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The effect of new western land-sea corridor on ports in East China (a case study of Shanghai port)

Yixin Liu

SHANGHAI MARITIME UNIVERSITY

WORLD MARITIME UNIVERSITY

Shanghai, China

The Effect of New Western Land-Sea Corridor on Ports in East China (A Case Study of Shanghai Port)

By

Liu Yixin

China

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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 dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature): …Liu Yixin……

(Date): …07.05.2021……

Supervised by

Professor Yin Ming

Shanghai Maritime University

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ABSTRACT

As China's economic and trade cooperation with ASEAN is getting closer, the location advantage of the New Western Land-Sea Corridor adjacent to Southeast Asia has begun to become prominent, and it has become an important land-sea linkage channel in China's opening up pattern. The dissertation will show the development and the current situation of the New Western Land-Sea Corridor. Then the dissertation uses the Exponential Smoothing Forecasting Model to give a projection of the cargo throughput of the Beibu Gulf Port, the important large port of the New Western Land-Sea Corridor to show the strong development of the New Western Land-Sea Corridor.

Under this background, large ports in East China are affected partly. Setting Shanghai Port as an example, the dissertation will analyze the situation of the port from different aspects. The goods that used to go through Shanghai Port in East China by the Yangtze River may go through New Western Land-Sea Corridor instead. The influence of Shanghai Port may also be affected. Facing this situation, ports in East China have to take action and respond positively.

KEYWORDS: New Western Land-Sea Corridor, Shanghai Port, East China, Cargo throughput

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Chapter 1 Introduction

1.1 Research background

In November 2014, Singapore Prime Minister Lee Hsien Loong visited China and expressed his intention to actively participate in China's Western Development. It was a new land-sea trade channel jointly built by China's western provinces and Singapore based on the framework of the China-Singapore (Chongqing) Demonstration Initiative on Strategic Connectivity.

In November 2018, China and Singapore signed an agreement to officially rename the ‘Southern Corridor’ as the ‘New Western Land-Sea Corridor’. The scope of cooperation under the ‘New Western Land-Sea Corridor’ has been extended to nine provinces, autonomous regions and municipalities of China, including Chongqing, Guangxi, Guizhou, Gansu, Qinghai, Xinjiang, Yunnan, Ningxia and Shanxi.

From January to September in 2019, the cargo throughput growth rate of Beibu Gulf Port ranked third among China's coastal ports, and the container volume growth rate ranked first.

By the end of September 2019, the three logistics organizations of the New Western Land-Sea Corridor which are Rail and Sea Transport, Cross-border Highway and Cross-border Railway, had all be put in operation.

In 2020, under the heavy pressure of the epidemic, the channel economy still showed good development. According to the data of the end of December, the container throughput of Beibu Gulf Port had exceeded 5 million TEU, up 14.84% year on year.

The "New Western Land-Sea Corridor" has been connected with the China-Europe Railway Express and the Golden Waterway along the Yangtze River, and has been initially connected with the Silk Road Economic Belt and the 21st Century Maritime Silk Road. As one of the strategies of China, the New Western Land-Sea Corridor will continue to develop.

East China ports area is another big port area in China besides Shenzhen Port and Guangzhou Port in south ports area. It includes Shanghai Port, Ningbo Zhoushan Port, Lianyungang Port, Taizhou Port, Jiaxing Port and so on. Shanghai Port, Ningbo Zhoushan Port and Suzhou Port are in the top 20 of cargo throughput of global ports in 2019. Shanghai Port and Ningbo Zhoushan Port are in the top 20 of containers throughput of global ports in 2019.

Shanghai Port is the largest port in this area. By the end of 2016, Shanghai Port has established container cargo trade with more than 500 ports in 214 countries and regions around the world, and has more than 80 international routes. In 2018, the cargo throughput of Shanghai Port ranked second in the world.

1.2 Research purpose

The development of New Western Land-Sea Corridor in western China has opened up a new road for China's logistics. But at the same time, it has caused a certain impact on the ports in other region, for example, the ports in East China. How should the ports of East China such as Shanghai Port do under this background is a question for these ports.

This study will present an analysis of New Western Land-Sea Corridor and make a forecast of the cargo throughput of the Beibu Gulf Port. Then setting Shanghai Port as an example, the study will analyze it in four perspectives of strengths, weakness, opportunities, threatens. At the end the dissertation will provide relevant suggestions, so as to provide reference for the development of East China ports under the background of the New Western Land-Sea Corridor.

1.3 Research methodology

The quadratic exponential smoothing method has not only the advantages of simple calculation operation, easy understanding, and less original data required, but also eliminates other contingency factors while improving the accuracy of model prediction. The research will collect historical data of cargo throughput of a port of New Western Land-Sea Corridor and make a prediction of its future volume.

Chapter 2 Literature Review

2.1 Research about new western land-sea corridor

From the article of CHINA RAILWAY (2021), we can know that in 2020, 4,596 freight trains were put into service on the new western land-sea corridor increased by 104.9% year-on-year. In order to guarantee and serve the construction of the new western land-sea corridor in an all-round way, railway departments have vigorously promoted port infrastructure interconnection.

President of Beibu Gulf Port Wei Tao (2021) has planned during the 14th Five-Year Plan period, Beibu Gulf Port will continue to speed up the pace of construction of a

world-class port, make every effort to build the Beibu Gulf as the international gateway port of the western land and sea, and build a smart, safe and green world port with first-class facilities, technology, management and service. About 32 billion yuan will be invested to build a large number of port infrastructure, including 300,000-ton bulk cargo terminals and 200,000-ton automated container terminals, to improve the collection and distribution system.

2.2 Research about port in East China

Based on the theory of complex network, Guan Xiaoguang, Li Zhenfu, Li Xiaoying (2020) evaluates the status of Chinese container ports in the global liner transport network from the perspective of network structure factors, location factors and economic factors that affect port status, and draw the conclusion that Chinese container ports with high comprehensive status (Shanghai Port, Hong Kong Port and Ningbo Zhoushan Port) have a prominent topological position in the global liner transportation network. But there is still a big gap between them and Rotterdam Port and Antwerp Port, which rank high in comprehensive center degree.

KangYizhi, He Dan, Gao Peng and Sun Zhijing (2021) found that Ningbo port gets the hinterland that originally belongs to Shanghai port, and expanded its owe hinterland in Zhejiang province.

To enhance the influence the importance of Ningbo port, He Jianying (2021) suggested in three aspects which are strengthening the hardware, enhancing the software impact and actively joining in the regional port cooperation and development with the concept of ‘mutual benefit and win-win’.

In the Research on the Function of Ningbo-Zhoushan Port to Shanghai International Shipping Center (2020) authors found the promoting effect of Ningbo Zhoushan port on the construction of Shanghai international shipping center. It helps Shanghai port to build an information platform for international trade, promote the improvement of the shipping talent training system, help identify secondary areas of economic growth and enhance port services to irradiated areas.

Li Bo, Wang Ziyue, Han Zenglin (2016) study about the main port of the Yangtze River comprehensive competitiveness in terms of natural conditions, infrastructure, production conditions, policy support, economic environment and 11 single indicators. They build a comprehensive evaluation index system of port competitiveness using the entropy weight method and TOPSIS method. From the comprehensive evaluation results, Ningbo-Zhoushan Port is the second of the top five ports following Shanghai which means its competitiveness is strong.

In the research of Yao and Tan (2020), DEA-Malmquist model is established to measure the comprehensive efficiency value of Shanghai port logistics and the full factor productivity, combining the static efficiency and dynamic efficiency values, to make a concrete analysis of the logistics efficiency of Shanghai Port in recent years. The results show that although the efficiency of Shanghai Port logistics has been increasing continuously in recent years, the comprehensive technical efficiency value of Shanghai Port before 2017 is all less than 1, which has not reached the effective state of DEA, and the dynamic efficiency value of Shanghai Port is not very stable or even decreased.

Shen (2019) in his research has pointed out the situation that the growth rate of Yangtze River branch line business of Shanghai Port has slowed down and the growth

momentum appeared weak. He suggested in several points in enhancing the service and efficiency of Shanghai port, improving comprehensive collection and distribution capacity and building a mechanism for sharing shipping information among Yangtze River ports.

2.3 Research about types of forecasting method of cargo throughput

Zhu (2010) in his report has introduced three types of Time series prediction method, causal forecasting method and combination forecasting. Zhu comes up with the idea that because of the characteristics of the shipping itself, it is necessary to pay attention to the scope and conditions they are applicable to when predicting the throughput by the above three types of methods.

The research Forecast of Ningbo-Zhoushan Port's (2012) obtained the data of total port cargo and foreign trade cargo throughput of Ningbo-Zhoushan Port from January 2004 to July 2011. These data sets are divided into training and testing sets by utilizing ARIMA model, fractal prediction, neural network and support vector machine respectively. The results show that satisfactory forecast of cargo throughput have been given by the four forecasts.

Analysis of Ningbo Zhoushan Port's Cargo Throughput Forecast (2018) applied the three-exponential smoothing method to forecast the cargo throughput in the next 5 years. The report introuduced that the single exponential smoothing is usually used when the change of the time series of the data is smooth. Double exponential smoothing method is for data with obvious rising or decreasing trend. Triple smoothing method is suitable for time series changes in the way of quadratic curves.

Chapter 3 Analysis of New Western Land-Sea Corridor

3.1 The development process

3.1.1 The initiation

On November 7th, 2015, China and Singapore set up the cooperation project of The China-Singapore (Chongqing) Demonstration Initiative on Strategic Connectivity (CCI). This is the third intergovernmental cooperation project between China and Singapore. The project is centered in Chongqing which is a main and big province in West China. The project is aim to enhance the connectivity between West China and Southeast Asia, focusing on the four areas of financial services, aviation, transport and logistics, information and communications technology. CCI improve the connectivity of West China and improve the ability of external opening up and development. In terms of the logistics channels, West China had achieved a breakthrough in northward and eastward transportation, bur the southward route for export still lagged behind because of the long distance, time-consuming and low logistics efficiency. This would weaken the competitive advantage of the CCI project so it was imperative to build an efficient and convenient land-sea route to the south.

3.1.2 Concept and implementation of southward corridor

Under the frame of CCI, Chongqing government organized a delegation to take the initiative to integrate with Singapore’s business and political administration regarding the four areas of the China-Singapore cooperation project. The two sides reached a preliminary agreement on the project of the cooperation of constructing the Singapore Seaport and Chongqing Railway Port. In May 2016, Singapore, Chongqing province and Guangxi province set up a working group of the establishment of the "Chongqing-Guangxi-Singapore" sea-rail combined transport project, and put forward the idea of

promoting the construction of the southward corridor. In February 2017, the first meeting of CCI joint council was held in Beijing. During the meeting, China and Singapore had a deep-going discussion on the construction of a southward sea and land corridor. The route 'Chongqing-Guangxi Channel' with the railway connection is only 1450 kilometers long and the transportation only costs 2 days totally. Compared with the traditional shipping route, the distance is reduced by about 1000 kilometers and the time is shortened by 12 days. This greatly saves the distance and time cost. Therefore, the idea has been responded by Guangxi province, Chongqing province, Sichuan province, Gansu province and other parts of West China. In August, Chongqing, Guangxi, Guizhou and Gansu signed a framework agreement on jointly building the southward corridor and reached a high consensus on the coordinated exploration of the construction of the Corridor. This is the first time that the four western regions working together to build the southward corridor. This agreement opened up the cooperation between domestic and foreign governments in the construction of the corridor. In September 2017, with the first departure of the 'Chongqing, Guizhou, Guangxi and Singapore Railway Express', the southward corridor officially started its two-way operation. In January 2018, China included the southward corridor into the 'One Belt And One Road' project and CCI framework to focus on supporting the operation of the channel. The move was to promote the operation of both sides of China and Singapore and the importance of the new land-sea corridor has seized more recognition and attention. With the participation of Qinghai province and Xinjiang province into the construction of the southward corridor later in 2018, the scope of the cooperation has been further expanded.

3.1.3 New international land and sea trade channel

In November 2018, China and Singapore signed the New International Land-Sea Trade

Corridor memo of understanding and officially renamed the corridor from ‘southward corridor’ to ‘New International Land-Sea Trade Corridor’ for deepening opening-up of western region of China and expanding new trade space. In August 2019, in order to fully implement the decisions and arrangements of the government and seize this opportunity, China released an overall plan about the country's new western land-sea corridor. Setting the vast hinterland of western China as the main axis, the plan outlines the construction of the corridor. It clarifies the strategic positioning, spatial layout and development objectives of the construction, and also accelerates the process of western regions participating in the construction of the corridor.

The corridor is a strategic corridor to bring about a new western development for China. It connects to the Silk Road Economic Belt in the north, the 21st Century Mairtime Silk Road in the south and also links up with the Yangtze River economic belt. At present, a multi-party cooperation pattern from China and other countries has been formed in the construction of the new land-sea passage.

3.1.4 New Western Land-Sea Corridor

In 2019, General Planning of New Western Land-Sea Corridor clearly pointed out that on the basis of the new international land and sea trade channel, a new western land and sea corridor connecting the "One Belt And One Road" and the Yangtze River Economic Belt should be built.

Compared with the new international land and sea trade channel (‘southbound channel’), the concept of ‘the new western land and sea channel' has two distinct characteristics. Firstly, the word ‘trade’ has been removed from the name, indicating that the construction of the New Western Land-Sea Corridor has a richer meaning. It

is no longer limited to pure trade and logistics cooperation, but also extends the scope of cooperation to regional in-depth cooperation including logistics and trade cooperation, taking governance and market integration into account. Secondly, New Western Land-Sea Corridor effectively connects all the parties that in the spatial layout of the area of the corridor. It means that the New Western Land-Sea Corridor is not only in the country's western regional development strategy, but also would expand its radiation scope, to promote the western region's domestic connectivity with other areas all over the world. Government will further give play to the role of the new land-sea corridor as a bridge linking the domestic and international markets. Based on these two characteristics of the New Land-Sea Corridor in West China, there will be more new possibilities in the new era. On one hand, the new land-sea corridor can be used to carry out cross-regional cooperative governance and realize the integrated and coordinated development of the West, so as to solve the problems of 'divided governance' and local competition among the provinces and regions in the West China. On the other hand, all parties can rely on the New Western Land-Sea Corridor market cooperation to realize the regional trade, logistics, industry and multi-dimensional market cooperation and inject new vitality for the development of the western region, also for other countries related.

3.2 Current situation

3.2.1 The geographical position

New Western Land-Sea Corridor has three main channels. The first one is from Chongqing, passes Guiyang (Guizhou province), Nanning (Guangxi province), to Beibu Gulf Port(Guangxi province) and Yangpu Port (Hainan province). The second one is form Chongqing, passes Huaihua (Hunan province), Liuzhou (Guangxi province) to Beibu Gulf Port. The third one is from Chengdu (Sichuan province),

passes Luzhou (Sichuan province), Baise (Guangxi province) to Beibu Gulf Port. The three channels together form the main channel of the Land-sea corridor and connects to other economic belts of China.

At the two ends of the corridor there are three major hubs which are Chongqing, Chengdu and Beibu Gulf. Chongqing is at the intersection of 'One Belt And One Road' and the Yangtze River Economic Belt. It's the center of the channel logistics and the operation organization. Chengdu as an important national trade and logistics center has the ability of leading the development of the corridor.

Guangxi Beibu Gulf international gateway port is the end of the corridor. It is located in the combination of South China Economic Circle, Southwest Economic Circle and ASEAN Economic Circle. It is the most convenient harbour in southwest China. It mainly consists of Qinzhou Port Area, Fangcheng Port Area, Beihai Port Area. It is the only coastal area in the Great Western Development Area of China, and also an area where China and ASEAN countries have both sea passage and land border, with obvious geographical advantages and prominent strategic position. It is a city cluster with about 15 cities covering Guangxi province, Hainan province and Guangdong province. The Zhanjiang of Guangdong province, Beihai, Qinzhou and Fangchenggang of Guangxi province are all important ports of south China. Especially Fangcheng Port is known for its natural deep-water port, which has the shortest voyage from the Chinese mainland to Southeast Asia, Africa, Europe and Oceania.

Another port at the end is Yangpu Port. Hainan Yangpu Port is positioned as a regional international container hub port, and its main development direction is to attract domestic and foreign sources of goods, promote international transshipment business and improve the comprehensive service capacity of the port. It is located in Yangpu

Bay on the northwest coast of Hainan Island, a deep-water port with the best natural conditions in Hainan Province. In December 2016, the government of Hainan Province issued the Plan of Port Resources Integration of Hainan Province, aiming to build a regional shipping hub and logistics center with Haikou Port and Yangpu Port as the dual core, which is backed by the hinterland of South China and has the ability of resource allocation. In August 2019, the National Development and Reform Commission issued the Master Plan for the New Western Land-Sea Corridor, which pointed out that Yangpu Port should be supported to attract domestic and foreign sources of goods and develop into a regional international container hub port. In June 2020, the State Council issued the Overall Plan for the Construction of Hainan Free Trade Port, emphasizing the construction of China's Yangpu Port of Registrar. Through undertaking the industrial chain transfer of the Guangdong-Hong Kong-Macao Greater Bay Area and cooperating with the Beibu Gulf Port, it expanded the supply of goods in the hinterland. In 2019, the container throughput of Yangpu Port was 660,000 TEU.

According to ‘General Planning of New Western Land-Sea Corridor’ that signed by 12 provinces in West China, Hainan province and Zhanjiang city of Guangdong province in October 2019, Beibu Gulf Port is positioned as an international gateway port, among which Qinzhou Port focuses on the development of container transportation, Fangcheng Port focuses on the development of bulk cargo and cold chain container transportation, Beihai Port focuses on the development of international cruise, trade and clean material transportation.

New Western Land-Sea Corridor improves the comprehensive transportation network in southwest China around the main channel, and closely links the important node cities and logistics hubs with the main channel in Guiyang, Nanning, Kunming, Zunyi, Liuzhou and other southwest regions, so as to support the high-quality economic and

social development in southwest China. Secondly, it strengthens the connection between the main channel and the northwest comprehensive transportation channel, connects Lanzhou, Xining, Urumqi, Xi ' an, Yinchuan and other important northwest cities. It gives full play to the advantages of long-distance railway transportation. It coordinates and optimizes the transportation organization, strengthens the connection between New Western Land-Sea Corridor and the Silk Road Economic Belt in the west, also enhances the radiation linkage effect of the channel to the northwest region, and effectively promotes the development and opening up of the western region.

3.2.2 Support of policy

In order to smoothly promote the construction of land-sea corridor, policy is particularly important. On the external side, guided by the development orientation of China-ASEAN, in terms of hard mechanism, there are mainly international mechanisms such as China-ASEAN '10 + 1', East Asia Summit, and Lancang-Mekong cooperation, international agreements such as RECP and China-Singapore FTA. In terms of soft mechanism, there are mainly East Expo, Pan-North Forum, Sino-Singapore Forum and so on to promote regional economic and trade cooperation and cultural exchanges. At the national level, from the proposal of new land-sea corridor to the formal establishment, the central government has successively issued a series of policies, providing a guarantee for the future development of corridors.

In internal China, China's Ministry of Commerce, General Administration of Customs, People's Bank of China, China Railway Corporation and other institutions provide special policy support in cooperation mechanism, customs clearance, finance, freight and other aspects. Singapore Taiping Shipping Group, Port Group, Jiali Logistics, Ye Shuifu and other four companies set up consortiums with Chinese joint venture to form

light assets, heavy assets companies. Taiping Shipping invested about 10 billion yuan in Guangxi to build Nanning International Logistics Park, helping to build a 'south channel' intelligent logistics supply chain platform. The China Construction Bank in Chongqing, Guangxi, Guizhou, Gansu and Qinghai jointly signed a memorandum of cooperation to jointly build a service mechanism for New Western Land-Sea Corridor, providing financing for railway construction of nearly CNY 15 billion, and taking the lead in forming a CNY 17 billion syndicated loan for the T3 terminal building of Chongqing Jiangbei International Airport.

In terms of fiscal preferential measures. Guangxi has introduced relevant policies to clarify the preferential policies provided by Guangxi from 2018 to 2020 in the aspects of liner operation of southward channel, reduction of logistics and customs clearance costs, construction of cold chain logistics system, support for the introduction and cultivation of logistics enterprises. For example, the railway freight price is given a 30% discount for the upward rail-sea intermodal container trains originating from the southern route through Beibu Gulf Port. Container customs clearance costs in Beibu Gulf Port have been reduced by 5% annually. Sichuan's policy points out that it is necessary to increase financial support for inter-provincial connectivity and the construction of industrial cooperation parks. At the same time, it is necessary to innovate the system and mechanism of transportation investment and financing, actively seek the support of central funds, policy banks and international financial institutions for key projects of the southward channel, and attract social capital to participate in the construction and operation of the southward transportation infrastructure.

3.2.3 Infrastructure

As the strategic logistics channel of the countries along the Belt and Road, New Western Land-Sea Corridor is jointly constructed by many countries, including water transportation, land transportation and air transportation.

According to the logistics and organization operation center of the New Western Land-Sea Corridor for the first quarter of 2021, in the first quarter of this year, the three logistics forms of the New Western Land-Sea Corridor have achieved substantial growth, and the destinations have been expanded to 264 ports in 96 countries and regions.

3.2.3.1 Road transportation

The construction of highways has been improving. All the southbound highways in China have reached the highway standards of high grade and above, and the highway network has been basically completed. In 2016, Chongqing ASEAN regular bus has adopted the "five fixed mode" of fixed point (loading location), fixed route (service line), fixed train number, fixed time (fixed arrival and departure time) and fixed price (transportation price). In this five years, 8 lines of the ASEAN bus (East Line, East Line Ⅱ, Central Line and West Line, the Asia-Europe Line and Singapore Line), Central Asia bus (Uzbekistan Line and Kazakhstan Line) has been set up, realizing a complete coverage of the Indo-China Peninsula and the connectivity between Chongqing and central Asia land transportation channel. It has become the important carrier of New Western Land-Sea Corridor.

In addition, the regular bus has more than 30 overseas distribution warehouses, and

has reached reciprocal cooperation with more than 20 domestic and foreign logistics enterprises. Since its launch on April 28, 2016, by the end of 2020, it has delivered more than 5,000 flights, 11,252 international standard containers with a total weight of about 75,100 tons and a total value of about 2.9 billion yuan. As of May 31, in 2021 a total of 1375 cross-border highway buses in Chongqing has delivered 3094 TEU of international standard containers with a total weight of 24,100 tons and a total value of 795 million yuan. Compared with the same period in 2020, the bus numbers and the shipment of international standard containers increased by about 84%. And the weight increased by about 94%, the value of goods increased by about 119%.

3.2.3.2 Rail transport and sea rail combined transport

Railway is one of the important logistics modes of the New Western Land-Sea Corridor. Up to now, the basic railway transportation network has been built up and the freight volume and train numbers are also increasing. Now the railway network covering different regions is still expanding.

Over the past four years, the number of new corridor has increased nearly 25 times from 178 in 2017 to 4607 in 2020, and the number of new corridor has increased from 1 per week to more than 10 per day, achieving seamless connectivity with the Central European trains. In the first quarter of 2021, the transportation of goods in the New Western Land-Sea Corridor showed a good development trend. There were 1325 sea-rail intermodal trains, and the container handling capacity was 66292 standard containers, which increased by 89.3 % and 88.5 % respectively compared with the previous year. Rail-sea intermodal trains have radiated 264 ports in 96 countries (regions), with more than 500 goods categories.

In order to smooth the lane to the sea of the western provinces and cities, Guangxi railway and port construction are still upgrading and a number of major projects has been finished. In 2021, 'Suining-Qinzhou', 'Brazil-Qinzhou-Chongqing', 'Huaihua-Beibu Gulf Port' and other sea-rail intermodal trains were successfully opened in the New Western Land-Sea Corridor and 6 new sea-rail intermodal stations has been set up, which have covered 59 stations in 27 cities of 9 provinces (autonomous regions and municipalities). It provides strong support for the new corridor to form logistics agglomeration effect.

3.2.3.3 Air transport

New Western Land-Sea Corridor opens up a transportation channel from Europe to Southeast Asia via China, and the agglomeration of logistics enterprises forms a new logistics center in the node cities along the route. Whether it is the exchange of talents or the transportation of high value-added goods, aviation is undoubtedly the quickest way. The western region of China is actively building an air passage facing ASEAN to promote the development of air economy. As one of the eight major hub airports in China, Jiangbei Airport of Chongqing has three runways and three terminals of ‘T1’, ‘T2’ and ‘T3A’. In 2020, the construction of Chongqing's international aviation hub has reached a new level, with the total number of international routes reaching 101. Air China Cargo Chongqing Base Branch Company successfully landed, becoming the first cargo base airline company in Chongqing. The passenger throughput of Chongqing Jiangbei International Airport reached 34.94 million person-times, ranking the fourth in China in this year. The cargo throughput reached 411,000 tons, achieving positive growth and the international cargo throughput reached 151,000 tons, ranking the first in the western region.

In Guangxi, the second ASEAN all-cargo plane route and also the third international all-cargo plane route 'Nanning-Bangkok' all-cargo plane route were officially opened in May 2021. The outbound cargo of this route is mainly e-commerce parcels, engineering accessories, etc., while inbound cargo is mainly local agricultural and sideline products. The maximum cargo of the flying aircraft is 29 tons. This made Nanning Airport become an international gateway hub airport facing ASEAN, and it is of great significance to promote Guangxi to become the strategic fulcrum of aviation.

3.3 Features of the New Western Land-Sea Corridor

3.3.1 Sea-rail intermodal transportation

Previously, few enterprises use railway container to go to sea, generally through the freight company before going to sea. The goods are transferred to the marine container and then go to sea. This traditional way not only increases time and expenses cost, but may also cause the loss of goods at the time of container exchange. The operation of the railway container to the sea can not only help the railway department to improve the utilization rate of containers and increase operating efficiency, but also can reduce the transportation costs for customers. The sea-going departure of railway containers can effectively solve the problems of lack of maritime containers and surplus railway boxes in the western inland areas of China.

As of April 28, 2021, the number of sea-rail intermodal trains of the New Western Land-Sea Corridor exceeded 10,000 in total. It took less than four years for the train numbers to move from normalization to breakthrough 10,000, which was three years less than the China-Europe Railway Express.

3.3.2 One-bill coverage system

Under the form of intermodal transport, 'One-bill coverage system' came into being and got used. CIFA intermodal transport bill of lading is an innovation under this kind of system. It is a new mode that covering the whole process explored by Chongqing in regards to the New Western Land-Sea Corridor. The intermodal transport operators sign and issue the intermodal transport bills of lading that of the whole process of railway and maritime. This kind of bill of lading helps to enhance and improve the mutual trust and mutual recognition and communication mechanism of multiple modes of transport. It realizes the mode of ' one commission, one insurance, one bill of lading from end to end, one settlement of balances '. There is no need to handle the procedures of changing tickets and get the tickets for the second time in the midway, so as to maximize the convenience of the goods transportation. In other words, the ' One-bill coverage system 'mode of international railway intermodal transport is the way that in the whole process of international railway intermodal transport, with the help of only a unified international railway intermodal bill of lading, the standards and requirements to the intermodal transport bill of lading in all links and departments of the whole process can be met. That is, a bill of lading runs through the whole process and applies to all relevant operations of international railway intermodal transport, and the carrier charges all costs at one time to provide customers with cross-border whole-process railway transport services.

The 'One-bill coverage system' explores the establishment of new rules for trade logistics finance, improves and perfects the mechanism of mutual recognition and communication of multiple modes of transport. It advances to broader areas such as public information services based on digital interconnection, and supply chain finance based on bank-insurance cooperation and bank-guarantee cooperation, so as to reach

the goal of reducing logistics costs, getting scalable and intensive development of related industries.

In the future, the intermodal transport of 'One-bill coverage system' integrated financial service platform will be based on the cross-border trade finance function, expand the diversified scenarios of trade facilitation, and serve more regional enterprises along the new corridor. It will inject new functions and vitality for Guangxi into the construction of international portal port.

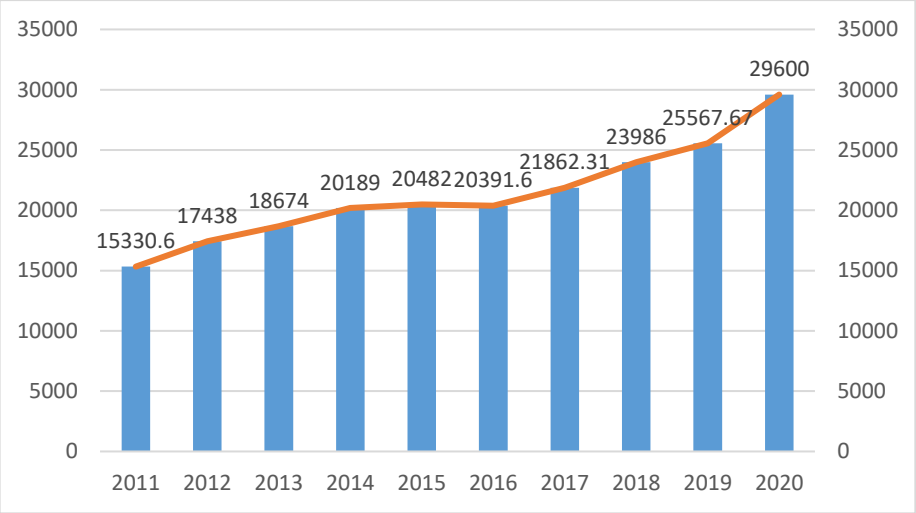
3.4 Cargo throughput projection of Beibu Gulf Port

On February 14, 2007, Guangxi established Guangxi Beibu Gulf International Port Group Co., Ltd. through the reorganization and integration of state-owned property rights of Fangcheng Port Group Co., Ltd., Qinzhou Port (Group) Co., Ltd., Beihai Port Co., Ltd. and Guangxi Coastal Railway Co., Ltd. The Guangxi Zhuang Autonomous Region formally approved Guangxi coastal Fangcheng Port, Qinzhou Port and Beihai Port to use the same name of ' Guangxi Beibu Gulf Port ' on March 19, 2011. Therefore, Beibu Gulf Port includes three parts of Fangcheng Port, Qinzhou Port and Beihai Port.

In 2021, the Central Committee of the Communist Party of China and the State Council issued the ‘Outline of National Comprehensive Three-dimensional Traffic Network Planning’ which clearly listed the Beibu Gulf Port as an international hub port with 10 ports including Shanghai Port, Shenzhen Port and Guangzhou Port, indicating that the Beibu Gulf Port has risen to the level of international hub port in terms of planning and positioning.

Graph 1

Volume of cargo throughput of Beibu Gulf Port of 2011-2020 (in million tons)



Source: CHINA PORTS YEARBOOK

From the time of establishment of Guangxi Beibu Gulf Port to 2020, the cargo throughput has doubled. The graph shows an increase in cargo throughput since the establishment of the New Western Land-Sea Corridor in the west in 2017. Following is the cargo throughput projection of Beibu Gulf Port in the next 5 years starting from 2021.

3.4.1 Exponential smoothing method

Exponential smoothing prediction method is a prediction method, which is based on the actual number of the current period and the prediction number of a certain index, and imports a simplified weighting factor, namely the smoothing coefficient, to obtain the average number. Exponential smoothing method is a method derived from moving average method, which is a special kind of weighted average method. Its characteristic is that the weight decreases exponentially from the historical data close to the prediction period to the historical data far from the prediction period. According to

different smoothing times, exponential smoothing method can be generally divided into single exponential smoothing method, double exponential smoothing method, triple exponential smoothing method and high-order smoothing method. Single exponential smoothing method is generally used when the time series change of the research data is relatively stable. Double exponential smoothing method is for the data sequence with obvious upward or downward trend. Triple exponential smoothing method is suitable for time series with quadratic curve trend. The high-order smoothing prediction method is used in less cases.

3.4.2 Forecasting model

Through the analysis of historical data, it can be found that the cargo throughput of the Beibu Gulf port over the years shows a trend of nonlinear curve. Therefore, in the prediction of cargo throughput of the Beibu Gulf Port, the triple exponential smoothing prediction method can be used to predict. Set the time series as $Y_1, Y_2, Y_3,..., Y_n$, $s_t^{(1)}$ is the first exponential smoothing value at time t , $s_t^{(2)}$ is the second exponential smoothing value at time t, $s_t^{(3)}$ is the third exponential smoothing value at time t. α is the weighted coefficient. Its value range is 0-1, so the exponential smoothing formula is :

$$s_t^{(1)} = \alpha Y_t + (1-\alpha) s^{(1)}_t \quad (1)$$

$$s_t^{(2)} = \alpha s_t^{(1)} + (1-\alpha) s^{(2)}_{t-1} \quad (2)$$

$$s_t^{(3)} = \alpha s_t^{(2)} + (1-\alpha) s^{(3)}_{t-1} \quad (3)$$

Triple exponential smoothing model prediction formula is:

$$\hat{Y}_{t+T} = a_t + b_t T + c_t T^2 \quad (4)$$

$\hat{Y}_{t+T}$ indicates the predicted value of t + T year (based on t year). Linear model system Number a_t and bt are:

$$a_t=3s_t^{(1)}-3s_t^{(2)}+s_t^{(3)} \quad (5)$$

$$b_t=\frac{\alpha}{2(1-\alpha)^2}[(6-5\alpha)s_t^{(1)}-2(5-4\alpha)s_t^{(2)}+(4-3\alpha)s_t^{(3)}] \quad (6)$$

$$c_t=\frac{\alpha^2}{2(1-\alpha)^2}[s_t^{(1)}-2s_t^{(2)}+s_t^{(3)}] \quad (7)$$

3.4.3 Parameter determination

In general, when the sample data of the original sequence is less than or equal to 15, Initial estimates generally take the average of the first three or five data.

3.4.4 Projection

3.4.4.1 Initial value determination

Set the beginning of the time of 2017 when New Western Land-Sea Corridor is set up. Since the original data is less than 15, the initial value $s_1^{(1)} = s_1^{(2)} = s_1^{(3)} = (Y_1 + Y_2 + Y_3) / 3 = 23805.327$.

3.4.4.2 Selection of smoothing factors

This paper selects several different α values of typical full coverage, and compares the root mean square error values. When $\alpha = 0.6$, the average error is the minimum, so we take the smoothing coefficient α as 0.6.

Table 1

Root mean square error (RMSE)

Number	Initialization value S0	Vale of alpha	Value of RMSE
1	23805.327	0.05	3520.33
2	23805.327	0.1	3491.866
3	23805.327	0.2	3314.796
4	23805.327	0.3	3036.307
5	23805.327	0.4	2737.21
6	23805.327	0.5	2510.558
7	23805.327	0.6	2451.174
8	23805.327	0.7	2624.815
9	23805.327	0.8	3050.427
10	23805.327	0.9	3732.647
11	23805.327	0.95	4178.004

3.4.4.3 Forecasts for the next five years

The best model parameters are initial value of 23805.327, alpha value of 0.600, smooth type of third exponential smoothing, RMSE value of 2451.174. Construct the model with this parameter and then get the forecast value of cargo throughput of Beibu Gulf port in the next five years (Table 2).

Table 2

Forecast of cargo throughput of Beihai Gulf Port of 2021-2025 (in million tons)

2021	2022	2023	2024	2025
33816.047	39122.848	45393.169	52627.01	60824.373

From the projection, we can see that under the background of New Western Land-Sea Corridor, Beibu Gulf is showing its fierce momentum.

Chapter 4 The analysis of the effect on ports in East China

4.1 Introduction of Shanghai port

Shanghai Port is a port of Shanghai in China, which is located in the middle of the coastline of the mainland of China and the estuary of the Yangtze River. It passes through the north and south coast of China and the world ocean, and then passes through the Yangtze River Basin, the inland rivers of Jiangsu, Zhejiang and Anhui, and the Taihu Lake Basin. In January 1996, Shanghai launched the construction of international shipping center. On December 10, 2005, the first phase project of Yangshan Deepwater Port Area in Shanghai Port was completed and put into operation. As of 2005, the water area of Shanghai Port was 3620.2 square kilometers. Of which the Yangtze River estuary waters 3580 square kilometers. Huangpu River waters 33 square kilometers, port land 7.2 square kilometers. The seaport area consists of the South Coast Port Area of the Yangtze Estuary, the North Coast Port Area of Hangzhou Bay, the Huangpu River Port Area and the Yangshan Deepwater Port Area. By the end of 2016, Shanghai Port had established container trade with more than 500 ports in 214 countries and regions around the world, with more than 80 international routes. In 2016, Shanghai Port completed 702 million tons of cargo throughput and 3.713 million standard containers of container throughput. In 2018, Shanghai port cargo throughput ranked second in the world. In 2020, the container throughput of Shanghai Port reached 43.5 million standard containers.

4.2 Current situation of Shanghai port

4.2.1 Strengths of Shanghai Port

4.2.1.1 Superior geographical location

Shanghai Port is located in the leading edge of the Yangtze River Delta, the terrain is flat and open, so the construction condition is superior. It is in the temperate zone so it is an ice-free port. Located at the entrance of the Yangtze River, it is the intersection of the Yangtze River and the coast. It connects the Yangtze River internally and the Yellow Sea externally. The sea area is wide, the coastline is relatively tortuous, and the water depth is good enough, which provides sufficient ship berthing space for the port and plays a good role in wind avoidance. Under the strong momentum of the New Western Land-Sea Corridor, the ports of East China should strengthen their own service level and maintain the basic competitiveness in service quality.

4.2.1.2 Economic advantages of the hinterland

Shanghai Port belongs to Shanghai with good industrial foundation, developed foreign trade, broad market, and great advantages in talents, funds and resources. Backed by the Yangtze River Basin, most of them are economically developed areas with large population, rich products and good industrial foundation. They are connected with all parts of the country through the trunk and tributaries of the Yangtze River, railways and highways. With the development and construction of the ‘golden waterway’ of the Yangtze River, the Yangtze River water transport can continue to the western inland areas. At present, the Yangtze River Delta port group with Lianyungang Port and Ningbo Port as the center has important strategic significance for China ' s economic development and foreign trade transactions.

4.2.1.3 Improvement of port service system

Yangshan port as China's first bonded port provides a lot of preferential policies for port logistics. More and more port and shipping service enterprises are stationed in Shanghai. China’s largest international shipping enterprises, China Shipping Group, COSCO Container Transportation Co., Ltd. and SINOTRANS CONTAINER LINES CO., LTD, have also moved to Shanghai. With the entry of these large enterprises, the scope of port services continues to expand, and the related service-oriented industries will gradually improve, creating a solid backing for the excellent operation of Shanghai Port.

4.2.2 Weakness

4.2.2.1 Irrational transport structure

Ports with good development generally have a reasonable transportation structure, that is, the proportion of water transportation, railway and highway transportation is about 1 : 1 : 3. However, the ports in Shanghai are very scattered, and the ports are separated from railway lines, resulting in most container transportation in Shanghai port is completed by highway transportation, and the proportion of railway transportation is almost negligible. This puts too much pressure on the road system in Shanghai. And when it is too dependent on a particular mode of transport, especially Yangshan Port, which uses sea-crossing bridges as the only land access, will greatly affect the normal operation of Yangshan Port in the event of an emergency.

4.2.2.2 Deviation from main international routes

Under the combined influence of the first two disadvantages, Shanghai Port is no

longer the first choice for many international shipping lines to depart or arrive at. Many ships with high demand for water depth and other conditions can only choose other ports to berth. Gradually, Shanghai Port deviates from several major international shipping lines in the world, and is no longer at the center of international shipping, so the international trade and transportation of Shanghai are greatly restricted.

4.2.3 Opportunities

Construction of Shanghai International Shipping Center is the opportunities for Shanghai Port. The strong support of the Chinese government has created favorable conditions for the development of Shanghai's international shipping center on the macro level. As early as 1995, China government has made the planning goal of building Shanghai into an international shipping center, so as to achieve the strategic goal of developing and constructing the entire Yangtze River Basin, and make Shanghai an economic center in the entire Far East region. In 1996, China and Shanghai government issued a series of policies and regulations for Shanghai to build an international shipping center, put forward the strategic planning of Shanghai as the center, Zhejiang Province and Jiangsu Province as the flank, and officially launched the construction. In 2005, the Shanghai People' s Congress approved the adoption of the 'Shanghai Port Regulations'. The regulations provide new basis for port governance, and provide a comprehensive legal basis for the relevant measures for the governance of Shanghai ports such as rational planning and construction, the use of coastline according to law, scientific operation and management, safety and maintenance. In 2008, Shanghai International Shipping Research Center was jointly launched by Shanghai Maritime University and more than 10 units of Hongkou District People ' s Government. Based on the construction of Shanghai International Shipping Center, the center contacted first-class experts at home and abroad to build a research

platform for international shipping center. It would track new concepts, new technologies, new trends and new updates of global shipping development and contribute to the development and construction of Shanghai International Shipping Center. In 2009, the State Council issued the 'Opinions on Accelerating the Development of Modern Service Industry and Advanced Manufacturing Industry in Shanghai and Building International Financial Center and International Shipping Center'. Around the realization of the two overall goals proposed before, the 'Opinions' put forward the construction of Shanghai international financial center, as well as Shanghai international shipping center and accelerating the development of advanced manufacturing and advanced technology service enterprises and other aspects of the main tasks and specific policy measures. In 2013, the Shanghai Free Trade Zone was established, and the experimental zone became a new experimental field in China. The implementation of a number of reform measures such as the transformation of government functions and financial system vigorously promoted the development of Shanghai in transit and offshore areas. On September 29, 2013, the Shanghai Free Trade Zone was formally established. After that, a series of relevant regulations and policy support were issued by the State Council and the Shanghai government, which played a good traction role for the development of Shanghai Free Trade Zone and Shanghai International Shipping Center. In 2018, Shanghai government passed the 'Shanghai Regulations on Promoting the Construction of International Shipping Center'. The regulation was formulated in order to form a linkage mechanism with the construction of China (Shanghai) Pilot Free Trade Zone and create an international competitive shipping development environment. It aimed to attract a large number of shipping enterprises to gather in Shanghai. The government's policy support strongly supported the agglomeration of Shanghai's shipping resources and promoted the construction and development of Shanghai International Shipping Center.

4.2.4 Threats

Shanghai Port is with the threats from domestic side and abroad.

4.2.4.1 Domestic container port competition - Ningbo - Zhoushan Port as an example

Ningbo Port and Zhoushan Port are the two pillars of ports in Zhejiang Province. Ningbo Port is the only port with the ocean routes opened in the Yangtze River Delta except Shanghai Port. While Zhoushan Port has become an important coastal port in China with its superior water depth conditions. The combination of Ningbo Port and Zhoushan Port has achieved the effect of '1 + 1 > 2', becoming the most important hub port in the Yangtze River Delta except Shanghai port. And from the perspective of the port's natural conditions, Ningbo-Zhoushan port is largely superior to Shanghai port, especially the water depth conditions are more suitable for the construction of deepwater terminals than Shanghai port. It is good to the development of large container freight transport. However, from the perspective of soft conditions, Shanghai port's economic hinterland is much broader than Ningbo-Zhoushan port, the level of informatization is higher, and the port service conditions are better. The competition between the two ports is very fierce, due to the close geographical position.

4.2.4.2 Competition with foreign container ports - A case study of Busan Port

Although Shanghai is the largest international port in China, its geographical location deviates from the main international shipping line. Almost all the world-class container hub ports are located on the following four main routes (North Atlantic route, Asia-Europe route, Cape of Hope route, and North Pacific route). Busan Port of South Korea is in one of them. It is on the center of the Northeast Asian economic circle, handling 95 % of the container goods. Since Shanghai is not on the main line of international shipping, its maritime trade is severely restricted.

4.3 Effect to the Shanghai Port under the background of New Western Land-Sea Corridor

4.3.1 Goods diversion

To the south, New Western Land-Sea Corridor connects Southeast Asia and radiates South Asia, the Middle East, Oceania and other regions. The countries and regions along the route can share production capacity, market and other factors. This ends the history that had to make a detour from other routes. However, it also has an impact on the eastward 'Golden waterway' of the Yangtze River. New Western Land-Sea Corridor in western China intersects with the golden waterway of Yangtze River in central and western China. Before the construction of the new corridor, Chongqing mainly uses the golden channel of the Yangtze River and uses the way of river-sea intermodal transport. For example, the import of goods from Europe needed to enter the Red Sea by the Suez Canal, then the South China Sea and the East China Sea through the Indian Ocean and the Strait of Malacca, and then the goods are transported to Chongqing by the Shanghai Port through the Yangtze River golden waterway. The whole process took about 50 days. After the opening of the New Western Land-Sea Corridor, the goods of European countries can reach Chongqing by rail and sea after landing at Qinzhou port in Guangxi, which saves about 15 days. For export goods, it took nearly a month to transport through the eastern region to Southeast Asia. Now it takes only about one week to go through the railway from Qinzhou port in Guangxi. In addition, the lack of capacity of the lock of the Three Gorges, which is at the upper middle Yangtze River, remains one of the main bottlenecks in the development of the 'Yangtze River Golden Waterway'. It forces some customers who do the import and export trade with European countries to abandon water transport and choose full land transport such as the costly CHINA-Europe RAILWAY Express. While the opening of

the new corridor will provide more options for these customers and further compress the living space of the Golden Waterway of Yangtze River.

From the above analysis, it can be seen that the New Western Land-Sea Corridor has shorter time to reach Southeast Asia, South Asia, Western Asia and European countries than the east channel, and is with more price advantages than the CHINA-Europe RAILWAY Express. Therefore, the New Western Land-Sea Corridor will certainly divert goods that originally go through the golden waterway of Yangtze River and the CHINA-Europe RAILWAY Express (from Chongqing).

4.3.2 Impact on Shanghai Port's influence

With the continuous improvement of the operation mechanism, the operation volume of New Western Land-Sea Corridor continues to increase. According to the data from January to May 2021, Chongqing has opened 781 rail-sea intermodal trains in the New Western Land-Sea Corridor, an increase of 150 % on year-on-year basis. The transportation is close to 40,000 standard containers. The freight value is 5 billion yuan, an increase of 141 % year on year. Among them, 1462 TEU are combined transported with the CHINA-Europe RAILWAY Express (Chongqing-Sinkiang-Europe International Railway). Cross-border highway liner transported 3094 TEU, an increase of 84 % year on year, which valued 795 million yuan, an increase of 119 % compared with same period last year. International railway intermodal transported 713 TEU, an increase of 71 % year on year, and the cargo value is 1.11 billion yuan, with an increase of 13 % year on year. By the end of May, the total number of transport containers in the channel exceeded 200,000 standard containers, and the cargo value exceeded 36 billion yuan.

The radiation range of the New Western Land-Sea Corridor is also expanding. The railway-sea intermodal trains reach 32 stations in 9 provinces and cities. The logistics network radiates 304 ports in 105 countries and regions, and 519 types of transport goods. At the same time, the corridor also completed the construction of distribution centers in Dazhou, Suining, Nanchong in Sichuan Province, and accumulated 13582 standard containers of goods of Sichuan.

Under the influence of the global epidemic in 2010, the throughput data of ports of the whole China showed poor performance. But with the help of the policy advantage of the New Western Land-Sea Corridor, the throughput of Beibu Gulf Port in Guangxi was not affected by the epidemic, and even greatly increased against the bad development atmosphere. According to the data of the Ministry of Transport and Shanghai International Shipping Center, Beibu Gulf Port has entered the world ' s top 20 port cargo throughput list in this year, ranking 19, which was the only new face on the list. According to the national port throughput data released by the Ministry of Transport for January-November 2020, the cargo throughput of Beibu Gulf Port grew by 16.3 percent, which was the second largest increase in China, following Huanghua Port in Hebei. In terms of container throughput, Beibu Gulf port has completed 4.55 million TEU from January to November this year, which was a surge of 32.9 % compared with last year, and the growth rate ranked first in China' s ports in 2020. It was the only large port in the country with the increasing growth of both goods and containers. However, it can be seen that Shanghai port was showing the declining trend during the pandemic.

Table 3

2020 Janauary-November cargo throughput TOP20 of Chinese ports

Rank	Port	Cargo throughput	Year-on-year growth
1	**Ningbo-Zhoushan Port**	108405	5%
2	**Shanghai Port**	64549	-2.0%
3	**Tangshan Port**	62874	6.10%
4	**Guangzhou Port**	56010	1.00%
5	**Qingdao Port**	55509	4.90%
6	**Suzhou Port**	50547	5.50%
7	**Tianjin Port**	47330	3.80%
8	**Rizhao Port**	45961	7.90%
9	**Yantai Port**	36667	2.70%
10	**Zhenjiang Port**	32605	10.00%
11	**Dalian Port**	30905	-6.90%
12	**Nantong Port**	28603	-4.60%
13	**Huanghua Port**	27718	5.50%
14	**Taizhou Port**	27284	5.60%
15	**Beibu Gulf Port**	27014	16.30%
16	**Shenzhen Port**	23949	2.40%
17	**Fuzhou Port**	22890	18.50%
18	**Nanjing Port**	22843	-2.80%
19	**Port of Lianyungang**	22340	3.70%
20	**Yingkou Port**	21629	-0.10%

Source: *https://www.sohu.com/a/443403024_120068214*

Table 4

2020 Janauary-November container throughput TOP20 of Chinese ports

Rank	Port	Container throughput	Year-on-year growth
1	**Shanghai Port**	108405	-0.004
2	**Ningbo-Zhoushan Port**	64549	0.035
3	**Shenzhen Port**	62874	0.016
4	**Guangzhou Port**	56010	0.014
5	**Qingdao Port**	55509	0.04
6	**Tianjin Port**	50547	0.061
7	**Xiamen Port**	47330	0.021
8	**Suzhou Port**	45961	0.003

9	**Yingkou Port**	36667	0.024
10	**Dalian Port**	32605	-0.396
11	**Beibu Gulf Port**	30905	0.329
12	**Rizhao Port**	28603	0.088
13	**Port of Lianyungang**	27718	-0.003
14	**Foshan Port**	27284	-0.087
15	**Dongguan Port**	27014	-0.068
16	**Fuzhou Port**	23949	-0.015
17	**Yantai Port**	22890	0.061
18	**Nanjing Port**	22843	-0.059
19	**Tangshan Port**	22340	0.054
20	**Quanzhou Port**	21629	-0.105

Source: *https://www.sohu.com/a/443403024_120068214*

New Western Land-Sea Corridor has been regarded as a major project during the '14th Five-Year' period by China. With the continuous improvement of infrastructure and the expansion of its ‘circle of friends’, the status of the New Western Land-Sea Corridor in China will rise and certainly will have an impact of the port in eastern China.

Chapter 5 Suggestion for Shanghai Port and ports of East China

5.1 Focusing on the service and efficiency advantages of the main line of Shanghai Port

The richness and comprehensiveness of main route resources, schedule selection are the most important advantages of Shanghai Port as the leading port of the Yangtze River Golden Waterway and for the inland customers in shipping import and export trade. Hence the port should further improve the existing port service efficiency commitment guarantee system and internal supervision and assessment mechanism, especially pay attention to improve the guarantee of ship scheduling and water transfer

connection.

5.2 Strengthening cooperation with ports in South-East Asia

The connection between Shanghai Port and Southeast Asian ports has been frequent. With the continuous development of the 'Sea Silk Road', as China' s largest port, Shanghai Port should strengthen its radiation effect. It may strengthen the cooperation and development between ports and ports, joint China Maritime, COSCO, Sinotrans Shipping Group to invest in key ports in Southeast Asia and strengthen the establishment of relevant 'Sea Silk Road' cooperation projects. This kind of cooperation can form an international port strategic alliance, by giving full play to the unique strategic position of Shanghai Port to strengthen the shipping and trade links and enhance the port radiation capacity.

5.3 Focus on shipping services and innovative industries

The development of shipping service industry and innovative industry is the only way to build the world-class international shipping center. At present, the international shipping center should pay attention to the throughput of shipping goods and container goods to develop the shipping service industry related to the soft environment construction of the shipping center. At present, the degree of soft environment construction has an inevitable connection with the advanced level of the international shipping center. In addition, the development of innovative service industry has an important supporting significance for the transformation and development of Shanghai Port. Shanghai should increase investment in shipping services and innovative industries, encourage enterprises to carry out independent innovation, and increase the attraction of shipping services and innovative industries to invest, so as to form

industrial clusters. By this way to accelerate the development intensity of Shanghai International Shipping Center, and so as to promote the rapid development of the whole economic hinterland of Shanghai Port.

5.4 Integrated and coordinated development of the Yangtze River Delta port cluster

It is suggested that Shanghai Port Group can take a more active way to participate in the investment and operation of regional ports, expand the scope of holding ports and increase the proportion of equity. Shanghai Port could expand the Yangtze River port cooperation node, integrate the shipping and logistics network of Yangtze River port, and continuously enhance the control ability of the core hinterland. What's more, strengthening the integration process of Shanghai Port and Ningbo-Zhoushan Port, coordinating port planning, construction and operation, and building international transshipment hub is also a competitive way.

5.5 Upgrading the collection and distribution system and actively promoting the construction of sea-rail intermodal transport system

Each port in East China should seize the opportunity to actively promote the construction of sea-rail intermodal hub and integrate into the new international transit system, to achieve a win-win situation of sea-rail transportation. Specifically, the Yangtze River Delta shipping center should improve the regional railway network, and reasonably plan the layout of the container hub stations. This is to initially form a functional layout of the sea-rail transport hub port consisting of Ningbo-Zhoushan port, Lianyungang port, Nanjing port and Suzhou port. This method is used to shorten the import and export transportation time of the goods from Chongqing, Sichuan and other central and western parts of China, so as to reduce the impact of the New Western

Land-Sea Corridor on the diversion of goods, which results in the reduction of the volume of goods in East China ports.

Chapter 6 Conclusion

By combing the development process and current situation of New Western Land-Sea Corridor, this paper shows the strong momentum of the development of New Western Land-Sea Corridor and the high level that China government pay attention to it. Through the statistical display and prediction of the cargo throughput of Beibu Gulf Port, we can see the development trend of its ports under the background of New Western Land-Sea Corridor. Under this background, port in East China led by Shanghai Port, will suffer from some problems such as the diversion of goods which results in a reduction in goods and a decline in port influence. In this regard, East China port should strengthen its role as the home port of the Yangtze River golden waterway, and strengthen cooperation with Southeast Asian ports. At the same time, pay attention to the development of shipping services and innovative industries and improve the level of service quality. For East China port group, we should strengthen the integration and coordination of them and promote the coordinated development. The ports can also upgrade the collection and distribution system and actively promote the construction of sea-rail intermodal transport system. Under the background of New Western Land-Sea Corridor, East China ports need to actively respond to make optimization and adjustment to continue to maintain strong competitiveness.

Chapter 7 Research outlook

Due to factors such as research time, research perspective and personal ability, this study still has some deficiencies. The biggest shortcoming is in the cargo diversion analysis part that there is no specific data analysis. For example, the analysis of the cargo data of provinces and cities in central and western China, such as Sichuan and Chongqing. Therefore it can't get a clear picture of which kind of goods in these places are affected. Second one is in the part of cargo throughput prediction of Beibu Gulf Port. Since the New Western Land-Sea Corridor was officially established in 2017, the initial data of the prediction model is only from four years of 2017-2020, which is relatively insufficient.

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