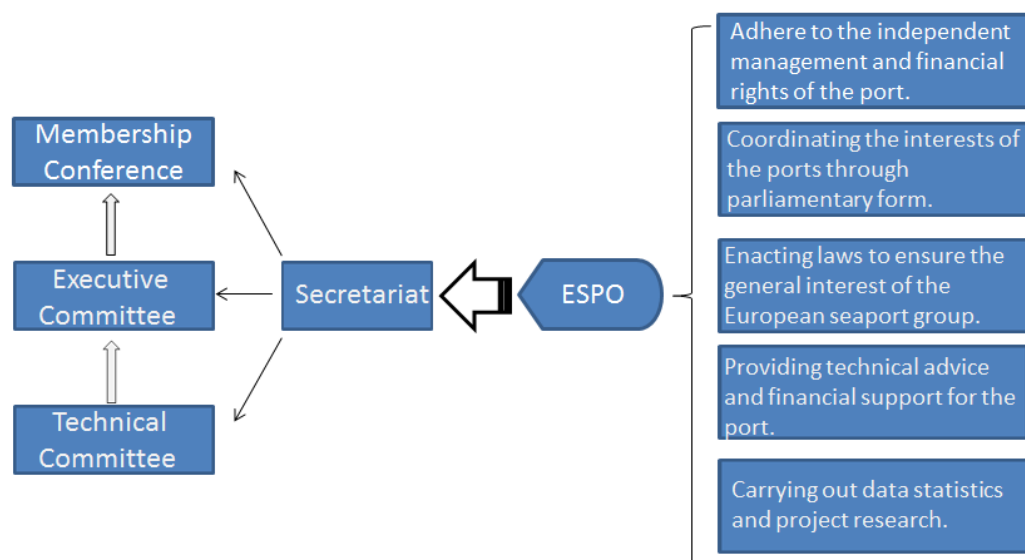


Figure 5 The organization model of port competition and cooperation in northwest Europe

European harbor group don't participate in the construction and operation of ports, emphasizing the independence between the port members to encourage competition between ports. But by discussing problems of members of congress, they ensure the overall interests legally to promote the cooperation between the ports, reducing internal friction, to achieve a reasonable division of labor and orderly competition, to

strengthen the EU port group of overall competitiveness. Through the coordination of the European port organization, the European ports are closely linked and developed in an orderly manner, which is a model of the system. The port system is composed of different sizes and specialized ports, among which Rotterdam and Antwerp are world-class ports which ensures the comprehensive development. Amsterdam - IJMUIDEN group and Zeebrugge port use their geographical advantages to develop dry bulk cargo, bulk cargo transportation and ro-ro transport; Other medium-sized ports and small ports, such as Ostend and Ghent, have their own industrial characteristics, and the cooperative competition of the system port group has promoted the overall development of regional logistics.

6.3 Tokyo bay port group

Tokyo bay in the Kanto region, Japan in kanagawa prefecture Miura peninsula and Chiba prefecture total peninsula surrounded, narrow bay from Yokohama port of Hong Kong, Tokyo and Chiba, Kawasaki, port, Yokosuka port and other world-class port more, over the years have not excessive competition, thanks to the government of unified planning, industrial support and harbor city linkage. Japan is island, which lack in resources, sea transportation and port economy, Japan's ministry is determined by the harbor act the function of port management institutions, giving's ministry planning and coordinating the development of the port group of power, to ensure the port development vision, in Yokohama, Tokyo, Kawasaki, such as unified entry fees and the use of quay wall. Simplifying entry formalities, to some extent limited the free competition; At the same time, the industrial development of Tokyo bay has formed the industrial zone, and the development of industry has brought sufficient supply support to the ports. In addition, the port group of Tokyo bay can use the city to promote the development of high-end services such as port tourism,

leisure and finance, and the linkage of the port city, each with its advantages and the division of labor, becoming an organic port group. Table 11 shows the functions of each port.

Table 11 Different port planning in Tokyo port group

port	port level	foundation and characteristics	function
Tokyo port	particular important port	Newer port; relying on Tokyo, Japan is the largest economic center, financial center and traffic center.	Import port; commodity import and export port; domestic trade port; container port.
Yokohama port	particular important port	An important international trade port in history; a major component of the Tokyo and Yokohama industrial area is heavy chemical industry and machinery.	International trade port; industrial output port; container cargo distribution port.
Chiba port	particular important port	New port; an important part of Tokyo and Chiba industrial area; Japan's heavy chemical industrial base.	Energy input port; industrial port.
Kawasaki port	Particular important port	It is connected with the port of Tokyo and the port of Yokohama.	Import of raw materials and output of finished products.
Mu Ziman port	A local port and changed into an important port in 1968.	Mainly to serve the territory of the Jun Jin iron and steel plant, rich tourism resources.	Local commercial port and tourist port.
Yokosuka port	important port	Mainly for military ports, a small number of local businesses.	Military port and trade.

6.4 Haracteristics of port group development

6.4.1 *Unified and coordinated*

In order to improve the competitive position of its own, blind investment and construction, lower rate, it thus rob near port of the supply of goods, which greatly consumed within the port group of resources, not conducive to the overall

development of port group. Foreign governments have realized that cooperation between ports is the only sustainable development. Whether it is New York -- the port authority of New Jersey, the European port organization or Japan's transport ministry, the management and construction of the port group plays a crucial role. They will ease the competition between ports, coordinate the development direction of the port, and put corresponding policies in place to assist coordination.

6.4.2 Extensive cooperation

The development of foreign ports reflects the unique industrial characteristics of the port and demands the natural scale and social benefits, which leads to the monopoly of the port operation activities. Due to the existence of industry barriers, metallurgy, electric power, agriculture and the army have built their own special ports, resulting in serious damage to shoreline resources abroad. Therefore, the development of the port emphasizes on coordination and cooperation between industries, enabling the development and utilization of port resources integrated the interests of the various industries, such as traffic, water conservancy, agriculture with both regional industry characteristics, so as to realize economies of scope, and enhance core competitiveness of the port group.

6.4.3 Clear division of labor and dislocation development

The government has introduced regulatory measures to prevent vicious competition from all over the world and avoid repeated construction. Each port has its own characteristics to achieve different competition and dislocation development. In the case of Japan, Tokyo has the world advanced foreign trade container terminal, mainly at the burden of Tokyo and residents necessary living material circulation industry activity, including wheat, aquatic products, vegetables, paper and so on

which are closely associated with city life necessities. Yokohama and Kawasaki mainly import crude oil, iron ore and other industrial raw materials and grain, export manufactured goods. The import of Chiba is dominated by oil and natural gas, supplemented by iron ore, coal and wood. The export of goods is mainly automobile, followed by steel and ships.

6.4.4 Differentiated cooperation

Because of the non-renewable resources on the shoreline, it is very common for ports to be too near and in the same hinterland, but different ports have different geographical advantages and different characteristics. Under the premise of market segmentation, it will be more stable and long-term to establish the core competitiveness of each other and seek the cooperation field at the same time of differentiated operation. Hamburg's seaport is close to the Baltic sea, and it is Europe's largest rail cargo transport, giving full play to the advantages of offshore transportation and sea transportation, so as to expand the scope of the hinterland. The advantage of free ports makes it become important transshipment port in Europe; Port of Rotterdam and Antwerp port with developed barge transportation, through the channel regulation, bridge up, the construction of the inland river container pier, also effectively promote the development of inland water container transportation.

6.4.5 Ensure the autonomy of port operation

The government interferes in the whole interests of the port group and ensures the autonomy of the port operation and the environment of reasonable and fair competition. Port operations of autonomy can ensure the competitiveness of the port services. In addition to rate advantage, quality of service and efficient customs clearance speed, and the establishment of EDI electronic platform will become the

powerful weapon of benign competition between ports.

6.4.6 Downplay administrative divisions

Port is becoming bigger and stronger, and foreign ports usually break administrative division limit. Using port group of coordinated development, nature and economic law in the market competition of port resource integration consolidates the dominance of hub port, giving full play to the regional port and feed port of the auxiliary function. It formulates and consummates the shoreline utilization planning and port development plan, strengthening port group of internal collaboration, to promote coordinated development of port as a whole, in mutual interdependence in the hinterland, formation of scale in the complementary.

Foreign ports of practice have proved that the port resource integration can greatly enhance group of economic agglomeration and industry derived ability, making the port city from passive into active productivity layout, productivity layout from relying on the interior resources to comprehensive utilization of the resources at home and abroad, and creating new economic growth point and the industrial chain. From the situation of international port competition, port integration is the trend.

7. Analysis of Chinese port monopoly

After discussing the concept and operation mechanism of foreign advanced port group, this paper will study the problem of port monopoly in China.

7.1 The problem with the running mechanism

Due to the management mechanism and other reasons, Chinese port group is not yet

mature, and there are still some problems in operation, mainly including the following aspects.

First, low efficiency competition of the same quality. The performance includes:

1. In order to gain a comparative competitive advantage, expand market share and excessively depress market price;
2. Blind and excessive investment has led to the assimilation of the freight transport structure between ports, and even caused the situation of partial oversupply in the region, which has further aggravated the competition between ports.
3. Some of the less profitable ports received financial subsidies and administrative intervention from the government, which interfered with the orderly competition of the market

Second, the proportion of feeder lines in coastal ports is too high and there is no hub port with international competitiveness. In Chinese coastal port groups, the proportion of offshore feeder routes is much higher than that of ocean-going main routes.

Third, the utilization efficiency of port resources is low. In the process of resource utilization, there are many phenomena. The port occupies more but use less. The private use public land and produce vicious development. As a result, there is no situation of complementary advantages and reasonable division of labor between ports in both hardware facilities and software environment, which seriously affects the overall development of port groups.

Fourth, the management system is not scientific. The administrative division is

obvious in the port operation, and there is a lack of due cooperation between regions. All regions develop ports from their own interests, leading to repeated construction, vicious competition and waste of resources, etc., which are mainly reflected in their respective policies, thus weakening the overall competitiveness of port groups.

In terms of operating status of the port industry, the center devolved the power to the local. Then Chinese coastal cities have formed their own port industry. Although there is a certain degree of competition between them, the competition is not very fierce. Port group company build and formed products and service network based on the regional quality respectively. They designated area, standing as regional integrated monopolies instead of the national integrated monopolies, making low efficiency monopoly an unresolved problem fundamentally.

7.2 The problem with the concentration of port operators

Concentration of operators is an economic phenomenon in market competition. Concentration of operators in port integration is also an objective product of port marketization in China. With the reform of Chinese port management system and investment and financing system, the whole society has been stimulated to build and operate the port with enthusiasm. In evolution driven by the laws of market competition, such as port integration boom arises at the historic moment: survival in big ports cracks developed choose alliance or acquisition to enhance the overall strength, in order to get market share; The weaker ports, feeling the difficulty of "fighting alone", are united to survival. In order to avoid the harm of both sides, stronger ports have entered into covenants. We should not ignore the negative effects of business concentration while pursuing the positive effects of business concentration such as scale benefit. Port integration in concentration, especially in

the big port share purchase or holding company under the situation of small and medium-sized port, is bound to further enhance the strong market advantage status of port operator, to a certain extent reduce the port operation market competition degree, limit or eliminate competition. In addition, the merger between ports where if it's just big ports "equal", in order to not only cannot achieve the goal of resource integration and the overall strength of ascension, but local port operation market competition will intensify and malicious competition. Furthermore, if signed between ports to take profits "grab" the alliance agreement, to a certain extent will only further strengthen port in the local market dominant position, also not conducive to the port operation to promote the efficiency of the economy and the healthy development of the port operation market.

At present, the port operation mechanism is imperfect, the port operation market and the characteristics of monopolistic competition and oligopoly competition, combined with the port operation market in China has shown significant planning and monopoly, to some extent means concentration between port operator in China has a relatively high risk of eliminate or restrict competition. In addition, in practice, in the face of large port group. the port administrative department is lack of effective measures to cope with the situation, or need for local economic interests or investment promotion and capital introduction, mostly about the laissez-faire attitude.

7.3 The deficiency of antimonopoly law in China

7.3.1 The defects of the multisectoral law enforcement system

The enforcement system of EU competition law focuses on efficiency, while the US pays more attention to balance and justice, the rationality and controversy of

procedures. But Shi long (2007) mentioned that this parallel policing of multiple law enforcement, even in the US, is not considered a good experience. Because two federal agencies with overlapping jurisdictions enforce antitrust laws, they must be costly and inefficient compared with a law enforcement agency. Wang Xiaoye (2006) mentioned that it is conceivable that if the United States had established an antitrust authority today, it would not have established two parallel jurisdictions at the same time.

Our approach goes further than that of the United States. According to the 《Anti-monopoly law》, the anti-monopoly law enforcement in China is three law enforcement, namely, the national development and reform commission in charge of the antimonopoly law systems, industrial and commercial bureau, the ministry of commerce system part of the content, that is, price monopoly, abuse of dominant market position and concentration, the antitrust committee to take the functions of the three departments coordination. There is no doubt that the development and reform commission (NDRC) systems, industrial and commercial bureau, the ministry of commerce system of overlapping responsibilities and, in the practice may lead to long or enforcement in vacuum, it is conceivable that the industrial and commercial authorities in the investigation monopoly agreements, and the development and reform commission, price monopoly agreements and cause chaos entanglements. On the other hand, the coordination with the industry regulatory authorities involves complex legal coordination and legal interpretation. The problem of coordination has become a realistic and serious problem in the implementation of anti-monopoly law. Coordination problems caused the antimonopoly commission the establishment of the agency, but it is mainly the agency, and standing body set up under the anti-monopoly bureau of commerce, it is hard to imagine the agency on the

coordination problem how efficiency into full play.

In a word, when it comes to the independence of law enforcement, the same antimonopoly function with internal connection is divided into three parts, which inevitably leads to disputes and frictions between law enforcement subjects in law enforcement practice.

7.3.2 The relationship between law enforcement and regulators is unclear

Under the 《Anti-monopoly law》, antitrust authority and the relationship between the departments of various industries are in a position of full equality, when it comes to antitrust concerns from all walks of life, industry departments shall have the right to own completely, just ask for the opinions of the antitrust authorities. Experience has shown that limit competition regulators to deal with the regulated industry case is the biggest problem, they were in the supervision enterprise and its competitors or consumer disputes, they often stand on the position of the regulated, it is the theory of "regulators captured". When most of the enterprises under supervision in China are state-owned monopoly enterprises, it is not uncommon for relevant departments and industry regulators to use administrative power to safeguard the interests of incumbent monopoly enterprises. Because of the departments of industry and regulators in power configuration is not to create a competitive market structure and standardize the market behavior of enterprises as the goal, the agencies generally is not a strong consciousness of antitrust, cannot adapt to the requirement of antitrust.

Another problem is that China in the telecommunications, electricity, postal, railway, petroleum, banking, insurance, securities, such as almost all industry in national economy and people's livelihood more important set up departments or regulatory agencies, if these institutions apply department restrict competition cases, the conflicting policies from different departments, not only can reduce the efficiency of

antitrust enforcement in China it is impossible to establish a unified national market competition order.

It can be seen that the phenomenon of Chinese port monopoly is caused by the problems in the above aspects. The problems in Chinese port operation mechanism lead to the low efficiency. The concentration of port operators limits competition. The defects of Chinese anti - monopoly law make the government unable to supervise and standardize the port operation well.

8. Suggestions

By analyzing the above problems, this paper will put forward some specific suggestions on the problems, aiming at the improvement of the port operation mechanism, the concentration of operators and Chinese anti-monopoly law.

8.1 To improve the operation mechanism

To solve the problem of low efficiency of port monopoly, the operation mode reform of port industry should be divided into two stages. The first stage is to improve horizontal separation and realize effective competition among port enterprises. The second stage is to carry out vertical split and realize effective competition in all operating links. The third stage is to carry out open operation mode to realize the optimal allocation of resources. Such reform can improve the efficiency of ports, optimize the allocation, reduce the barriers to the port industry, safeguard the interests of consumers and promote the sound development of the port industry.

8.1.1 To improve the operating mode of the horizontal separation

The operation mode of Chinese port industry adopts horizontal division and vertical integration, which is the result of horizontal division of the traditional full-service integration operation mode of the original port industry.

The advantages of vertical integration model are as follows:

1. Facilitate the planning and construction of roads, railways and other infrastructure between ports;
2. Conducive to clear division of labor among ports;
3. Conducive to the integration of resources between ports, making up for their respective deficiencies and enhancing their overall strength.

The disadvantage is that although Chinese port industry has been decentralized and divided horizontally, there is no effective competition among port enterprises. Lateral separation efficiency is the key to splitting after the vertical integration between business free access to each other so as to form the effective competition. In a competitive environment, enterprises can grow. At present, the port enterprises have regional monopoly, and the competition behavior has not been marketized. There is no motivation and pressure for innovation. The introduction and innovation of technology are basically carried out under the leadership of the government. For lack of external competitors and competitive environment, the innovation of the enterprise itself has insufficient motivation. While the decentralization on the reform of the port industry formed a market pattern of local autonomy at Chinese ports, it did not form the market environment of the port industry with effective competition. Therefore, the result of vertical integration planning after horizontal splitting is far from the demand of the market, so the actual effect is not ideal.

Therefore, the first step of port industry operation mode reform is to deepen the operation mode reform of port industry's horizontal separation and build an effective competitive market pattern. The key to creating an effective market environment for the port industry is to break the regional monopoly of the industry and the non-intersection of product competition.

8.1.2 To separate the port vertically

The vertical split operation mode aims to realize the competition between different operating stages, and at the same time, ensures the overall operation mode of the port enterprise group. Through the separation of vertically integrated management enterprises, effective competition will be formed in the production of port facilities, the extension of industries, the operation, maintenance and construction of ports and other operating stages. It should strengthen the mechanism and impetus of technological innovation, form direct and effective competition between the port facility production and manufacturing enterprises, reduce the cost of production enterprises, and realize the intensification of production. It aims to form a competitive relationship between technical research institutes and realize the function of technological innovation and realize the competitive relationship between the port construction, maintenance and operation of different port extension industries and port enterprise groups.

Specific details are as follows:

1. To separate relevant scientific research units, port construction, industry and port construction, operation, maintenance and other departments from vertical integration of the enterprise, to become an independent legal person enterprise; to exercise their functions respectively; to form operating companies in the

longitudinal formation at various stages in order to form effective competition at different stages of port operation.

2. The port enterprise group shall implement group control and manage all subordinate enterprises

8.1.3 To optimize the resource allocation

Through horizontal and vertical splitting of the port operation mode, the market pattern of efficient competition in the monopolistic link of the port industry and sufficient competition in the competitive field is gradually formed. After the splitting plan went through the role of market mechanism, the splitting enterprises tend to rearrange, merger and purchase another, so as to form a brand new pattern of market. Industry market is fully opened at this time, the operation mode of the enterprise further evolved into open one with more perfect competition.

The basic features of the open operation mode are: In the market competition mechanism, the port industry is competitive, the technology and knowledge is intensive, the competition between the enterprises has more performance for the competition of technology innovation. The operation mode of the port industry shows new trends. Maintenance and service network greatly reduce the transaction costs and operating costs, due to the upgrading of technology, speeding up of innovation and application as well as the information transmission. It cut costs of the mutual information transparency, between making maintenance and service of network.

The competitive efficiency gains brought by adding a maintenance and service network could be greater than the increased investment costs, operating costs, the organization cost and transaction cost owing to it, making it possible to run a competitive network.

Between the production and manufacturing enterprises of port facilities, infrastructure extended products. It has evolved into a relationship of both competition and cooperation, which is the result of the deepening of competition and the specialization of labor division. Enterprises give full play to their respective advantages and form a differentiated situation of both competition and cooperation. Borderless cooperation will make haste to change traditional port industry economy, division of labor further refinement, industrial chain extending, each enterprise on the chain to find their place. Through cooperation, win-win and competition, it is possible for port enterprises to form the market structure of oligopoly based on competition through competition and integration. It is worth pointing out that based on competitive oligopolistic market structure is on the basis of the experience of the port industry development, and implementation process of evolution. A competitive market is the "survival of the fittest", "the strong constant strong" fully embodying the basic principles of market economy. It has experienced the process, to effectively implement comprehensive port enterprise big and strong, professional enterprise small and designed goal. Through the monopoly market structure, competition behavior is better than that of perfect competition market structure. It is the embodiment of the realization of the economic efficiency and, can achieve the optimal allocation of resources. The real economy achieves scale economy, scope economy and industry economy

8.2 To improve the system of concentration of port operators

Business concentration is not a natural malignancy of law. It is anti-market economy to exclude business concentration. A benign and healthy development of the market structure, market concentration should be controlled within a certain range, both to prevent the monopoly caused by too few operators. Besides, it should avoid that the concentration of operators which keep in line with the economy of scale and not disturb completion are impeded.

Similarly, port scale economic benefit brought by the concentration play an active role in benign and healthy development of the port operation market in China. It optimizes the integration of regional port resource allocation and therefore promotes port competitiveness in China. At the same time, we should also be soberly aware that port concentration is both a blessing and a curse. Excessive concentration degree will reduce the port operation market competition, eliminate or restrict competition, weaken the port economic vitality. Port management in China especially in the current market mechanism is imperfect. It is necessary to bring port operator concentration into the anti-monopoly law regulation, at the same time to set up regulatory agencies to defend the adverse effects in advance. These effects may include hindering fair market competition, weakening the economy efficiency, influencing consumer interests and social public interests in the integration of port concentration. This action may ensure sustainable and healthy development of the port business in China market. At last it displays that port is fundamental, public and providing service for the national economy and social development.

8.2.1 Substantive review

On the issue of the declaration of concentration, 《implementation of the state

council on operators of centralized declaration for the regulation of standard》announced on August 3, 2008 has been clear about the operators of centralized declaration for the turnover of the standard. Chinese law of port and the port operation and management regulations stipulated rules that the port operator shall provide statistical data and information about legal obligation, therefore the turnover of port operator to participate in it is not difficult to determine.

In addition, the regulations set up "the concentration of the declaration did not meet the standards, the anti-monopoly enforcement authority under the state council that may eliminate or restrict competition effect, in accordance with the provisions of these regulations may require the operator to declare" out of the terms and conditions. In practice, it is difficult to determine the "possible exclusion and limitation of competition effect" of business concentration. Due to both positive role and negative influence of market competition concentration, to avoid subjective mistakes and a potential moral hazard, we should consider these factors into account, such as the port operation market access, the market share of port operator who participate in the concentration, consumer interests and the influence of national economy. The operator concentration in the integration of port should be judged properly and reasonably.

8.2.2 Port operation market access analysis

In port operation market, due to the natural monopoly of port in terms of geographical location, water depth and the large investment, long payback period, its operation requires a certain scale, and easily causes capital barriers to companies with poor capacity and small scale. In addition, these small enterprises still face certain policy barriers to enter the market. The 2008 Nanjing port "cargo tally

contest" also shows that it is difficult for smaller enterprises to enter the port cargo tally market. Thus, it is easy to conclude that although port operation market access in China has expanded from the law, port operation market in China is still a high barriers of the market, due to special natural attribute and long-term influence of plan management and state-owned monopolies. New operators to enter the market is facing a difficult market environment, the original market structure is quite stable. Therefore, it is necessary to carry out prudent verification on the concentration of original operators in the port operation market.

8.2.3 Participate in determining market share of port operators

The antimonopoly laws of various countries usually take market share as an important sign to judge the market status of enterprises and take it as an important factor to evaluate the concentration of operators. As for port operator's market share, we should not decide it only according to the turnover or a single index. Instead, we should consider investment trends (foreign direct investment, port), port throughput (container throughput and cargo throughput), port operation capacity (port service, port loading and unloading rate, the port bridge cranes, port berths, berthing ships), port finances (port total assets, total profit), ports, natural conditions draft (port, port location advantage), and other important indicators. Especially it is important to note that in the port operation market, the port draft, location advantages and port service belongs to scarce public resources. In the allocation of the market, it is not the relationship between the pair. If after integration, deep water coastline, fine port, routes, such as scarce resources are under control. The port operator with superior port resources is more popular with customers. It will lead to increased market share of port operator who participates in concentration, while market share of these who do not participate in the concentration is obvious less. Then the possible situation

should be intervened or prohibited by the anti-monopoly law. In general, the port operator not prohibited is concentrated, the impact should be controlled in the concentration of port operator. If it had the obvious overflow if the external effect of squeezing other ports operator of living space, it can be regarded as a potential threat to market fair, thus good for welfare of consumers, conducive to the development of national economy as a whole or other aspect to find justification to support such concentration.

8.2.4 The influence of concentration of operators on consumers

In port integration, especially in the big port operator share purchase or holding company under the situation of small and medium-sized port, it is hard to avoid these port operator who has the advantages such as capital, technology, management and market of big, in form of a kind of cargo loading and unloading in Hong Kong business monopolies, and in the same port, different port operator shall provide facilities and services between the alternative, to a certain extent it can prevent ship or cargo customers to choose port facilities and service. Of course, we should not ignore the large port operator's involvement in development of small and medium-sized port, such as investment brought by the construction of pier, market development, routes open and jobs, pay taxes and fees, etc. This kind of case port operator concentration conditions shall not be prohibited, such as ban big port operator absolutely holding, after concentrated charge standards significantly reduced significantly increased or service, etc.

8.2.5 The influence of concentration of operators on economy

At present, the port integration, basically has the shadow of the government-led. Port integration was pushed by local government, from local or regional economic

interests, appear even administrative nature of port integration package. Only for statistical data service of the integration of form, it not only cannot achieve integration of resources, formed the scale economic benefit, the purpose of everything in a certain extent, make local protectionism, strengthening local port operation market monopoly, weakening the port competition, harm to port overall efficiency gains. At the same time, the need for local investment, small and medium-sized port investment introduction of large port operator, mostly in management and coastline of land as a joint venture investment, especially in the case of the large port operator absolutely holding, hard to avoid foreign capital to form monopoly, hindering the formation of the competition mechanism between port or ports, weaken the port economic vitality. In addition, the external port investment operator and the fundamental interests of the port is not completely consistent. Sometimes possible investors, operators of profit-driven in opposition to the public service between ports, coordinated development, thus affecting port brings adverse effect to the development of regional economy. Therefore, it is necessary to prevent this kind of possible adverse situation in advance.

The control of anti-monopoly law on concentration of business operators is to prevent the monopolistic behaviors that may eliminate or restrict competition in advance, which can avoid the huge cost expenditure and irreparable damage caused by the relief. Therefore, in order to avoid the danger of excluding or restricting competition and harming the interests of consumers and the public, it is necessary to integrate the operators in port integration into the scope of anti-monopoly law regulation and carry out preventive measures in advance.

8.3 To improve the relevant legal system

Antimonopoly law is known as the economic constitution law, which is a macro-regulation to prevent and stop monopoly behaviors, protect fair competition in the market, improve the efficiency of economic operation, safeguard the interests of consumers and the public, and promote the healthy development of the market.

8.3.1 To improve relevant laws and regulations on anti-monopoly law

At present, Chinese punishment for antimonopoly behavior is based on antimonopoly law, while the supervision of maritime affairs is mainly based on the maritime law. However, it is a pity that neither administrative law nor commercial law involves antimonopoly of ports and port operations cannot be regulated. Therefore, in the aspect of administrative law, it is necessary to include the items regulating the operation behaviors of port enterprises in the antimonopoly law and the regulations on international maritime transport; In the aspect of commercial law, it is also necessary to include relevant contents in the maritime law to regulate similar behaviors better.

There is a difference of the provisions of the regulations on prohibiting the abuse of market dominance and the legal language between the anti-monopoly law and the international shipping regulations, which inevitably leads to difficulties in the application of laws. Moreover, the regulations are mainly applicable to international shipping and its auxiliary industries, and they are seldom directly applicable to the port field. Therefore, it is necessary to unify the basic legal terms of the system of prohibiting abuse in the benign and healthy development of Chinese port operation market in the anti-monopoly law with the laws and regulations in the port field, and to reflect the general legal system stipulated in the anti-monopoly law in Chinese

shipping rules.

The American antitrust law has a history of more than 100 years, and American law enforcement agencies have issued numerous guidelines in addition to legislation. In the main text of the EU anti-monopoly rules, there are 24 implementation rules and relevant guidelines. However, Chinese anti-monopoly law only has the chapter 8 article 57, so it is urgent to formulate detailed rules and a large number of technical guidelines as soon as possible to make it operable. It is necessary to introduce supporting laws and regulations, departmental rules and anti-monopoly guidelines, as well as coordination with existing laws, such as anti-monopoly law and anti-unfair competition law, price law and industry regulation law.

8.3.2 To strengthen the authority of antitrust authorities

Relative to the European commission's highly authoritative executive power, quasi-judicial power, quasi-legislative power. Chinese antitrust committee is not specific in antitrust cases, it mainly through releasing antitrust guide and coordinate the anti-monopoly administrative enforcement work, providing the anti-monopoly law enforcement methods, so the government should strengthen the position and authority of the antimonopoly commission. Specifically, the anti-monopoly committee shall have three basic powers, the statutory investigation right in the anti-monopoly investigation, the independent executive power in the anti-monopoly examination, and the authoritative sanction right in the anti-monopoly execution----the right to punish and the right to adjudicate. After strengthening the position and authority of the anti-monopoly law enforcement agency, it will be more beneficial to the anti-administrative monopoly. Because the enhancement of independence and authority makes the anti-monopoly law enforcement agency less

subject to the intervention of the administrative organ and more effective in the management of the administrative monopoly issue.

8.3.3 To unify the anti-monopoly law enforcement agencies

The functions and powers of anti-monopoly law enforcement agencies should not be decomposed by various industrial regulatory agencies, which is not conducive to the unified implementation of anti-monopoly law, nor can they guarantee the unification of the identification and processing results of the same case or similar cases. In view of the current situation of Chinese multi-agency law enforcement system, more communication and information sharing are needed between different law enforcement agencies. A multi-agency law enforcement coordination mechanism should be established as soon as possible to unify the anti-monopoly law enforcement agencies. This will be conducive to solving the current multi-head law enforcement situation is likely to generate power dislocation, offside, confusion and other problems. At the same time, it is necessary to establish a coordination mechanism, a unified, authoritative and professional anti-monopoly law enforcement agency and strengthen legal sanctions against administrative monopoly.

9. Conclusion

In recent years, Chinese ports have developed rapidly, and the throughput of many ports is among the highest in the world. Port monopoly occurred afterwards. The National Development and Reform Commission's antitrust investigations of multiple ports also makes us realize the serious port monopoly in our country. This paper found that most of the scholars in the literature hold that port monopoly plays negative role for the port development. They also appeal to establish an effective port system. In this paper through the analysis of Chinese five major port group of market

concentration data, we obtained the conclusion that the port group changed from centralized to decentralized, but is still in a monopoly of high degree, and the competition between ports will be turned into the competition between ports group. The Chinese port group will develop into a three-pronged port group system with the Yangtze river delta port group, pearl river delta port group and Bohai rim port group. Based on the case of port monopoly at home and abroad and the deficiency of anti - monopoly law in China, this paper puts forward the methods of perfecting resource allocation, perfecting operator concentration system and improving the relevant legal system of anti - monopoly law.

At present Chinese port monopoly problem still has a long way to go. The port reform is the key to the healthy and sustainable development of the industry. How to better use resource configuration has important implications for improving port economy, which also affects the financing capacity of port industry and social investment. At the same time, it is urgent to establish a unified anti-monopoly law enforcement agency and enhance its authority.

There are still some deficiencies in the analysis of port data in this paper. The indicators established by economists on the degree of monopoly cannot fully cover the whole industry, so it is necessary for us to further study on the establishment of monopoly indicators for ports.

10. Reference

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