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WORLD MARITIME UNIVERSITY

Shanghai, China

**THE RESEARCH OF NEW PROBLEMS IN
MANAGEMENT OF REGIONAL PORTS IN
CHINA**

By

Zhang Jie

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
(IN INTERNATIONAL TRANSPORT AND LOGISTICS)**

2006

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DECLARATION

I certify that all the 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.

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After great effort of over than six months, my Analysis of The Research of New Problems in Management of Local Ports in China has finally come to the end. This dissertation is completed under the instructions of my supervisor, Professor Shi Xin. And at the end of this work, I will gratefully thank Professor Shi Xin, because I have been profoundly impressed by Professor Shi Xin's strict requirements of study, great passion for working and respectable high efficiency. Hence, these influential personalities will continuously affect my attitudes towards study and work tremendously in the rest of my life. I have also benefited quite a lot from the instructions and ability training by Professor Shi Xin during the daily communication in the progression of this dissertation.

During the progression of this dissertation, I have also got enormous help from many classmates and friends, especially Yin Xingyi, Tian xiao and Yang yanju. With their greatly help, I get precious materials about my studying, so they have contributed to my dissertation very much as well. Hereby, I give my sincere thanks to them.

Finally, I am going to thank my beloved parents who give me strong support both in life and study during these years.

ABSTRACT

Title of the dissertation: **The Research of Some Problems in Management of
Regional Ports in China**

Degree: **MSc**

With the economical globalization and China's entry to WTO, ports, as an important public infrastructure, will face to both great challenges and great chances. In order to compete with international ports, we must improve productivity and effectiveness of ports in China. China started port management system reform in 1980s. However, in the process of managerial innovation and fast development of economic profitability in Chinese ports, some new conflicts and problems have appeared. Such as division of responsibilities and location of functions among all kinds of administrative and operational management departments in regional ports of China, unreasonable regional port construction after the port managerial authority released from the central government, excessive investment and abundant construction, lack of general planning of ports without efficient control and supervision from the country, and unbalanced allocation of ports resources.

The paper wants to solve problems of division of responsibilities and effective allocation of ports resources. I look for some foreign or domestic cases, give successful examples and compare them. I try to analyze causes in theory and propose some suggestions.

In the first chapter, I introduce the current situation and new problems of ports in China. In the second chapter, I analyze three managerial conflicts of multiple leadership, compare with international managerial modes, and give suggestions to divide responsibilities and functions between the central government and the regional government, the regional port authority and the regional transportation authority, and the regional port administrative bureau and the regional port operational enterprise. In the third chapter, I study the problem of excess investment and abundant construction, give the suggestion of strengthening the planning of ports and strategic integration of ports among cooperative regions to achieve effective allocation of ports resources. In the last chapter, it is a conclusion.

KEYWORDS: Regional Port, Division of Responsibilities, Excess Investment, Port Planning, Resource Allocation.

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LIST OF ABBREVIATIONS

TEU	Twenty feet Equivalent Units
NVOCC	Non-Vessel-Operating Common Carriers
GDP	Gross Domestic Product

1. Introduction

1.1 Impact on the development of Chinese ports from the external environment

Port, it is a window of communication with foreign countries, and especially, coastal ports of a county are always playing an important role in a country's economic and international trading development. The changing of ports has a close relationship with the changing of economy. Nowadays, the port industry is developing very quickly in China.

The international economy becomes more and more globalization. Resources are allocated in the worldwide, and operational modes of production and business in enterprises have greatly changed, so ports must develop more functions, such as logistics service, distribution center, transferring of inter-modal transportation and so on. China's ports are facing new challenges and chances.

After China entry to the WTO, the development of international ports industry will impact national ports industry greatly. There are six obvious changes in the ports industry in the world.

- Marketization of ports' production

The ports industry, as one kind of non-renewable resources, has a nature of monopoly. In the past, ports in China were invested and managed by the government. Because both the planning and the production of ports followed government's administrative conducts, its nature of monopoly was strengthened. However, ports are conducted by the international market now, and resources of ports must be allocated by the marketing power. Competitions are becoming fiercer, so China's government must weaken the monopoly control on ports to compete with others and improve the market-based reform.

- Diversification of ports' services

The globalization of producing and selling makes the transportation of cargoes involved into an integrated supply chain, and promotes the appearance of international inter-modal transportation and global comprehensive logistics services. Port, as a node of the global transportation service, is developed in the direction of providing multiple value-added services, and becomes the center of cargo flows, cash flows and information flows. So the traditional functions of ports are expanded. The services of ports are not only the loading and discharging of terminals, but extending to the hinterland. In order to expand functions of ports and improve the efficiency of ports' operations, ports in China must remove the constraints of traditional port management modes to build modern ports.

- High-efficiency of ports' operation

Because of the development trend of containerization and maximization of container

ships, depth of water, seashore space, hinterland area, connection of consolidation and distribution will be requested more highly. All of these need a great deal of capital. In the past, ports in China are invested only by the government. Now government can't burden and tries to attract investment from non-governmental entities. The original approach of investment and building is not suitable and should be changed.

- Scale economy and internationalization of ports

Because of the great capital investment on construction of modern ports, the trend of scale economy and privatization of port' operations appear. More and more international investors and operational managers participate into the building and running of the pivot port. The internationalized trend of port enterprises is obvious day by day. So, ports in China should be not only invested by more investment entities, but also managed and operated by more managerial organizations. Hong Kong, Shanghai, Shenzhen, and Ningbo have ranked in the global top ten, and as international ports, modes of port management should be integrated with the world.

- Science of ports management

Generally speaking, there are two kinds of modes in the management of the port. One is integrating mode, the other is distributing managerial power vertically and horizontally. The integrated mode is that the administrative manager and the commercial operator are the same one. By the second mode, the power of administrative management and commercial operation are divided. This mode can also be subdivided into the equipment port and landlord's port. The divided mode can helps to expand financing channels, introduce competitions, and increase the

managerial efficiency. The traditional integrated management mode in China is no longer suitable, and the integration of functions of the government and the enterprise can't meet the requirement of fierce competition.

- Privatization of ports' operation

To adapt the division of administrative management function from operational management function, operations of ports becomes privatization. The reform of management system will bring out the changing of the investment and financing system of port. Then, the leading power of construction in port is not only the government, but various entities participate into the investment, building and running of the port. In order to decrease the requirement of entering the port industry and strive from the market competition, China's government should let more and more private capital involved into the operation of coastal ports.

1.2 New managerial problems of regional ports in fast development

The economic development and international trade development have stimulated the development of China's ports industry, and ports in China are studying some approaches and experience from foreign ports, so the port industry in China shows quite positive changes.

The containerization trend is obvious. The throughput of containers in coastal ports of our country has increased and exceeded 30% every year in the past ten years, the trend of the containerization of the goods is obvious day by day. With the

optimization of the structure of the imported and exported cargoes and the popularization of container facilities, the containerization rate of international trade in our country exceeds 70%, and the annual compound increasing rate of the throughput of international trade containers will be more than 16%¹.

The function of the pivot port is strengthened. With the containerization trend, the function of coastal ports in our country is changing, especially the function of the pivot port. Large coastal ports in our country have advantages in containerized transportation, and with the aggravation of the competition of the ship building technology and shipping companies, main international liner container ships are centralized to a few larger coastal ports. When the amount of the throughput of the imported and exported containers reaches to a certain scale, pivot ports will get further development in our country. So in this environment, Shanghai port is aiming the goal of the international shipping centre and increase its speed of investing and building.

In order to adapt new situation of port industry in our country, the country has reformed the managerial system of ports and the power and responsibilities are divided. When the power of management and responsibility are lowered to the lower level, a lot of constraints on the port's investment, financing, building and planning are all removed. The local port authority owns positive attitude. However, some new problems appear. In the process of port management reform, power and responsibilities between the central and the government are not allocated clearly, and functions and authorities between the port administrative management department and the port operational management department are not divided clearly, so some ports are managed by double or multiple leadership. This situation affects the

¹ Data comes from the website of Chinese Commercial and Trade

efficiency of productions and operations in regional ports. Then, because the local port authority gets more power but the power is not controlled efficiently, and a lot of local governments manage their ports only for local interests, not considering the macro interests at all. The plans of regional ports are not scientific and rational sometimes. To show the political achievements of the local government, people always invest and expand construction of port too fast and too much, and at last, the resources of ports are wasted and can't be allocated effectively in a national market.

1.3 The approach and the content of the research

I have chosen two problems to studying, division of responsibilities and allocation of resources in Chinese ports. Because these two problems are relative and significant, one is about the managerial mode, and the other is about the managerial approaches. One is about regulation-based administrative system, and the other is about the market-based operational strategy. The division of power and responsibilities refers to functions, controlling and supervising. The allocation of the resources refers to planning, market, and free cooperation. After solving these relevant problems, we can improve the efficiency of management and operation in national ports and use the port resources sufficiently, at last, increase the competition capacity of ports in China.

In this dissertation, I will study the new problems and give some suggestions. The way of thinking is as follows:

Step 1. Propose the problem of division of responsibilities in original ports and find

its causes —— management of multiple leadership in the original port.

Step 2. Analyze the causes of three kinds of multiple leadership——three kinds of managerial conflicts, and give the examples.

Step 3. Compare modes of dividing responsibilities and allocating functions in some foreign ports and the successful mode in Shanghai port after the port management system innovations in China.

Step 4. Use the theory of trade-off to give suggestions to solve three kinds of conflicts.

Step 5. The limitation of managerial ideas and capabilities of the local port authority causes the new problem of abundant investment and repeated construction. Give examples of excess investment and repeated building in some areas of ports group.

Step 6. Give suggestions of scientific planning and national macro adjustments and controls to avoid waste of investment and resources, and suggest to allocate resources effectively by both the adjustment of market and the cooperation among different regions.

Step 7. Give a successful case of integration of ports' resources in the area of Yangtze River Delta for reference.

There is an important explanation in this dissertation. The term of “regional port” in this dissertation means a special concept. In the past, ports in China are managed by the central government, after the reform of Chinese port management system, the

power of management was lowered to the municipal government or the local port authority, so here, “regional port” means “regional port governed by the municipal authority” in this dissertation.

2. The research of division of responsibilities in the management of regional ports

2.1 The managerial problem of multiple leadership in regional ports

The managerial problem of regional ports lies on that the management responsibilities and power are not divided clearly, and sometimes the regional port has to be conducted by double or multiple leading departments.

The regulation of the national government on management of regional port is as follows:

- *The Ministry of National Transportation, as the national administrative institution of central government, is responsible for the unification of administrative managements on all the national ports. It is responsible for making the planning of the national ports industry, adjusting and controlling the rational utilization of coastline resources according to relevant regulations, proposing survey reports of the large scale or the middle scale port project, making the development policies and regulations of ports industry, and supervising;*

- *The institution of traffic and transportation administrative management of the municipal government or the regional port authority should be responsible for the administrative management of regional ports and relevant districts in their administrative district;*
- *The port authority or the urban government should be responsible for implementing unified administrative management according to the principle of “one port, one administrative system”, and port operational enterprises, as independent market entities, should be responsible for business of running and operating the port in accordance with the port law.²*

According to the above, we can find that National Ministry of Traffic and Transportation, the regional port management authority, and the institution of the municipal traffic and transportation administrative management all have a certain degree of power to carry on management on the regional port. The division of these administrative rights is not clearly, so it leads to the fact that the problem of double or multiple conduction and management exists in practice.

The power of management and the responsibility of the managerial bodies are not clearly, and the problem of multiple leadership is mainly resulted from three conflicts:

The first is the conflict between the regional port administrative authority and the regional port operational enterprise. Especially about some profitable port projects, when the regional port enterprise pursues the maximum economic benefits, the regional port administrative authority pursues the best efficient control.

² China Port Law

The second is the conflict between the central government and the municipal government. Especially about some building projects showing the local image, when the government pursues the macro planning and allocating resources, the regional government pursues the maximum regional interests.

The third is the conflict between the regional port authority and the municipal transportation administrative management department. By the way of mixing reform, some affairs in port are managed by the port authorities, others such as traffics and warehousing in the port district are also managed by the regional traffic and transportation administrative bureau.

2.2 The analysis of three kinds of conflicts leading to multiple managements in regional ports

Here, the causes of these three kinds of conflicts will be analyzed in details.

2.2.1 The regional port administrative management department vs. the regional port operational management enterprise

For a long time, the system of merging administrative management with operational management made the regional port authority both the port administrative department of the municipal government and the legal entity of running and operating the port business in market activities. As the port administration bureau, it lacks the authority of administration; and as the large port enterprise, it receives too

much administrative interference; on the other hand, it can utilize the power of administrative management to protect its own economic interests in business, so it is not scientific. It is difficult to move towards the market system according to the request for the modern enterprise system. Under the double leadership, the administrative management of the port is very weak, and the market of port industry is difficult to be standardized orderly.

After the port management system reform, the port operational department in the past was reorganized to be the port enterprise (group), and the regional government sets up new port management organizations according to the regulation of "China Port Law".

Frankly speaking, the gradual promotion of the port management system reform has cleared away a lot of obstacles for the rapid development in the past years. And national port management organizations become mature gradually. However, because of the long-standing of the old system of merging administration with operation, it is difficult to be removed or changed entirely, especially in the aspect of port planning.

There is greater progress in the market-based transition of the port management innovations, but it still can not break through the original operation mode completely. The port enterprise still takes on all the building and running projects in terminal, railway, highway, warehouse, factories and so on independently in the regional port.

In a word, functions between the regional port administrative department and the regional port operational department are not divided clearly, so management of double or multiple leadership in regional ports appeared.

2.2.2 The center government vs. the municipal government

In a lot of coastal ports, the leadership of two levels exists in the management, one is the central authority, and the other is the regional authority. The central authority pays close attention to the whole industry situation, but the regional authority is different, and it pays close attention to the regional economic development. Sometimes, in the aspects of port planning and terminal management, there is no clear authority department in a port city. Multiple management results to the lack of a whole unified plan of the port, separating of the water areas, regional protectionism, repeated construction, and waste of port resources.

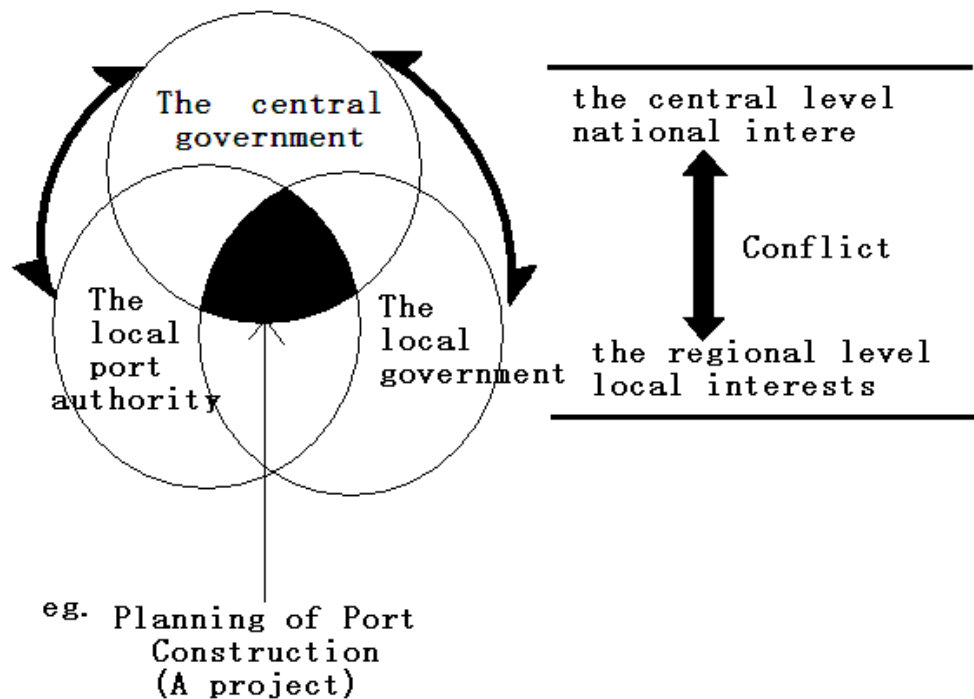


Figure2.1 conflicts between the central level and the regional level

In the structure of the organization, the central authority and the municipal authority have not only the overlap on management, but also the blind area. The managerial power is lowered to the regional, but the central don't release the power enough. On the other hand, some responsibilities and power belong to the central government originally, after transferred to the lower level, are ignored. The regional government lacks managerial experience, managing capability and the modern concept and idea of management. What is more, the regulation and policy don't give clear explanation.

For example, the country has originally planed the division of operations on the basis of specialization in the port of a certain area. When the management center shifted down after several improvements of port management system innovations, especially in a more free investment environment, the division of operations on the basis of specialization among these ports has been obliterated in fact, and relevant national industrial departments do not guarantee divided functions on the plan of cargo flows, the plan of builds and infrastructures by the way of national macro adjustments and controls. The result is that some affairs are conducted by nobody, some affairs are conducted by somebody not responsible, and the management situations are leaded to messier and messier.

2.2.3 The regional port authority vs. the municipal transportation authority

Here I just want to give an example in my intership practice.

One foreign investor wants to invest a logistics company in a port city, and its

business scope includes international shipping agency, land freight transportation, the business of storage, NVOCC and so on.

When applying for these services extended from ocean transportation, the regional traffic and transportation administration bureau examine and approve operations of transportation, but the port authority examine and approve operations of discharging and storages in the port district.

Such impractical bureaucratic system impacts the setting-up and development of logistics industry, which is regarded as a new strong point of economic growth. In the aspect of port state control and collection of port charges, different departments all have fierce conflicts.

The following is the procedure of applying for permit of operations and being examined by different managerial departments, and you can find the existing of multiple managements obviously.

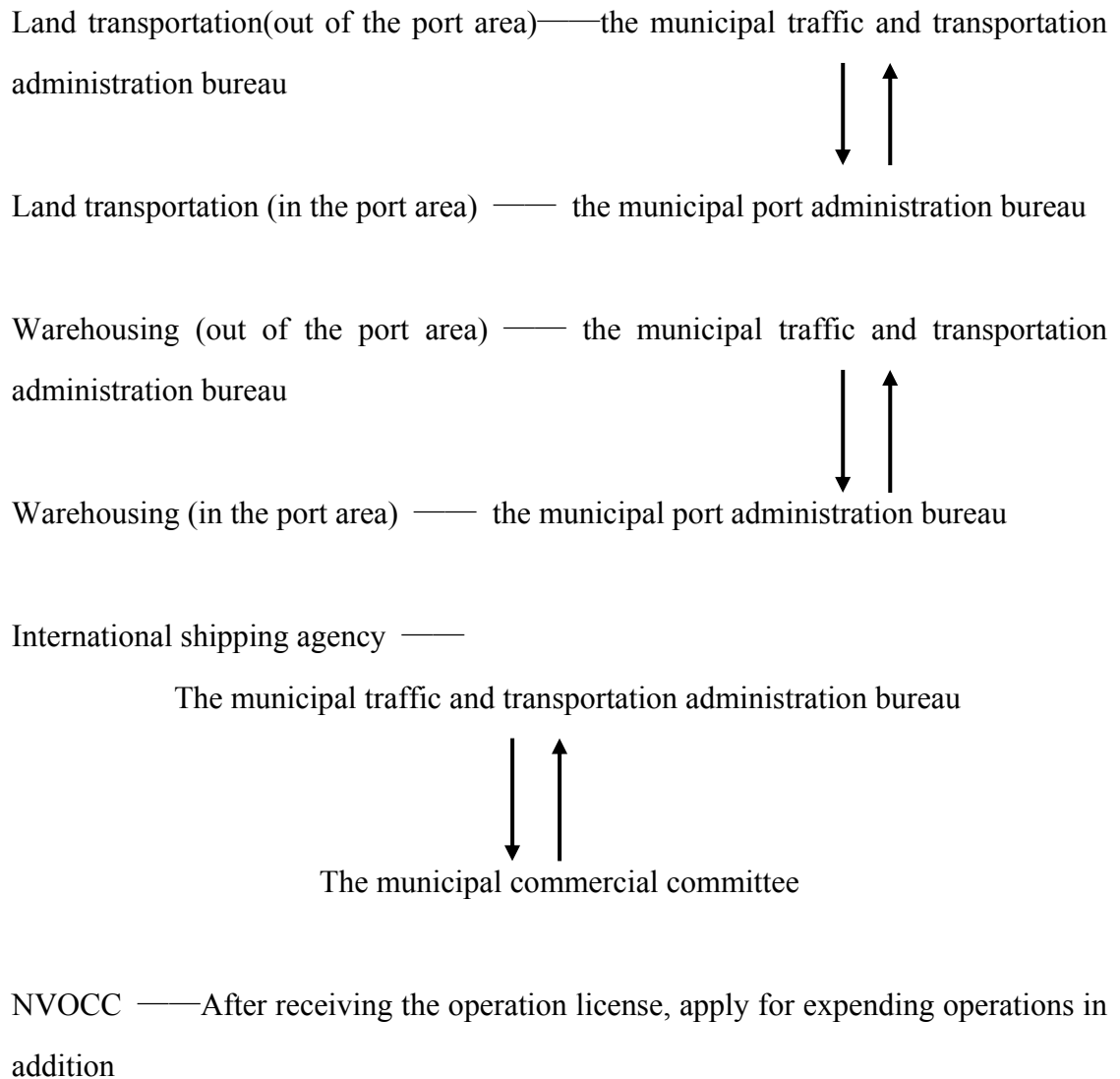


Figure 2.2 Procedure of applying for permit of logistics operations

2.3 Comparing foreign and domestic managerial modes of ports

To solve the management problem of multiple leadership, we must make sure the different managerial functions and responsibilities among different relevant departments.

Watching the external environment of the port industry, comparing with approaches of dividing port managerial responsibilities and functions in foreign countries, we can learn something.

The three countries mentioned under the table have adapted different management modes suiting to regional conditions, and they take their own advantages and avoid weakness.

Hong Kong is an international port with quite free policies, so it is invested, built and managed all by private entities. Japan owes a lot of state coastal ports, so it needs the macro conduction from the central government. Singapore focuses on the market-based management and operation, so it is financing by various investment entities.

Table 2.1 Comparison of different port managerial modes

	Japan	Hong Kong	Singapore
Administration	managed by both government and private enterprise, mainly by municipal government	managed by private enterprises	the port authority manages maritime and port technological affairs
Operation	managed by enterprise independently; intervention from the port administration bureau is forbidden	managed by private enterprises	port group (enterprise organization) manages market-based operations
Macro conduction and adjustment	law, regulations, financing policy and tax policy	free port policy, no administrative intervention	mixed policy of government investment, central controlling and supervising and free port policy
Financing and investment	governments invest construction, plan, and maintain infrastructure; private enterprises invest operational facilities	all invested and operated by private enterprises	shareholding system (government owns the most share)

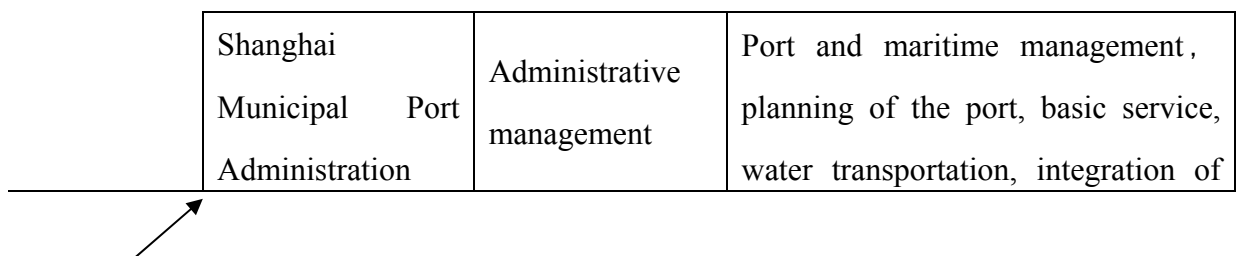
So management approaches of ports in China can't adhere rigidly to a certain form. Especially the port economic development of China is unbalance, and there are greater differences among different areas. In addition, the disadvantage influence of traditional management system has further impact, and we will meet situations not referred to in official regulations in process of deepening the port management

system reform, so we need analyze problems according to the factual conditions and offer suggestions of solving new conflicts.

China has improved its ports management system reform in recent years. In the past, traditional port management system in China followed China's traditional planning economic system, but with the development of China's economy and trade, the country opened the door to the world and began its economic system reform. Nowadays, the international economy becomes more and more globalization. China enters WTO and tries to enter the world economic system. In order to follow international economic rules and practice, and adapt to international economic environment, China must improve its economy more powerful. This situation is the same as the port management system reform in China.

Shanghai port do very well in the division of responsibilities and the allocation of functions among different managerial entities. The following shows the management structure of Shanghai port.

Shanghai uses the way of "independent port management mode". It divides the regional port authority into two parts, the municipal port administration bureau and the port enterprise group.



Shanghai Municipal Port Administration	Administrative management	Port and maritime management, planning of the port, basic service, water transportation, integration of
--	------------------------------	---

	Bureau		port resources
Shanghai Port Authority			
	Shanghai Port Group	Operational and commercial management	Capital revenue management, running and operation, important economic decision, investment and financing

Figure 2.3 Division of responsibilities and functions in Shanghai Port

Then, the management of administration is subdivided further. Shanghai Municipal Port Administration Bureau is the functional department under the Shanghai Municipal People's Government in charge of port and shipping affairs. It exercises administration over the port and shipping of Shanghai. Under this Bureau there are Shanghai Municipal Navigation Department (Shanghai Municipal Maritime Safety Administration), Shanghai Port Terminal Administrative Centre, Shanghai Port Waterfront Administrative Centre, Shanghai Port Construction Engineering Safety & Quality Supervision Station and Shanghai International Shipping Information Research Centre. The business of the Shanghai Shipping Exchange is under the management of the Shanghai Municipal Port Administration Bureau.

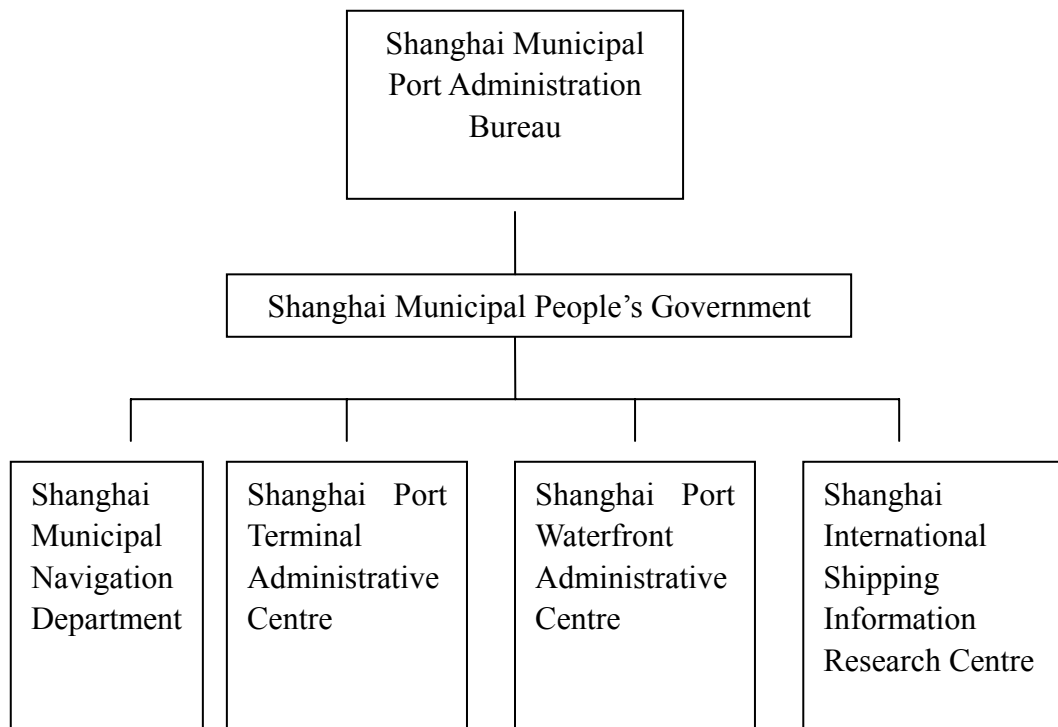


Figure 2.4 Subdivision of responsibilities and functions in port administration

The port administration bureau is involved into organizations of the regional government, and responsible for the supervision and management, construction, maintenance and management of the public infrastructures in regional port.

The port enterprise (group) makes up one or several port companies according to the requirement of the modern enterprise system. It only participates in production and operating activities, such as loading and discharging, storage and so on.

The characteristic of this kind of mode is suitable for the port which is large scale, difficult to protect infrastructures and port facilities, and has complicated terminal layout. This port structure can take the advantages of market-based capability.

Shanghai is an international large port nowadays and uses this mode. The administration bureau is responsible for the total planning and managing of the port and the shipping industry, and the port enterprise focuses on the business of terminals and containers, attracts various investment, and integrates resources of the port. It seems that the regional authority owns more factual power and the division between administration and operation is clearly.

The port structure should meet the regional changing. From the viewpoint of the relationship of the regional economy and the national unbalanced development in different ports, the managerial structure should be adjusted lying on the regional condition. There are three principles: First, the relation between port throughput and national economic development, analyzing the elastic coefficient of port throughput and GDP; Second, the relation between the handling capacity of port and the throughput, and the ratio between the handling capacity and throughput to confirm the decisive factor of building opportunity and importance; Third, the composition of imported and exported cargoes and the relation of changing, and the quantity can determine the adjustment of the port structure.

Lean from domestic and international managerial methods, we can explore new mode of distribution of power and division of responsibilities in regional ports.

2.4 Suggestion to solve three kinds of conflicts in regional port management

2.4.1 Division of administrative management and operational management in regional ports

Under the managerial mode of division of responsibilities and functions in regional ports, I try to study about the relationship between the operational enterprises and administrative authority. In terms of management theory, traditional control and conduct relation between the superior and the subordinate has been already difficult to meet the modern enterprise system. At the present system, port is a kind of enterprise colony which has many kinds of economic compositions coexisted, it is the brotherhood relationship with independent legal personality each other, and port authorities are departments of the government. The administrative authority checks and supervises lawful operation, security, environmental protection of enterprises according to national relevant laws. But the relationship between the enterprise and the subordinate is not administrative relations. The port enterprise can rent the infrastructure and equipment to other operational companies for utility. Here they are equal relation. The relation that serve and be served can also happen between port authorities and port enterprise, but all activities should be restrained by relevant economic contracts. Operational enterprises in the port can be set up according to the modern enterprise system, and set up the modern enterprise group according to the voluntary principle. But the port administrative authority might not be the certainly higher authorities who are in charge of port enterprise group. Enterprise's normal production and operation activities do not receive the intervention from the administration bureau. Authorities can invest in port business as the representatives

of national assets, and become the shareholders of these enterprises. But for the port authority, the main target of investment should be those companies which mean greatly developing the port but earn low profit rate. They need support and help mostly.

Because the functions of administration and operation in port management have been separated, the port enterprise must face to operating capital and producing revenue all by itself, and be responsible for the financial statement of port independently. In the relationship of regional government and the regional enterprises of port, the implementation of the tax system has also involved. The traditional method of "raise port with port, revenue covers cost" is carried on under specific historical condition and environment, and it has improved the port economic strength, played a certain positive role and promoted the port building. However, as the economic reform is deepened gradually, setting-up of the socialist market economy system and further development of the port, the traditional method of "raising port with port" has been already difficult to continue. The port is a focal point of national economic development of our country, and it is also a "bottleneck" which is restricting national economic development for a long time, the construction of ports needs a large amount of fund to investment. In the past, the public infrastructure, terminals in the port were all invested by the country for free, even without depreciation either. Now the investment structure of ports is transferred from the allocation of our central government and our country into the approach of loan of their own, and all the port enterprises raise public infrastructure in the port and collect the loan for terminal construction funds independently.

On the other hand, the administrative management department should not interfere to operations of the port. Sometimes the regional administrative bureaus have not fully

understood his own function at present, and has caused the port operational cost increasing by a large margin , and the profit drops, so the funds for raising the regional ports is fewer and fewer. In some ports, its income can't cover the cost, and the port enterprise has a heavy burden for repaying the loan. Some ports have been already unable to return the loan of port construction, and financial statement shows obvious fund shortfall, and influence the sustainable and continuous development of the port.

2.4.2 Trade-off between the central government and the municipal government

Then, I try to suggest on the problem of conflicts between the central government and the regional port authority. Considering about the limitation of vision-range and managerial capability of the regional port state control, I will compare the interests between the municipal government and the central government.

It is named that regional port state control manages the port which was under the double leadership for a long time, however, in the past many years, the fact was that the regional port authority is only responsible for the appointment and removal of chief leaders of the port. Other port affairs are still mainly controlled by the central government, such as planning, construction, investment, financing, pricing, operation and so on. The financial affairs of ports are implemented according to the state financial system.

So in people's opinion, these ports are national or central ports, and the regional government does not have a positive attitude on port's planning, investment,

construction and market management. The function of the regional government is not useful enough. The result of this phenomenon is that the developing plan of the port, rational utilization of the coastline and terminal, rational arrangement of the quay, infrastructure building and construction, safeguarding of the port, and regulations of the market are all restricted in various degrees. On the other hand, the administrative management of port is very weak. Except in Shanghai, the regional authority control and plan all about the port, and the municipal government support the owner of cargoes to manage terminals. In other coastal ports, there is no unified administrative management. Some regional governments do not consider the port state control as one's own administrative affairs, and don't plan and build ports carefully. The result is the low-level building repeatedly and waste of port resources.

After the implementing of the port law, the regional port authority owns more power and responsibility, and their positive attitude has been stimulated. However, the reform has weakness, and innovations should be deepened.³

From the viewpoint of the trade-off theory, the lowering of managerial power on ports is only a short-term balanced behavior of interests between the central government and regional authority at present stage, and is unfavorable to the long-term interests of national social economic development. Theoretically, goals that the central government and regional authority pursue have differences. The central government has priority to pursue macro economic stability and sustainable development, but the regional government pays close attention to local interests even more, such as regional economic environment, increasing employment opportunities, increasing regional fiscal revenues, stability of the regional price and so on. Therefore they can not be expected to be devoted to promoting the stabilization and

³ Ian, 1st, 2004

growth of the whole national economy at all, though total results of their activities may surplus the macro economic goal.

2.4.3 Coordination between the regional port authority and the municipal transportation authority

At last, I will talk about the relationship between the regional port authority and the municipal transportation authority. The central government lowers the power of port management and forms the administrative authority in port and the new relationship between the superior and the subordinate in regional ports. The port authorities should develop toward regional government-owned port progressively. Then the cooperation between management departments of the regional levels should be frequent. The regional port authority should accept the guidance and introduction from the regional traffic and transportation authority, and obey the port policy, and the planning and layout decided by the local government; emphasize the subject of resources management, operational management and strategic management. Strengthen the function of strategic management; focus on the core of economic benefits and social benefits; pay attentions to market survey and information researches; set up high-efficient organization management system.

Port, especially the main pivot port, because its hinterland is relatively vast, is the joint of a certain area with external world, and is shown as the comprehensive logistics center and the window of foreign trade even more. Then, the area in the administrative concept and the area on the economic concept are not identical, and the municipal government of port is unlikely to give up regional interests and

short-term goal to pay close attention to national long-term sustainable development. The regional port authority pays attention to the interests of economic concept, and the regional transportation authority pays attention to the interests of administrative concept. The development trend of integrated logistics and supply chain asks for that operations of ports and transportation in the city can be combined.

The port natural resources is relatively poor in our country, the narrow-mindedness of regional government on the regional level will cause the extreme waste of resources. In this way, balancing between the regional government's expectation for local port and the national macro economic goal, the provincial government should undertake to coordinate and supervise with different functions. These affairs all need coordination and cooperation between the regional port authority and the regional transportation authority.

With the establishment of market-based economy system, port managerial system innovation is not an administrative issue, but an economic issue. The impact of port managerial system innovation on the development of ports in China is from satisfying the requirements of national construction to meeting the demand of international markets.

3. The analysis of effective allocation of port resources

3.1 Problems of excess investment and abundant construction in regional ports

3.1.1 Facts of excess investment and abundant construction in ports of China

Firstly, I take ports group in Zhujiang River Delta as an example.

There are 33 berths in two important ports planned to be put into production in the next three years in Shenzhen and Guangzhou. The quantity of producing can reach to 16,200,000TEUs, but we estimate that the quantity of increasing is only 10 million TEU according to 8% of the complex growth rate. Construction of several mega expanding projects in Nansha, Dachan gulf and Yantian have already entered competitive period.⁴

Six berths of 50,000 ton, as the second stage in Nansha port of Guangzhou, are expected to complete and put into operation in 2007. The specific goal of Guangzhou port is to produce the throughput of over 280 by 2010, and to build a

⁴ Nanshan, Dacha Gulf and Yantian are coastal regions in Shenzhen

world first-class modernized strong port into an overall rational arrangement structure.



Figure 3.1 Ports group of Zhujiang River Dealta

In the port construction plan of Shenzhen, Yantian port includes four 100,000-ton container berths planed to be finished in 2006. It is estimated by 2010, the container throughput of port in Yantian can reach 15 million TEU, and the handling capacity in Dachan port area will be 10 million TEU finally, twice more than the current capacity in Shenzhen.

In Zhuhai, a crude oil terminal project of 370 tons capacity is passing the assessment and planed to finish construction in next two years. Two container terminals of 50,000 tons will be an important component of Zhuhai Port. Zhuhai will also focus on the construction of three feeder port, Hongwan, Tangjiagang and Doumen.

The iron port of 200,000 tons in Zhanjiang and channel project of 25 tons are completed into operation formally, meanwhile, the first stage of the Baoman container terminal in Zhanjiang is even started formally.⁵

In building of regional ports, Huizhou is reluctant to show weakness. Infrastructure strategy planning from 2005 to 2015 is proposed. It strives to become one of the national main pivot ports. Meanwhile, Dongguan has already formed a certain scale of the container terminal. Two terminals of 30,000 tons in Shatian port go into operation formally, and it is estimated that the annual throughput can reach 3 million TEU after several years.

At present, every city wants to be a port city in Guangdong province, and nearly every one writes "build the pivot port, make the logistics centre" into its urban development plan, and the construction of ports is listed into the working plans of the regional government.

Cao Yuanzheng, an international chief economist of the Bank of China, points out that ports group in the Zhujiang River Delta are fighting with each other and developing separately, and there is the low-level repeated construction in the positioning of functional demands, but the construction of deepwater wharf is very limited. Miao Lixin, the director of modern logistics research center in QingHua University, speaks that the construction of ports must be set up on the basis of accurate budget of volume of goods transported at the port. At present, Zhujiang River centre focuses on exporting and processing industry, and its importing volume is large too, including the container and bulk cargo mainly. However, the prediction

⁵ Zhanjiang, Huzhou and Dongguan are in Guangdong province; Baoman is in Zhanjiang; Shatian is in Dongguan.

of volume of cargoes in this area is very rough, some regional governments start port construction project as soon as possible only considering the demand at the moment. The ocean shipping liners are intensive, but transportation in the inland sea is developed insufficiently.

Secondly, let us see the example of ports around the Bohai Gulf.

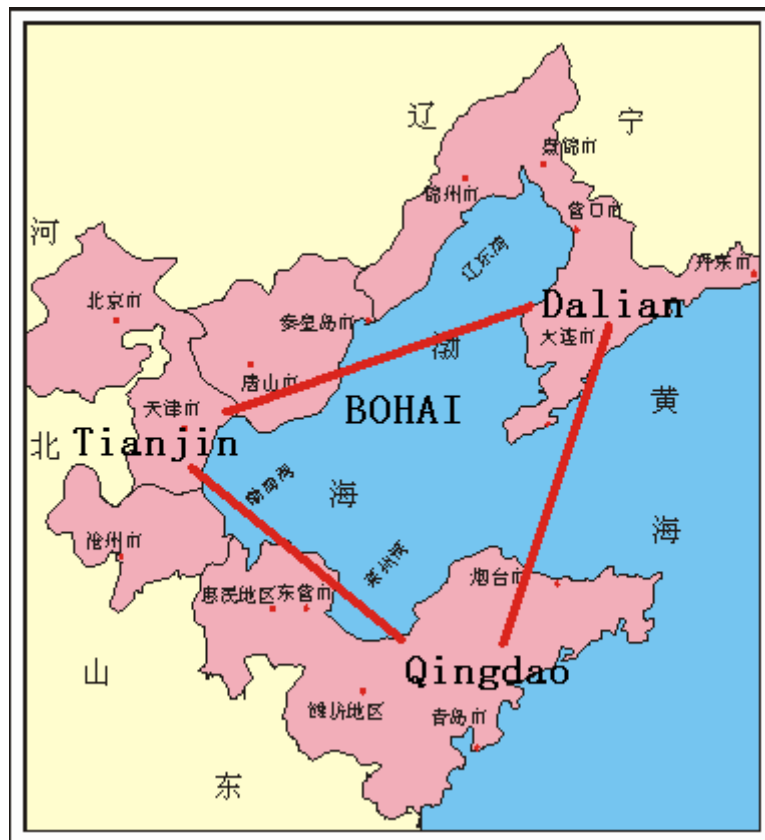


Figure 3.2 Ports group in Bohai Gulf

In the North, Tianjin, Qingdao and Dalian are competing for the position of the northern shipping center. Their investment in regional ports construction are

enormous in recent years, and in the future there will be a situation of the tripartite equilibrium. However, at present the utilization ratio of container terminals in Tinajin port is less than 70%. There will be newly-built terminals going to operation successively in 2006 at the same time, but the utilization ratio is still difficult to have obvious promotion in the following 3 years.

Consulting the opinions from an expert of the port investment, the estimated throughput of containers in these three ports in next several years is as follows.

Table 3.1 Estimated containers throughput of Bohai Gulf ports in the future⁶

Unit : TEU

YEAR	DALIAN	TIANJIN	QINGDAO
2006	2625647	4611104	6900070
2007	3027470	5319987	8063134
2008	3470345	6103194	9350845
2009	3956310	6964517	10769509
2010	4487401	7907049	12325416

However, objects of these three ports in their plans of construction are as follows.

Dalian

Invest 12 billion RMB to build another Dalian port, strive to reach 200 million tons in 2007, and reach 250 million tons in 2010, share of the quantity of consolidation and distribution containers in the national market should rise from 4% to 8% in 2010,

⁶ Data comes from the magazine of China Port

about 7 million - 10 million TEU.

Tianjin

Invest 27,300 million RMB to make Tianjin an international deepwater port in 2010, and confirm the segment goals in years of 2007 and 2010. Put forward the aim that the throughput of cargoes reaches 200 million tons, and the throughput of containers realizes 6,200,000 TEU. The throughput will reach 260 million tons in 2010, and the throughput of containers can reach 10 million TEU, dashing at the ranking of the world top ten.

Qingdao

Produce the handling capacity of 150 million tons and the container throughput of 8 million TEU one year. By 2010, the port throughput strives to reach 200 million ton, the container strives to be up to 10 million TEU.

⁷All the three ports decide the investment and the construction of the port in terms of their own defined capacity. According to the prediction of the real development trend, we can predict the supply and demand situation of port market in the future, and to judge whether the investment of the port is rational.

Compare the goal of the supply with the predicted value of the demand in three ports in the future.

⁷ Information comes from the five-year plan of economic development of the city

Table 3.2 Comparison the demand with the supply of Bohai Gulf ports in the future.

Unit: TEU

YEAR	DALIAN		TIANJIN		QINGDAO	
	goal	prediction	goal	prediction	goal	prediction
2010	8,000,000	4,490,000	10,000,000	7,910,000	10,000,000	12,330,000

The above data shows an existence of over-investment trend in ports group around the Bohai gulf. All the three ports regard building the northern container pivot port as one's own development goal, but there are differences in characteristics such as cargoes, natural conditions, software and hardware facilities and distance in the container development levels among the three ports. From the overall viewpoint, this kind way of building in ports group of the same area is inefficient. Functional positioning and building exist repeatedly, and resource has not been allocated rationally. After building container port according to this goal, functions of ports will be similar and overlap, and the utilization ratio of container berth will be low. It can produce a series of serious consequences such as excess supply of producing capacity, dispersing of containers resources and decentralization in investment, waste of resources and the malignant competition of price. At last it weakens the international competitiveness of the regional ports group.

At last, I will study it from the national viewpoint.

By 2010, the handling capacity of main container ports of our country has reached 140 million TEU, and it is 40 million TEU, more than 100 million TEU of planning of the Ministry of Traffic and Transportation. According experts' expectancy to the increase of foreign trade, the acceleration rate of container quantity is obviously

lower than the input speed of port ability, and in 2005, the problem of demand excess supply in the containers industry will be solved basically.⁸

Table 3.3 Comparison of predicted increasing throughput and real growth rate of containers

PORTS	Throughput in 2004 (10000TEU)	05-20 predicted increasing throughput (10000TEU)	Predicted annual growth rate(%)	05 factual annual growth rate(%)
DALIAN	220	620	31	25
TIANJIAN	480	600	18	15
QINGDAO	650	450	11	10
BOHAI GULF	1350	1670	17	15
SHANGHAI	835	1500	23	25
NINGBO	300	1140	37	35
YANGTZE RIVER DELTA	1135	2640	27	26
SHENZHEN	620	805	18	19
GUANGZHOU	420	420	15	10
ZHUJIAN RIVER DELTA	1040	1225	17	13
XIAMEN	370	460	18	16

⁸ Data come from the website of China shipping

The table above reflects obviously the situation of over-investment and abundant construction because the regional port prefer to pursue local interests. I try to find the main causes of excess investment trend and bring forward proper suggestion for ports' programming and building by analyzing the effect that the regional government on the port investment and by evaluating the proper size port investment according supply and demand. There are analyses qualitatively and quantitatively respectively.

The hot wind of building "international shipping centre" and "large international port" is worry. "coastal industry district", "processing district" and "logistics area" are spreading along the coastline of Gold Coast. Because the development of each port does not pay attention to its own characteristics, so the result is for attract investment to lower tax rate and price.

3.1.2 The analysis of the causes of waste of resources in regional ports

With the lowering of the port managerial power, the construction scale in the coastal port is upgraded suddenly. The grade of some port facilities has far gone beyond the planning and positioning of the port area. Projects of port are built repeatedly, and the similarity between the positioning of areas and dividing of work exists. Such questions as the supply of shipping capability excess the demand in the market, and thus price falls down, have already become the illness which has upset the market order of port and maritime industry. People worry about that unrealistically comparing port rising construction becomes showing the strength and the political achievements of regional government under the new situation. Professors in the

Central finance and economics university, and Chinese enterprise research center point out in the research paper about the port worriedly: Repeated construction not only wastes resources at the port, but also aggravate the malignant competition among regional ports further, even present the situation of frustrating and all injuring more.

Over-investment and repeated construction in ports are due to the regional port administration's pursuit of its own profit and the powerlessness of the central administration management.

Because there is an evident difference between the goal functions of the owners of state's assets and the administrators of the social economy, a common understanding to advocate the separation of Administrative Management and Investment and Financing Management has come into being. However, the former current temporary belonging is to the regional government because of lacking of definite guidance from correlative regulations, after the trade-off process between the central and the regional government. This result is only a short-term behavior to balance the interests between the central government and the regional government, due to its current lack of regulation, and it is not good for the whole society's long-term benefit. In theory, the central government's pursuit goal is distinguishing from that of the regional government. The priorities of the central government's pursuit are the macro economy and the sustainable development. While the regional government focuses more on the regional economic environment, the addition in job opportunities, the increase in regional revenue, the stabilization of the regional price. The regional government's goal cannot foresee its devotion to the promotion of the whole state's economy's stability and increase, though the final results of its actions can bring benefit to the realization of the macroeconomic goals. Ports, especially the

key ones, due to their relatively broad hinterlands, are not only connections between cities and the outside world in transportation, but also a center of material circulation and a window to overseas trade. Here, the definitions of “region” in administration and in economy are not the same. So the regional government at the port’s location cannot possibly give up its short-term regional goals to pour full efforts into the whole nation’s long-term sustainable development or establish a long-term regional economic environment. Moreover, ports’ resources are relatively limited in their shortness, so the parochialism of the regional government may lead to material wastes.

The current competitively repeated construction in port’s functions and layouts among some ports groups along the coast directly result in the overlap of port’ function, the waste of state assets and the furious competition in the supply of goods among them. The regional port administrative sections are hardly to harmonize inter-regional competition and the regional government, in consideration of its own profit, and may put more state assets and resources into this competition. This may make the competition more complex and thus do harm the whole state’s profit. In our country’s current system, because of the lack of reasonable evaluation system for the government, regional governments may easily carry out some short-term behaviors, which are shown in the basic construction, are political achievement programs, image programs and so on. In practice, in order to realize their immediate-term development planning and to finish their investment introduction goals, some regional governments overindulged some enterprises’ and groups’ requests, who asked to use the resources of ports and shores, changed the programming and examined programs at will, and did not respect and maintain the authority of programming, which led to repeated construction and unreasonable use of resources and brought bad effects on the whole nation’s profit.

The port is a basic industry, which support and lead to the development of national economy with large amount of investment but long period of recovery. Once investment is repeated, the port would suffer severe loss. At the present time, some planning and important developing goods of port terminal in port group are similar, by which the regional port is kept as the main terminal where the majority of material currents transferred. Those ports spend tens of billions on the improvement of functions, aiming to form port throughput of billion tons. As a result, there will be potential risk of repeated investment and construction. Next, port costal line resources are not regenerated, especially the large deep water lines are few in our country. The overrun competition of every port is bound to make unreasonable use of resources. Meanwhile the bad competition will be against the specialization, information industrialization and technical progress of ports, the allocation system of materials currents will be damaged, as well as the rule of survival of the fittest.

One of the most important causes of overrun competition is that the regional government plays an essential role in the competition since they have the power to control regional port themselves. The other one is the weak macro-control of port development from the central government. Therefore, the port resources should be reasonably allocated with a strengthened planning from regional government and a stronger macro-control from the central.

In addition, the usual problem of resources allocation is found in the poor capacity of port wharf. Although there is a lack of specialized deep-water berth, some planning of port construction is not available and the functions of inter-regional ports are similar. If the government simply consider about port construction design on the basis of maximizing regional benefit but ignore the development of other ones, it is possible to create problems such as overcapacity, low utilization ratio of berth and

idle assets when the wharf established, resulting in a new round of bad competition. Since the regional planning objective of port functions and throughput exceeds market demand, the investment on it tends to be excessive. The regional government and port offices should obey the market rule to set out more scientific and reasonable development planning, for example, they should organize specialists to lay plans, avoiding similar function setting, blind construction and excessive investment. A specialized organization also should be set up to coordinate the national problems among regions. The central government should establish a set of scientific and standardized examination of officers' records emphasizing economic development quality and social functions, by which the excessive investment caused by government can be reduced.

3.2 Suggestion on the problem of allocation of port resources

3.2.1 Suggestion of scientific planning of layout and construction in regional ports

According to the theory of market economy, macro-control should be tightened to give the port reasonable resource allocation on the premise of that the market should play a basic role. In this thesis, macro-control can be interpreted as scientific planning strengthened to the allocation for the port. On the other hand, port enterprises should cooperate to play their parts in the market. Let's look at the former first.

First of all, it is essential to coordinate regional economical development and allocation planning. The macro-control of port is needed in China. In matter of region, construction of port is optimized and reasonable, but in matter of the whole transportation system, it is on the contrary, by which the supporting service becomes an economic burden of country. In addition, there are three more contradictions including the contradiction between regional requirement of economic development and system optimization of port net, individual assertion and overall optimization, scaled supply and scattered demand.

There are several methods to solve these problems. First, it is needed to strengthen the macro-adjustment of port allocation planning which needs a set of reasonable evaluation system. Although the individual construction is regarded as optimized, the overall is opposite. The evaluation system should draw a comparison between the beneficial effect and national economy, including the comparison of side effect of the original facilities. Second, the evaluation system of port allocation should be constructed scientifically. Third, a national supervision introduced from review system abroad should be set up since the national development of port construction investment has different jurisdiction with the Improvements Committee and the Ministry of Communications. Forth, the input of national capital should be increased instead of wild investment. Fifth, capital cooperation should be enhanced to avoid blind construction among ports. Sixth, construction should be separated from business operation. Our country should learn from some overseas ports such as Singapore, Holland and Japan where the construction are leaded by the government and operated in the market. Seventh, the supervision of competition in the market should be established.

Port planning includes port layout and general planning. Port layout is the

distribution of the port area considering the National, provincial, Autonomous Region and municipalities layout requirements. General port general planning is specific planning for one period including the scope of the land and water and distribution of the area and port throughput volume. Ships' dimensions and cargo should influence the function of the port and the allocation of water and the shoreline. Port general planning also includes the allocation of the coastline, construction of the utilities, the allocation of construction land and the timing of the construction. General planning of the port should be suitable in accordance with the port layout.

The Central Government has issued the following policy for port planning: Port planning should be based on the requirements of domestic economy, social development and national defense and reasonable use of resources of the coastline. Planning should be systematic for the city. Port planning should not only coordinate with other city general planning for utilization of land and city general planning and the planning of river deltas, flood control, the distribution of ocean resources, the development of water transportation and other transportation development plans and other planning which is listed in statutory legislation and other administrative regulation. The draft for port planning should be approved by appropriate experts and its environment impact should be evaluated according to the law.

The Central Government also has related regulations for the valuable resources of the coastline and deepwater ports. The decision for constructing the port facility needs to consider the deepwater coastline of the port and the general planning should be approved by the Transportation Minister of the State Council and Economical Comprehensive Macro Regulation section. If the deep water coastline is not involved in the project, the port needs to get approval from the administration

section of the port. However, the projects which are approved by the Transportation Minister of the State Council and the Comprehensive Macro Regulation section do not need to go through the approval procedure a second time. The criteria for defining the coastline of deep-⁹water is issued by the Transportation Minister of State Council.

The following suggestions are for the regional port administration to assist in doing a good job in planning port operations:

- Improving the understanding of the advantages of a port; and identifying the key strategic resources of a port.

Modern ports attract and integrate production, modern industry and logistics which are the hub of global economy. As globalization advances, the active development of international transactions enhance the role of ports and the ports become more prominent. This enhancement provides the best opportunity to advance economic development. Development of the ports on the cutting edge should take into account deepwater coastlines and other features. The construction of wharfs, dry docks, industrial zones, logistic sections and administrative areas, planning must take into account the advantages of coastline resources. Port development must be a key strategic resource and a priority should be port's strength.

- The goal of enhancing the vigor and competitiveness of the port

The Bureaus which are in charge of port planning, coordination, service and executive oversight should concentrate on planning the port and the administration of the coastline. Traditional development strategy for regional ports which targets

⁹ China port law

regional business only and do not distribute responsibilities equitably should be broken up. Reorganization should be implemented to optimize the distribution of resources. Professionally planned distribution of resources would improve the efficiency of the harbor. Additionally, separate wharfs for containers, bulk loading, and piece cargo should be developed.

- Optimizing the layout of the port Expanding the development space of ports

In the past, the restrictiveness of the in-place administrative structures and other factors prevented general port planning from being harmonious with the general planning of the city. This resulted in the waste of the port's resources and lacked development potential. To solve this problem in planning the port's needs, one should combine the principle of coordination and reasonable planning when modifying the general planning of the city. One should improve and modify the development scheme of future ports based on the principle of the city planning enhanced port planning. The construction of a port should be suitable for the development of the city. Let the port planning become a part of the city general planning and coordinate the two by reasonably allocating the resources of the coastline anchorage (roads) and sea shore. The layout of storage, industrial areas, and logistics should be coordinated. Areas for future development which will give enough potential for further growth of the port and the port economy should be placed in reserve.

- Regional government should strengthen its supporting services for the port optimizing the environment for economic development

Regional government should cooperate with the construction of the port while

holding the belief that if the port prospers so will the city. The port and the city should be synergistic. Regional government should strengthen their supporting services for the port by optimizing the environment for economic development. The allocation of the shore and coastline by the regional government should also provide the port with favorable contract terms and lease rates without violating National policy. The regional government should support port related construction procedures to ensure smooth implementation of the projects and at the same time enhance port environment.¹⁰

3.2.2 Suggestion of integration of ports resources by cooperation among different regions

Because in the process of reform of management system of port, the regional port authority fails to understand the responsibility and the power lowered and the functional of own, and pursue doctrine mistake in the construction of regional port. Except define each side's power and responsibility through deepening the system reform, strengthening central macro adjustments and controls and making the scientific planning of port, the most important thing is to utilize strong strength of market to carry on the integration of the resources among regional ports. Because the resources allocation by market has weakness of blindness, spontaneity and lagging behind, so we still need the control of the system. It should combine the cooperative development of areas and the whole overall arrangement, concentrate on the resource advantage, and avoid the existing of both less investment and excessive investment.

¹⁰ The regulations and policies of governments are referenced.

The general thought of port resource integration is to realize the best allocation of the elements of the port by improving the whole competition ability and overall benefit; allocating the market and promoting the government; converting the property rights and upgrading the administration; constructing a international shipping centre; conducting strongly; implementing multiform of port resource integration; making a modern coastal port cluster come into being, which has reasonable layout, outstanding focal point, reciprocal advantages, and collaborative development.

The reform of international port control system tends to give power to regional port. Some current phenomena departing from the former intention is deviation in the process of reform, which should be remedied gradually. So it is not available to solve problem of excessive investment by damaging regional benefit or using concentration of power again. The pursuit of self-benefit of regional government should be allowed. A function of professional association can be produced by negotiation among regions to remedy the excessive investment. This negotiation is not a compulsory administrative restriction, but the central government should play a role in the communication among regional governments as intermediary. The factors influencing the result of negotiation also include number of participation regions, scattered extent, information communication, cost of supervising and controlling performance, power degree of regional government, etc. Therefore, a higher government or central government can clear the blockage in negotiation and promote communication among regions. As exchange and purchase can bring benefits to both parties, the rational parties are certain to have a deal. The nature of regional self-remedy mechanism is to facilitate integration of port resources and fully develop group advantages by penetrating limits of administrative regional division. The

cooperation of exchange and purchase among regions is no longer a simply contractual union under administrative coordination but an interregional cooperation realized by joint venture, share participation, equity control, share transfer and exchange, which is linked by assets. At this stage, the integration of port resources more often happens in the same administrative province.

At present, the shipping maximization of international shipping industry, strategic cooperation and inter-modal transportation grow vigorously. Face to the new developing trend of international shipping industry and the fierceness competition of domestic and international port, to seek one's own further development, the port must accord to the economic law of the market, break the administrative division of demarcation line, and take the road of coordinated development. The market system plays a decisive role of allocation of ports resources and it is helpful for macroscopic demand. It is the important content of managing system innovation of port too.¹¹ For example, plan to make up the organization similar to the shipping society in New York, New Jersey, Charleston, Hampton, Baltimore and Wilmington, 6 ports in the east coast of U.S.A. Under this organizational frame, all the ports will disclose the rate with the shipping company according to contract. They agree that it is always strict and secret information including relevant financial situations and port construction plans and they only can share with each other. They discuss rate and service content and so on together. The starting point of the setting up of the organization is to hope through the measures, such as information sharing, improving the service level and so on, to make the price war among the ports controlled, and relax the keen competition between each other.

In specifically, one or more port shipping groups which have unified property rights,

¹¹ A shipping society of ports in the northeast of the U.S.A

prominent function, comparable size and rich strength will be gradually and steadily developed by encouraging the linking of the assets of the port enterprises; cutting-in the project; realizing through joint venture and cooperation; actualizing compactness resource integration. One should make the best of foreign capital; actively introduce the resources and elements of foreign capital, technology, management, sea route and supply of goods; cooperate with surrounding ports and encourage the organizing of the large port enterprise group which has a profile of cross-industry, cross-proprietorship, trans-province and even multination. However, one should support and encourage the asset reorganizing, joint venture and cooperation of the industries of port, railway and highroad to integrate the resources of road and port, push the combination of road and port and promote the overall port comprehensive competition strength.

3.3 Case study of integration of ports resources in the area of Yangtze River Delta

Here I will introduce a successful case and recommend the way of cooperative development of ports group in the Yangtze River Delta area for reference.

a. Shanghai

Shanghai is aiming to build an international port. Now it concentrates on the building of a deep water port in Yangshan. This port project is estimated gross investment of 100 billion RMB, and in 2010, the handling capacity is planned to be up to 15 million TEU at least. There are five container berths of the first stage of the project to be open in 2006. Ships of 4000TEU and 8000TEU have entered the port

separately in trial voyage.¹²

In ports along the coastline of the Yangtze River Delta area, the development of Shanghai port has demonstration meaning, it is the reference of other ports and the competitive goal of other ports.



Figure 3.3 Ports group in Yangtze River Delta

Since the opening-up reform, Shanghai has established its position of hub port in China's Mainland with considerable development. Shanghai is the largest port city of China, and the city and the port interact with each other. The international shipping

¹² A deep-water port governed by Shanghai, but belongs to Zhejiang province geographically.

centre becomes the important component of the development strategy in the future of Shanghai, and it can strengthen the radiating and gathering functions, promote the position of international metropolis further dramatically.

b. Ningbo

After Shanghai developing the Yangshan port, there is no geographical space of deep water resources left for Ningbo in Zhejiang province. So, Ningbo, as ranking on the domestic top three, to compete with Shanghai, the inside integration will be accelerating. Zhejiang plans to combine Zhoushan and Ningbo into an organic whole within three years, and make Ningbo and Zhoushan ports become the largest port biggest port in the future.



Figure 3.4 Ports group of Ningbo and Zhoushan

Two ports merger to face the problem of Yangshan port and avoid resources conflicts. Zhejiang province uses the administration means to guarantee the control on coastal line resource of deep water. Ningbo possesses good natural conditions of deep water; and Zhoushan port near Ningbo has abundant coastline resource and can remedy the deficiency of Ningbo in the next development step.

To cooperate with the integration of two ports, it develops Jintang and Liuheng islands as priority, where owns abundant water front resource, give priority to containerized transportation and bulk cargo tranship, advance the port industry in a cost-effective manner, and participate into the competition of the world with the unified brand of "port of Zhoushan and Ningbo".

Ningbo owns the large-scale and super-huge deep-water berths most in the mainland, and it can offer the loading and unloading service all over, and have multi-levels customer groups. Especially in recent years, production and construction move forward steadily, and it promote further in international and domestic position. This is the most basic advantage of competition in the port group of Ningbo and Zhoushan.

c. Jiangsu province

Suzhou is seeking for integration with near ports and preparing to combine Zhangjiagang port, Taicang port and Changshu port to develop a strategy called "Vast Suzhou". The condition of depth of water of the port of Suzhou is quite good, there is gold water line of 800 kilometers, the line is not separated and the hinterland is sufficient.

The throughput in Suzhou reaches 85,510,000 tons by increasing 33% growth rate in

a half of the year, and the throughput in Taicang reaches 9,630,000 tons by increasing 21% in the same period.

Changshu port finishes the throughput of 61,700,000 tons by increasing 39%, and the throughput of containers in Suzhou port is 520,000 TEU, by 40% increasing rate.

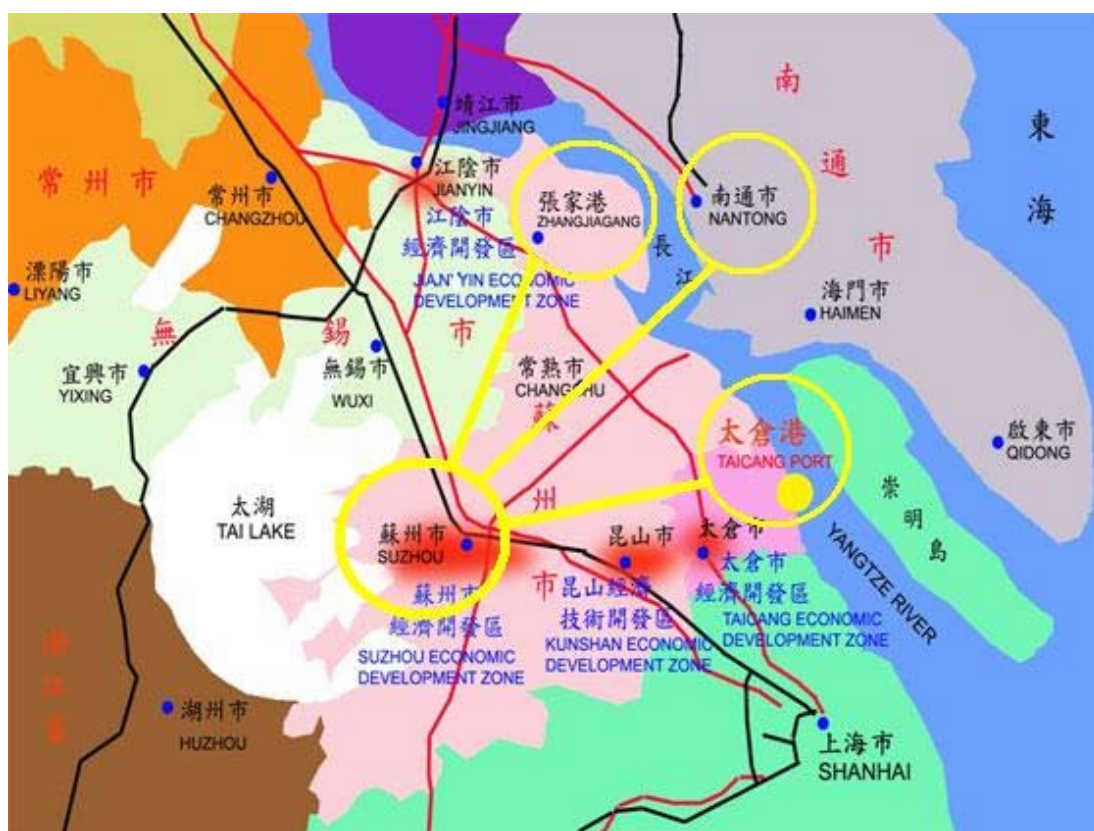


Figure 3.5 Ports group in Jiangsu province

The good performance gives the port construction of Jiangsu province confidence, and 126 entities agree to be a united organization, including port enterprises, economic development districts, low tax areas, logistics campus, and port administrative management bureau. They are cooperating to avoid fighting with each

other and adjust the distribution of resources. The port alliance of Jiangsu will make overall planning in the future, confirm the function of port, build influent information and high-efficient modern logistics industry, and pursue the fast and convenient mode of clearing customs.

After studying the internal cooperation in the ports group, I will study the external cooperation among ports groups, and this is the most important approach of integration of ports resources.

There are about 3800 kilometers continent coastlines around Shanghai, Jiangsu and Zhejiang province. The coastline is about 5500 kilometers long and the Yangtze River bank line below Nanjing nearly 820 kilometers. There are abundant resources in the deep-water ports along the sea and riverbank line. The ports with a long history take geographical advantages to develop water transportation. ¹³

In 2005, there are 1197 productive berths with capacity over thousands of tons in the coastal port in Yangtze River Delta. There is a throughput capability of 1.2 billion tons in which container throughput is 22.1 million TEU. The total throughput is of 1.39 billion tons in which the container one is of 26.7 million TEU, the import of crude oil of 53.36 million tons and the import of iron ore of 95.27 million tons. During the process of economic globalization, the ports in Yangtze River Delta has become an important strategic resource for the Yangtze River Delta to participate in the global economic cooperation and competition, which plays a more and more important role in the regional economic development.

The problems of ports group happened before the resource integration are listed below.

¹³ Date comes from a development report of Yangtze River Delta

- The port has a poor throughput capability with acute structural contradiction. There exists imbalance in the import and export of iron ore at Shanghai Port, as well as overstocking of iron ore export at Ningbo Port.
- The intensive use of coastal line is poor. Some port coastal line lands are occupied by industries or cities, resulting in insufficient use of resources. Large enterprises increasingly tend to take the coastal line resources. Some ports' construction disobeys former design and destructs the resources. The utilization of coastal line resources is lack of comprehensive planning, which causes the problem that many parts have the power to control ports coastal line. There also exists a problem in the use of coastal line to construct the wharf with industrial project supporting.

Geographically, Shanghai cannot establish its position as an international navigation itself without assistance from Jiangsu and Zhejiang province. The three places should specify their functions on the basis of their market location and compete in the spirit of cooperation and tripartite benefit. Their competition is totally market behavior. The resource allocation will be optimized following the equal competition. The regional sustainable development and central competition will be enhanced by the macro planning and control policy that avoid reconstruction. The central planning can work with regional market to push regional cooperation and realize multidirectional economic benefit.

With the coordination of the Ministry of Traffic and Transportation, Shanghai integration of ports office was established to plan and coordinate the development of ports in Yangtze River Delta, especially in Jiangsu, Zhejiang and Shanghai. It aims at integrating port resources in the three regions, taking complementary advantages and realizing multidirectional benefit. Fostered by the economic integration trends in Yangtze River Delta, The outline of planning modern traffic and transportation structure in Yangtze River Delta area is formally debut. It is the first outline of planning traffic and transportation structure in our country. The key of the outline is

to form Shanghai international navigation center for container transportation system, which locates Shanghai as a center with the Ningbo port, Suzhou port and ports below Nanjing region as supporters. A transfer system for large bulk goods from ocean to inland river has been established by taking use of resources along Ningbo and Zhoushan deep-water bank line and down the Yangtze River line.¹⁴

A strategic planning known as two areas supporting the mainly one is executed which realizes interior resource integration and exterior optimized allocation in port group in Yangtze River Delta.

It is necessary to strengthen coordination and development among ports and port with cities, avoiding inferior reconstruction. The market should play its basic role in the resource allocation to effectively utilize and protect coastal resources. Multi-economic components from different industries and regions should be encouraged to participate in port construction, by which the Yangtze River Delta can be intensively maximized and the competition of port enterprises be strengthened. As a result, Yangtze River Delta will realize the sustainable development strategy.

The direction of integration of coastal line resources in Yangtze River Delta is as follows.

A basic structure of Yangtze River Delta comprehensive transportation channel with seven national transportation terminals including Shanghai, Nanjing, Hangzhou, Ningbo, Wenzhou, Xuzhou and Lianyungang should be established.

The coastal port planning in the comprehensive transportation program is as below.

The resource integration and layout coordination should take international navigation market as direction, and emphasize the shipping of container, iron ore, rude oil and

¹⁴ A cooperative consultant organization make up of Shanghai, Zhejiang, and Jiangsu..

coal, by which a perfect intensive transportation system will be formed and a highly specialized port district with large scale and multi-functions will be established.

——The port layout can be designed according to the levels such as major ports, regional major ports and general ports. The major ports include Shanghai, ¹⁵Lianyungang, Ningbo, Zhoushan, Wenzhou, Nanjing, Zhenjiang, Nantong and Suzhou port. The regional major ports include Jiangyin, Yangzhou, Jiangxing and Taizhou port. The others are general ports.

——The object is to establish Shanghai international navigation center. A container transportation system including a trunk line and other branches should be prioritized. The container trunk line port takes Shanghai as center and Ningbo and Suzhou as supporters. The branches include Lianyungang, Nantong, Nanjing, Zhenjiang and Wenzhou. Meanwhile there are other ports should be developed to provide transportation.

——A transfer base for iron ore import should be set up by taking advantages of large specialized wharf of over 200 thousand tons in Ningbo and Zhoushan. Shanghai, Suzhou and Nantong port act as transfer ports to accept large direct ship and transship and land cargo. Zhenjiang and Nanjing ports are transfer ports for landing transship. All these ports form a transfer transportation system for import iron ore from sea to river.

——Coal are directly transported to coastal or river side industries such as power plant or sufferance wharf by ships of capacity of over 50 thousand tons. Wharfs in Ningbo, Zhoushan, Shanghai and Zhenjiang are transfer ports to transport coal for Yangtze River Delta and coastal regions.

¹⁵ Lianyungang, Nanjing, Zhenjiang, Nantong, Suzhou, Yangzhou, Changshu, Taicang and Jiangyin are in Jiangsu province; Ningbo, Zhoushan, Beilun, Jiangxin and Wenzhou are in Zhejiang province.

——Import crude oil can be landed on the large wharf in Ningbo and Zhoushan ports. The oil is always supplied for coastal and river side refineries through pipeline transportation, and sometimes by water. Large crude oil land wharf such as Ningbo Beilun, Daxie, Zhoushan Aoshan and Cezi are not only transfers for oil from East China, but also the main part of national strategic oil reservation base. Nanjing port still work as transfer port to transfer to refineries in the middle or upper river through water or pipeline transportation.

The key is the container transportation system in Shanghai international navigation center. It is estimated that the container throughput in Yangtze River Delta ports will arrive at 48 million TEU in 2010. The main construction objects include Shanghai Yangshan project of Second, third and fourth stage, the fifth and sixth container wharf construction, and the rebuilding of ports in Zhanghuabang, Jungong Road and Baoshan. In 2010, the container transportation system in Shanghai international navigation center will be more perfect. Shanghai port will exceed other ports and the total container throughput in Yangtze River Delta ports will arrive at over 53 million TEU.

The Beilun project of fourth and fifth stage in Ningbo port will be constructed. The container wharf project in Daxie, Jintang and Meishan will be exercised. The reform for Beilun container wharf of second stage will be carried on.

The construction for Taicang port region project of second and third stage in Suzhou port will be implemented, by which the first stage project can be specialized. The construction for Miaoling container wharf project of third stage in Lianyungang port will be carried on. The container wharf project of first stage in Dadi port will be initialized. The branch container wharf project of fourth and sixth stage will be carried on. The construction for Nantong of first stage and Tonghai of first and

second stage will be implemented. The Zhenjiang port construction of third and fourth stage will be executed.¹⁶

Because the actual conditions of the regional port of our country are different, modes of integration of ports resources presents diversified characteristics. For example in Suzhou, the strategic alliance of unifying three ports advance the rational division of work in three harbors of Zhangjiagang, Changshu, and Taicang. Take another example of the integration of ports in Ningbo and Zhoushan. On the basis of unified planning, adjust the function of the existing dock berth and overall arrangement, and optimize the functional structure and the layout of regional ports, further. According to the inherent laws of the market economy and the development of coastal line resource, develop the port projects together, thus achieve the purpose of development orderly and selecting port resources rationally.

¹⁶ Information comes from a consultant document by the office of economic development planning in Shanghai

4. Conclusion

In this paper, I pay attention to regional ports of China in the process of rapid development. Nowadays, ports in China are changing greatly from managerial modes to developing approaches. In this changing environment, some new problems can not be avoided.

Compared with the development of international ports industry, domestic ports has learnt something, but even found something different to innovate.

In order to make ports industry of China involved into the world market, China started the port management system reform. After several years, the constraint of traditional managerial mode is removed. The managerial power is lowered to the regional government but under the supervising of the central government, and the administrative affairs of the port are managed by regional government or the regional port authority, and the operational affairs are managed by the regional port enterprise. It seems that the regional government owns more power and responsibilities and obtains positive attitude.

However, the responsibilities and functions between all kinds of management department are not divided clearly, so some regional ports are leaded and conducted

by more than one management department. It results to confusion of managements and impacts the efficiency of operations in regional ports. I have analyzed three kinds of conflicts of this issue.

In addition, for traditional managerial approach, the management capacity and idea of regions are limited. Without the control from the central government, the regional port only pursues for the regional interests and develops blindly. There is no scientific planning and a lot of problems appear, such as excess investment, abundant construction, and unreasonable allocation of port resources.

I give some factual examples of problems and successful trying, compare the foreign modes and domestic ways, study causes in theory, and propose some suggestions to solve these problems.

The conclusion is as follows,

- Divide responsibilities and distribute power among the centre government, the regional government, the regional port administration bureau and the regional port enterprise. Functions can be separated clearly and ranked in levels.
- Improve the port management innovation to take the enthusiasm of the regional port authority and cultivate its capability of managing modern ports.
- Strengthen the macro adjustments and controls from the central government. Make an overall and scientific planning of the layout and ports' construction.

- Under the planning and controlling, the regional should check its works. Avoid short-term behaviors such as abundant construction and excess investment, and don not waste port resources.

- In order to use port resources better, different regions can cooperate with each other. The integration of port resources between regional ports by the way of both administrative and market functions can achieve the most efficient and effective allocation of national ports resources.

Nowadays, ports in China are in the fierce competition. Each port should utilize limited port resources sufficiently, make scientific plans, and promote the port management system reform, so ports in China can improve the efficiency of management and operation, and entry the international ports system as soon as possible.

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