

Research on the Problem and Strategy of Ship Finance - Liaoning Province as an Example

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Abstract—Ship finance is very important to the development of shipping and shipbuilding industry, and the construction of Dalian North-East Asia international shipping centre. Through investigation, survey and document research, Learning from the advanced concepts and practices at home and abroad, put forward the integrated solution of ship finance based on the perspective of the ship supply chain, innovative financing leasing business model, industrial finance and taxation support policy and suggestions on the introduction and training of ship financial talents based on the problems of ship finance in Liaoning province as an example, thereby new ideas and methods of China, Liaoning ship finance can be provided to support the development of shipping and shipbuilding industry in China and Liaoning province, the construction of Dalian North-East Asia international shipping centre.

Keywords—Ship Finance; International Shipping Centre; Liaoning Shipbuilding Industry; Supply Chain Finance

I. INTRODUCTION

Ship finance is ship construction and operation finance, insurance and other financial services moved round the shipyard and owner. Since shipbuilding industry is a capital intensive industry, which capital demand is large and capital turnover is long, also higher risk. And shipping industry being the upstream of the shipping industry, it is very important to the development of shipping industry and the construction of international shipping center.

In recent years, the international shipping market has been in a low rate and low profits persistent downturn. The decline of the shipping market must affect the shipbuilding industry. In the first five months of 2017, although shipbuilding completions quantity keeps grower to the national shipbuilding industry, new orders and handheld orders quantity year-on-year decrease. The whole industry is in a state of deficit so as to large numbers of ship companies have failed or are on the verge of collapse, and due to the difficulty and expense to financing of shipyard and shipping enterprises, the shipyards are afraid to accept orders and shipping companies cannot place orders so that it has added to the woes of industries and enterprises.

In the increasingly serious industry situation, it'll be very important research topic that solve the problem of financing difficulty and expensive to shipyards and shipping enterprises so as to effectively improve their order receiving

competitiveness, promote the development of industries and enterprises and finally tide over difficulties.

At present, domestic research on ship finance is divided into two main aspects: On the one hand, it mainly studies the problems, difficulties, needs of ship financing in China and the reference and countermeasure to our country from experiences of foreign ship financing, for example, Based on the characteristics of Chinese ship enterprises, Wu Junmin and Zhang Jinhua analyze the problems and causes of low endogenesis financing proportion of Chinese shipboard enterprises, mainly relying on bank loans and less direct financing, put forward some countermeasures to solve the problems of Chinese shipyards financing in the post-financial crisis period from three perspectives: enterprise, bank and government [1]; Base on analyzing the development situation of shipbuilding industry in China and the growth of international trade, Liangjing, Lujing and Lijing predict the capital demand of shipbuilding industry in China and the design of the system financing demand scheme was carried out [2]. On the another hand, more researches are focused on ship financial lease, for instance, Analyzed the post-financial crisis environment and ship financing leasing being the effective measures for the proper settlement of financing difficulties in the shipbuilding industry and shipping industry, Jinghui, Yu Shihui put forward some countermeasures for developing ship financing leasing business in China [3]; Tianjin Dongjiang bonded port area as the research background, Huangying explores the SPV single ship financing lease mode and its existing problems, furtherly puts forward the countermeasures and suggestions to promote the development of financing leasing [4]. In addition, there are a small number of studies on ship insurance, such as on the basis of analyzing the various risks of ship mortgage financing, Zhuwei constructs a dual guarantee system for insurance rights alienation guarantee of shipowners and bank self-insurance so that ensure the safety of financing [5].

In conclusion, although there are more studies on ship finance in China, it's lack of a systematic view of the overall shipping industry (supply) chain to analyze problems and propose innovative solutions and at the same time, lack of in-depth research on ship finance in Liaoning province. At present, only Yangyang and Li Nanni of Chinese people's bank, Dalian Centre branch, have analyzed the financing problems of ship enterprises in Dalian, Liaoning province and put forward corresponding policy Suggestions [6], but further development and further research is needed. This paper intends to combine

literature research with field research, analyze and summarize the advanced concepts, policies and regulations of ship finance at home and abroad so that puts forward some ideas and countermeasures for the innovation development of ship finance, including the policies and regulations of ship finance, the business model of ship financing and insurance, and the solution of talent introduction and training in order to solve the problems such as shortage of funds, financing difficulty and expensive, ship financial services and channel simplification and furthermore, provide better reference for the construction of Northeast Asia international shipping center in Dalian and the future development of China, Liaoning shipping and shipbuilding industry.

II. THE CURRENT SITUATION OF THE SHIPPING INDUSTRY AND THE PROBLEMS OF THE SHIP FINANCIAL ANALYSIS IN LIAONING PROVINCE

A. *The current situation of the Liaoning Province shipping industry*

Liaoning shipbuilding industry is mainly concentrated in Dalian city which is State-owned large shipyard mainly. There are more than 200 kinds of ship manufacturing, supporting and industrial and trade enterprises in the province including Bohai shipbuilding heavy industry co., LTD., Located in Huludao city, Liaoning province, and some small and medium-sized shipbuilding enterprises in the Panjin city Liaobin economic zone or other areas. Dalian is one of the major shipbuilding bases in China, accounting for 10% of China's ship output and nearly 15% of the country's output value, which shipbuilding enterprises mainly state-owned or state-owned joint-venture shipyards and the overall strength is stronger, the technical level is higher, such as Dalian shipbuilding heavy industry group co., LTD., Dalian zhongyuan shipping engineering group co., LTD. and Dalian zhongyuan kawasaki ship engineering co., LTD.

In the first five months of 2017, due to the effect of shipping market downturn, the main economic indicators of Liaoning shipping industry shows the drop trend, for example, shipbuilding completed 1823 thousand tons of deadweight tons, the year-on-year decline was 14.8%; New orders 2092 thousand deadweight tons, down 20.64% year on year; Holding orders 123.24 million deadweight tons, down 18.6% year on year, partial ship enterprise zero orders.

The survey data show that from 2016 to the first half of this year, the shipyard in Liaoning province has contracted new orders decline sharply, and the lower prices have caused the profits to shrink sharply. And there will be no big improvement in the next few years, as new orders fall sharply, and the shipyard's operations will be severely tested in the coming years. The causes of these problems on the one hand is shipbuilding overcapacity, such as the current global shipbuilding capacity more than 200 million deadweight tonnage, China's shipbuilding capacity accounted for nearly 100 million deadweight tons, and the global demand for new ships every year at about 80 million deadweight tons. Due to excess capacity, unordered competition is fierce and the situation facing enterprises is very serious; On the other hand, the shipping market as a whole continues to slump and the

global demand for shipbuilding is insufficient. The Baltic dry index (BDI) fell to a 30-year low of 290 points in February 2016. At the same time, the survey found from the production and operation situation of Dalian shipbuilding heavy industry group co., LTD., that civilian orders dropped sharply and more than half of civilian orders at present were through the national "old for new" policy support, most of existing orders from military-industrial complex projects. Most of the ship-type prices have been halved, such as the order price of main bulk carriers and oil tankers carried on by Dalian shipbuilding heavy industry group co., LTD., have fallen by more than 50% in 2007 and the first half of 2008.

In the aspect of ship insurance, by investigating the insurance companies in Dalian, the investigation data is shown in table 1.

From table 1, it can be seen that ship insurance of Dalian city in the first half of 2016, except for individual insurance companies, the overall coverage and insurance premiums are decreasing. The main reason is that the shipbuilding industry and shipping industry are stagnant, and the industry competition is fierce and the rate is lower. Research that at the same time, the insured amount export credit insurance of Dalian in 2015 was \$3.042 billion, but only \$75 million in the first half of 2016, which the main reason of a sharp decline situation is that China's export credit insurance is a new ship insured export projects, while 2016 new ship orders are very few so as to cause the insured amount is very low.

The market situation is grim, facing the difficulty of receiving orders, making profits difficult and making the ship delivery difficult, resulting in a sharp decline in the efficiency of Liaoning shipbuilding enterprises.

B. *The problem analysis of ship finance in Liaoning province*

Based on the current situation analysis of the ship industry in Liaoning province, the paper analyzes the problems of ship finance in Liaoning province:

1) *Large amount of financing, high financing cost and impact on enterprise market competitiveness*

According to the survey data, the value of shipbuilding in Liaoning province was 45376 billion RMB yuan in 2016, according to the current market situation which owner's advance payment is 30% of, the value of ship material and equipment accounts for some 70% of the output value, so the whole ship finance in Liaoning province is about 40% of total output value, or 18 billion yuan, which the amount of financing required is large. Despite the strong support of the Export-Import bank, Sinosure and other financial institutions in recent years, Liaoning, especially Dalian's main shipyard, is supported by preferential interest rates and credit insurance, domestic ocean-going ships, marine engineering projects of domestic shipowners, national military projects have not yet implemented preferential interest rate loans. Compared with the 1 to 2 percent of the total financing costs of major competitors such as Japan and South Korea, the high cost of financing has been highlighted. In addition, the small and medium-sized shipyard and shipping enterprises in Liaoning still face the double pressure of financing and capital raising

expensive, which affects the competitiveness of the international market of enterprises.

2) *The tax burden on the export of ships remains heavy*

The state shall exempt the VAT from the export goods produced by the production enterprises, but according to the provisions in article 25 of the fiscal tax [2005], all localities may impose urban construction tax and additional on VAT exemption. Since implementing the tax policy in 2010, it has added a lot of tax costs to Liaoning shipyards. In the case of DSG pay a total of 7.9 billion yuan for city maintenance, construction tax and extra charges of education funds.

In the current market situation, due to China's ship design capabilities are weak, especially high-end products, which rely on imported foreign technology and drawings, 16.72% of the taxes are required (including 6.72% VAT, urban construction tax and education extra fees, 10% withholding foreign enterprise income tax) which part of the tax is withhold and remit tax, but because of the proprietary technical nature, has no alternative, so enterprise bargaining power is weak,

technology providers hardly afford this part of taxes and fees, as a result, all such taxes borne by the shipbuilding enterprises, and bring the larger tax burden.

3) *The development of ship financial leasing business is still in its infancy*

Ship financing lease is a financing mode that the lessor paid to the shipyard for buying ship and leased to the lessee to use according to the lessee (shipping companies)'s the specific requirements of the ship and the choice of shipyard, and rent installment by the lessee.

In recent years, the ship financial leasing business has shown explosive growth in quantity and scale, and has played an obvious driving role in the development of shipping industry and shipbuilding industry. Ship financing lease business, meanwhile, has become one of the key work of FTZ shipping center construction, such as one of the important tasks of Tianjin FTZ, is making financial leasing business bigger and stronger, which actively carry out single ship financial leasing business, strive to form a financial lease industry gathering area.

TABLE I. LIST OF MARINE INSURANCE IN DALIAN CITY (2016)

Insurance Company	Premium (10,000 yuan)		growth	Reparations (10,000 yuan)		Loss ratio	Guarantee (10,000 yuan)	
	Current period	corresponding period	%	Current period	corresponding period	%	Current period	corresponding period
PICC	12674	12322	2.90%	562	772	4.40%	805378	918680
Pingan	2149	2048	4.97%	62	1331	2.90%	543105	715178
CPIC	3785	3615	4.71%	565	432	14.94%	3650325	2977979
HTI	334	103	225.45%	0	0	0.00%	145698	38489
TAI	0	80	-100.00%	0	0	0.00%	0	25019
TPI	129	0	——	11	0	8.56%	32000	0
CI	13	40	-67.69%	0	0	0.00%	1832	3684
YAI	21	21	0.57%	3	0	12.42%	960	960
HAI	10	0	——	0	0	0.00%	500	0
DDI	669	561	19.22%	13	64	1.92%	366338	355416
ABI	0	0	0.00%	0	0	0.00%	0	0
DBI	0	0	0.00%	0	0	0.00%	0	0
SI	146	410	-64.30%	13	207	8.57%	74534	192582
TPI	0	0	0.00%	0	0	0.00%	0	0
BCI	241	228	5.90%	69	34	28.48%	133671	129140
RCI	0	0	0.00%	0	0	0.00%	0	0
YDI	201	199	0.70%	26	7	12.86%	21083	19464
CLI	21	38	-44.74%	0	0	0.00%	7630	7559
FBI	5	30	-83.08%	0	0	0.00%	399	4838
ZSI	0	0	0.00%	0	0	0.00%	0	0
AHI	0	0	0.00%	0	0	0.00%	0	0
YCI	0	0	0.00%	0	0	0.00%	0	0

(Including hull insurance, Ship building risk, Marine engineering project insurance, Ship repair liability insurance, container insurance, Protection and indemnity insurance)

However, the financing lease business in our country, and even in Liaoning encounter many obstacles in the process of development, one of the most important is the lack of enough ship financing lease industrial policy support, lack of innovative business models of ship financing lease and the lack of human resources.

4) *Lack of innovation in Marine insurance varieties and weak risk control ability*

Currently, ship insurance in Liaoning is mainly covered by some large state-owned insurance companies, such as PICC, Pacific insurance, China export credit insurance company and etc., which the insurance variety of ships is also very limited to ship construction insurance, operation insurance, export credit insurance, etc., and ship insurance has insufficient innovation capability and risk control ability, at the same time the lack of service network all over the world's major ports, international recognition is low, causing huge premiums into the foreign insurance company so as to weaken the protection and support of domestic vessels and shipping industry.

From the perspective of the micro level of the industry, as a result of Liaoning main shipyard's own strength, or are mostly large state-owned enterprise groups background, it is not difficult to finance itself through Banks, mainly through the national import & export bank, Liaoning branch of the China development bank, and other construction bank, China's export credit insurance companies for financing, their main concern is how to get more cheap loans and reduce the tax burden. But as the shipping market has been sluggish in recent years, shipowners have offered fewer advanced payments, which are below 30%, the rest of the money needs to be financed or default with the payment of the supporting enterprises in the upstream vessels, resulting in the shortage of funds for the supporting enterprises of its upstream vessels and affecting its daily production and operation, at the same time due to the upstream enterprise own scale and financial conditions constraints lead to the plight of the financing difficulties, if this kind of situation if exist for a long time, it is bound to affect the stability of the ship industry chain and the supply quality and service quality.

In addition, some of the powerful small and medium-sized shipping enterprises in Liaoning province are more difficult to operate due to difficult financing and financing expensive.

On the other hand, the demand side of the ship or operator, the owner or the shipping companies, large state-owned shipping enterprises in Liaoning, such as China Ocean shipping group co., LTD. Liaoning branch offices due to the advantages of the strong strength, large scale, and ship financing problems are slim. But for some small and medium-sized shipping enterprises which have a certain strength, and stable orders to buy a new boat instead of the old boat, the financing difficulty

and high cost of financing, has formed certain influence on the shipping and the development of shipping industry.

To sum up, the above two aspects of ship financing problems, have a direct impact on the development of shipping industry and shipbuilding industry in Liaoning province, and also influence the construction of the Northeast Asia international shipping center in Dalian.

III. CORRESPONDING COUNTERMEASURE AND SUGGESTION

Based on the above analysis of the current situation of Liaoning shipbuilding industry and ship finance problems, intends to refer to the advanced and mature ship finance concepts, policies, regulations and methods from home and abroad, and puts forward the following ideas and suggestions for the development of ship finance innovation:

A. *Integrated solution of ship finance based on integrated credit supply chain*

The ship industry is an industry chain or supply chain that runs through the ship matching enterprises - the shipbuilding enterprises - the shipping enterprises - the traders or the customer enterprises. In this industry (supply) chain, shipbuilding enterprises often occupy the core of the industry (supply) chain due to its strong strength. Previous ship finance and insurance were often carried out for a link of the industry (supply) chain, lacking of overall system consideration and design, which not only increased the risk of credit risk of financial institutions, but also affected the smooth operation and development of the whole industry (supply) chain.

In view of the above problems, this paper draws lessons from foreign advanced supply chain finance concepts and methods, and proposes the integrated solution of ship finance based on combined credit of the whole industry (supply) chain, as shown in figure 1.

From Figure 1, in the whole shipbuilding industry (supply) chain to take multi-channel financing and insurance mode, such as: the traditional bank loans, export credits, ship industry fund, ship floating mortgage financing, ship financing lease and its development mode, sea-land warehouse, shipping logistics factoring, syndicated the advance payment guarantee, coinsurance syndication, order financing, inventory financing, accounts receivable financing, futures and ship insurance under construction, export credit insurance and shipping insurance etc.

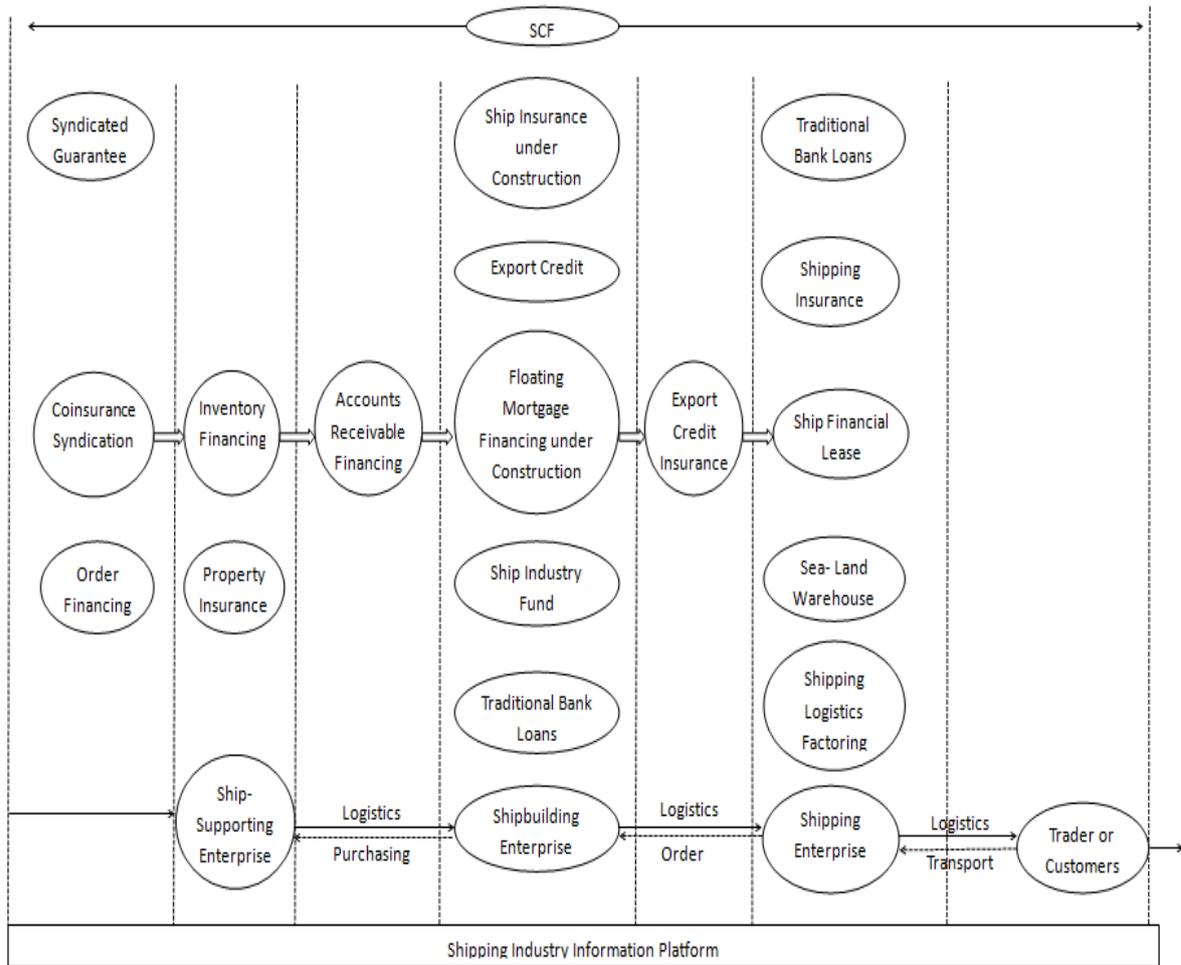


Fig. 1. The overall solution of ship finance

Meanwhile on the basis of above, because in the whole industry (supply)chain, the shipyard occupies the key position of enterprises, banks and other financial institutions can use large shipyard's credit status, through government and industry enterprises cooperation, to set up the ship industry information platform, which bundle the credit of the shipyard with the upstream and downstream enterprises, combined with the analysis of large data from industry information platform, provide portfolio credit and overall ship financial integration solutions for the upstream and downstream enterprises, which is including coinsurance syndication, order financing and etc. for providing end procurement of raw materials from the ship supporting enterprises -- inventory financing and insurance--accounts receivable financing, ship export credit or ship floating mortgage financing combined with export credit insurance -- the integration of ship financing lease and shipping insurance. By means of the shipyard credit and each downstream node returned to pay for the financing of each upstream node, forms a whole industry closed (supply) chain ship financial integration solutions, which can not only meet the financing needs of various nodes enterprises, but also effectively reduce the credit risk of financial institutions, so that strongly support development of the Liaoning ship and the shipping industry and the construction of Dalian Northeast Asia international shipping center.

B. Ship industry support policy should be introduced

In view of the current situation and problems of the Liaoning shipbuilding industry, it proposes that the relevant departments of the government should formulate corresponding industrial support policies, in order to reduce the burden and upgrade the ship industry and the shipping industry, and to revitalize and develop as soon as possible, details follows:

1) Proposes to increase the financial support for digital shipbuilding, intelligent manufacturing and R & D, in order to promote product structure adjustment.

To promote the integration of the two, intelligent design and manufacturing, it requires a large capital investment in terms of hardware and software for transformation of shipbuilding enterprises in the process of upgrading and transformation of industrial base, so suggest that more high-tech ship research support policies can continue to be introduced, offering greater subsidies and financial support, such as the state capital, preferential interest rates, discounts and other ways to enhance the strength of enterprises, so as to accelerate China's shipbuilding industry intelligent development pace.

2) *Provide the corresponding policy support and guidance to the supply side structural reform of shipbuilding industry*

At present, the state, provinces and municipalities give tax exempt policies only to the restructuring of the production capacity acquisition by means of equity acquisition. So propose that the state can also introduce tax preferential policies for the related enterprises under the same control after taking asset purchase, asset package acquisition, and equity acquisition, to be transferred by means of asset transfer, so as to promote ship industrial structure the upgraded and resolve the overcapacity.

In addition, to the shipbuilding enterprises capacity compression (removal of the main production facilities), suggest that offer the subsidies to avoid industry overcapacity contradiction in the light of steel and coal industry.

3) *The storage of fixed assets shall be exempted from depreciation*

Suggest that the relevant departments should introduce provisional financial accounting policies, and reserve enterprises to suspend the depreciation of fixed assets such as storage equipment and facilities.

4) *Suggest to reduce the tax burden and promote the making countries round*

Suggest that the government and relevant departments issue policies to reduce the VAT from ship with China flag built by China shipyard and tariffs on imported equipment, or the VAT rebate on the purchase of the ship, so that reduce shipping companies ship procurement costs, achieving with the international similar enterprises tax levels (such as: the flag of convenience) and in the same competition condition, and improve the shipping enterprise's profit ability and survival ability to promote making countries round and development of related industries.

C. *Learn from domestic and international experience, develop ship financing lease and innovate ship financing lease and ship insurance mode*

Ship financing lease is an ideal financing mode for small and medium-sized shipping enterprises with stable business order and certain strength in the current financial crisis and market downturn in Liaoning.

In view of the problem of ship financing lease in Liaoning, the following suggestions are put forward:

(1) Providing preferential support policies for ship financial leasing. The relevant departments of the government should learn from the advanced experience and ship finance policy in developed countries, tilt on the ship leasing industry in the credit policy, encourage banks and other financial institutions to increase shipping and shipbuilding enterprises financing efforts, provide special loans for rental agency, and set up financing lease funds, trusts, bonds and other multi-level

financing channels to ensure a stable funds source. At the same time, the government should learn from foreign advanced experience, increase financial subsidies to the ship financing lease, give tax breaks, subsidies and other preferential conditions given by the government, allowing the lessor to accelerate depreciation in the accounting treatment, thereby reducing the tax burden, to better promote the development of Liaoning shipping finance leasing industry.

(2) Learn from domestic and foreign experience, innovation ship financing leasing business model

Suggestions to learn from successful international experience and that of Tianjin, Shanghai, Shenzhen FTZ or bonded areas, actively carry out international ship leasing model for a ship, that is, a separate registered item company, separate management, separate accounting, risk isolation, make full use of preferential policies in the bonded zone or FTZ.

In addition, making full use of the country's "One Belt and One Road" strategy, actively develop cross-border financial leasing business and lease ship to the enterprises along "One Belt and One Road" country; it can also further innovation in financial leasing on the basis of the above to develop financial leasing trust, factoring, asset securitization.

(3) Actively introduce and train ship finance talents.

Ship finance talent is a typical composite professional talents integrated with ship technology, shipping, finance. At present, there are no such specialties in Liaoning universities, and lack of training mechanism to ship financial talents. On the one hand, suggest that the government plans to introduce relevant policies and actively introduce ship financial professionals; on the other hand, suggest that the government strongly supports universities in Liaoning province to open relevant majors direction and actively promote university-enterprise cooperation, efforts to build a good ship finance talent reserve for Liaoning ship, shipping industry and the construction of Northeast Asia international shipping center in Dalian.

(4) Actively innovate varieties of ship insurance business to enhance risk management and control ability

In view of the problem of Liaoning ship insurance, suggest that the government and relevant departments actively learn from the advanced experience of foreign countries, make efforts to innovate ship insurance products, build a global service network, vigorously develop the ship reinsurance business, and improve the risk management and control ability. At the same time, suggest opening foreign capital shipping finance and insurance institution business license to promote the exchange and development of domestic and international ship insurance and financial institutions corresponding business, so as to improve the level of ship finance and insurance in Liaoning.

IV. CONCLUSION

The shipping industry and the shipbuilding industry are still in the doldrums for now and for a long time to come. In situations where demand cannot be improved in a short period of time, in addition to the need to upgrade the industry itself and the reduction of production capacity, through the effective reference to the financial concepts, the domestic and foreign advanced and mature policies, regulations and methods, from the whole shipbuilding industry (supply) chain system perspective, put forward the integrated solution of ship finance based on the whole industry (supply) chain, to achieve diversification of financing subject and channel, issue corresponding policy support and innovation of shipping financing lease business model and ship insurance business varieties, improve risk control ability, actively introduce and cultivate the ship finance talents, so as to better solve the financing difficult and expensive financing difficulties of Liaoning ship and shipping enterprise, it also provides effective

reference and development path for China's ship, shipping industry and shipping center to tide over difficulties in the current global market environment.

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