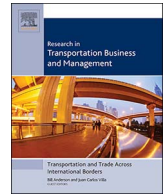




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## Analysis of the case of port co-operation and integration in Liaoning (China)

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### ABSTRACT

The current port governance system in China has produced the outstanding pattern of “one port – one city”, which raises the port-cities' enthusiasm in developing their local ports but leads to the serious problem of duplication of similar port projects meanwhile. Consequently, an internecine situation where ports compete with each other fiercely to scramble for more cargoes in the same hinterland is quite common in China. With the slowdown of China's economic growth, the adverse effects resulted by the oversupply of port resources has been even more prominent. Therefore, the necessity of port cooperation and integration has been realized and more attention has been paid to the ways of port cooperation and integration. This paper focuses on the whole process of port cooperation and integration in Liaoning (one of the typical provinces with the fierce port competition in China) to illustrate the motivation and ways of the integration and the corresponding effects. Moreover, the rationality and problems of the way of the cooperation and specialization proposed by the provincial government in terms of systematic optimization is also analyzed. An integration and cooperation scheme, which may realize a systematic optimization of shipping pattern, is also proposed.

### 1. Introduction

The rapid growth of China's economy in recent decades has created an unprecedented “golden period” for China's ports. Extraordinary progress has been made in China's port system, such as the competitive terminal infrastructure and inland intermodal network, let alone the astonishing cargo handling capacity and efficiency. Up to now, the throughput of China's ports has made up a relatively significant share of the world's, and among the newly published rankings of the world's top ten container ports, seven seats are occupied by China's. However, when it comes to the rankings of global port operators, interestingly, none of the giant “Port Groups” in China which deal with the operation and management of the so-called world's top ports are able to be shortlisted.

According to the views of many critics, one of the most important reasons for this phenomenon lies in the governance pattern of “one port - one city” resulted by the current port governance system in China. Specifically, such governance pattern is formed because the port related activities including the port planning, port construction, port operation and port management, are generally carried out within the administrative area of the city where the port is located. Among the port related activities, the port planning is conducted by the local port authority

which is one of the local government agencies, while the operation and management of port services, as well as the port construction, is in the charge of the local port enterprise which is supervised by the local port authority (Cullinane & Wang, 2006; Notteboom & Yang, 2017; Wang, Ng, & Olivier, 2004; Wu, Li, Shi, et al., 2016).

The governance pattern of “one port - one city” used to help stimulate the port-city's interest and willingness in developing its port. However, with the port development, many problems caused by such governance pattern came to light. Since the port development has an important effect on local economy, the local government is very concerned with its port development and used to spare no efforts to vigorously expand the port. Consequently, the duplication of similar port projects is incurred. It has become quite common that several port terminals similar in size and function are densely located along the coastline usually not very long. These ports compete with each other fiercely to scramble for more cargoes in the same hinterland. It has led to an internecine situation which seriously restricts the transformation of the advantages of port resources into the economic superiority. In addition, with the slowdown of China's economic growth, the adverse effects resulted by the oversupply of port resources has been even more prominent. Therefore, the necessity of port cooperation and integration has been realized and more and more attention has been paid to the

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ways of port cooperation and integration (Lam, Ng, & Fu, 2013; Song & Panayides, 2008).

In order to have a general understanding of the port cooperation and integration in China, this paper focuses on a typical coastal province, i.e. Liaoning, one of the coastal regions with the most fierce port competition. In this paper, the whole process of the integration, cooperation or combination of ports in Liaoning is analyzed to illustrate the motivation and ways of the integration and the corresponding effects. Moreover, the rationality and problems of the way of the cooperation and specialization proposed by the provincial government in terms of systematic optimization is also analyzed. An integration and cooperation scheme, which may realize a systematic optimization of shipping pattern, is proposed further.

The remainder of this paper is organized as follows. Firstly, the development of port cluster in Liaoning in recent decades is introduced. Secondly, a more detailed description on the growth of the two key ports (namely gateway ports) is offered. The competition between the two ports and the corresponding effects are then analyzed. Finally, the whole process of port integration in Liaoning is summarized and studied, and an integration scheme is also suggested.

## 2. Port cluster in Liaoning

### 2.1. Port locations

Bordering on the Bohai Sea and Yellow Sea, Liaoning Province has the coastline of more than two thousand kilometers. After over twenty years of development, a port cluster consisting of two key ports (i.e. Dalian Port and Yingkou Port) and four secondary ports (Jinzhou Port, Dandong Port, Panjin Port, and Huludao Port) has been formed in Liaoning. The port cluster mainly serves for the three provinces in Northeastern China (i.e. Liaoning, Jilin, Heilongjiang) and part of Eastern Inner Mongolia. More than 85% of foreign trade products in the hinterland go through the port cluster in Liaoning via marine transportation. The locations of the port cluster and the corresponding hinterland are shown in Fig. 1.

Located in the center of Northeast Asia, Dalian Port benefits greatly from its outstanding geographical advantage as well as its superior natural condition, and thus becomes the well-established leader port in Liaoning and one of the major shipping centers of Northeast Asia alike. Developed later than Dalian, Yingkou Port becomes the second key port

in Liaoning even though the estuary location does not endow Yingkou the competence in natural condition. Yingkou's remarkable growth mainly attributes to its unrivalled superiority, compared with other ports in the Northeast, in the shorter land distance between the hinterland cities and the port.

Compared with the two key ports, the four secondary ports have relatively small sizes and mainly act as the feeders of the two key ports. Among the secondary ports, Dandong and Jinzhou are two larger ones with important geographical positions, one locating in the east and adjacent to Dalian while one locating in the west and adjacent to Yingkou. Another two secondary ports, Panjin and Huludao have smaller sizes but still have great development potential.

### 2.2. Port throughputs

In 2015, the throughput of the port cluster has reached 1.05 billion tons, and among others the container throughput has approached 18.4 million TEUs.

The throughputs of the two key ports are shown in Fig. 2. The total throughput of Dalian generally presents an increasing trend except for a slight decrease in 2015. The growth rate is maintained at double digit for most years with the maximum reaching 36.3%, and the average approaches 12.5%. Influenced by the macroeconomic situation, the growth rate has declined in recent several years though. The container throughput of Dalian demonstrates similar characteristics. The average growth rate reaches 16.5%, but in 2015 the container throughput has declined to 9.45 million TEUs, a decrease of 6.7% compared with that in 2014. On the contrary, the throughput of Yingkou maintains an average growth rate of 20.5% since 2000, with the maximum reaching 49.1%. The economic situation in recent years is not that prosperous, but Yingkou Port has still kept the growth rate of more than 2.5%. The container throughput of Yingkou presents similar characteristics. The average growth rate reaches 26.2%, and the maximum even reaches 48.5%. The container throughput in 2015 has climbed to 5.92 million TEUs, an increase of 5.5% compared with that in 2014.

Besides the two key ports, the four secondary ports have also obtained rapid development. The throughputs of the secondary ports are shown in Fig. 3. Among the four secondary ports, Dandong is the fastest growing port. The throughput of Dandong has climbed from 4.86 million tons in 2000 to 150.4 million tons in 2015 with an average growth rate of 25.7%. With an average annual investment of 10.9 billion RMB

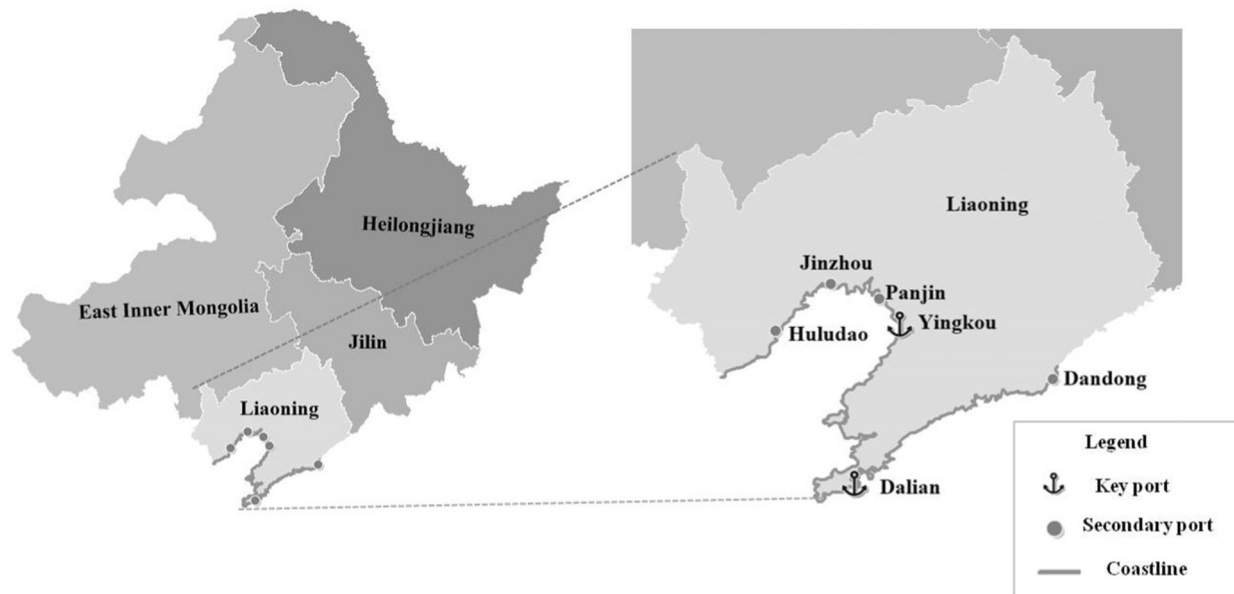


Fig. 1. Location of the port cluster in Liaoning and the hinterland.

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