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Research on China-Asean Shipping Trade Development from the Perspective of "the Belt and Road Initiative"

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ABSTRACT. *ASEAN is a priority region in the pursuit of the Belt and Road Initiative. China needs to form greater synergy between the Belt and Road initiative ASEAN's development plans. It is beneficial to work with ASEAN countries to deliver on the outcomes of the Belt and Road Forum for international cooperation, further synergize the Belt and Road Initiative with the Master Plan on ASEAN Connectivity 2025 and deepen all-round cooperation in maritime project and shipping trade. The purpose of this research is mainly to investigate existing problems of China-ASEAN bilateral shipping trade through analyzing current trade structure, the analysis will also refer to the influencing factors of shipping trade. Based on the findings that have been evaluated from the data and analysis, recommendations for improving China-ASEAN shipping trade could be argued and confirmed ultimately.*

KEYWORDS: *The belt and road, Shipping trade, China and asean countries*

1. Current Situation of China-ASEAN Shipping Trade

1.1 Analysis of Economic Operation of Chinese Shipbuilding Industry

Fundamentally, this paper analyzes the overall economic operation and three key indexes of Chinese shipbuilding industry in 2019. Three indexes are: shipbuilding completions; new orders and handing orders index. During the period from January 2019 to December 2019, there is a significant increase in the volume of shipbuilding completions; on the contrary, the volume of new orders and handing orders decrease gradually.

Table 1 below illustrates the figures of main six indexes and growth rates, it is estimated that there is a rise in China's shipbuilding completions volume, which arrives 36 million 720 thousand DWT within this period. However, the new orders and handing orders volumes decline by 20.7% and 8.6% separately. There are corresponding trends in export shipping indexes.

Graph 1, Graph 2 and Graph 3 demonstrate the proportions of three key shipbuilding indexes of three countries in world market in 2019. Compared with another two maritime powers--Japan and Korea, China processes competitive advantages in three aspects. It can be summarized that proportions of China's shipbuilding completions, new orders and handing orders index in world market is 37.2%, 44.5% and 43.5% respectively.

Table 1 Figures Of Main Six Indexes and Growth Rates in 2019

	Shipbuilding completions	New orders	Handing orders	Export shipbuilding completions	New export orders	Handing export orders
Ten thousand DWT	3672	2907	8166	3353	2695	7521
Growth rate (%)	6.2	-20.7	-8.6	6.0	-15.9	-5.5

Source: Author's own elaboration based on China Association of the National Shipbuilding Industry and Clarksons Shipping Research.

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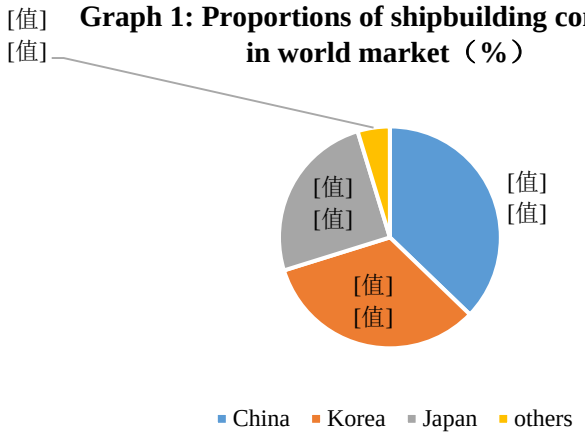
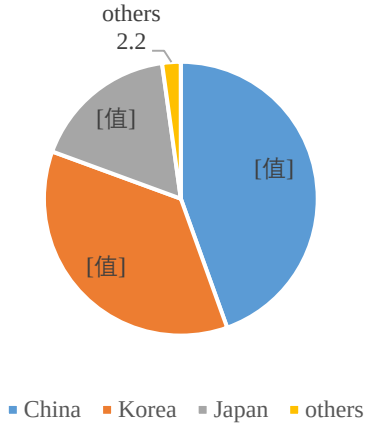
Graph 1: Proportions of shipbuilding completions in world market（%）



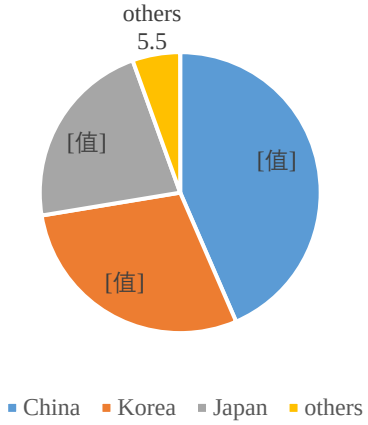
Source: Author's own elaboration based on China Association of the National Shipbuilding Industry

Graph 2：Proportions of new orders in world market (%)



Source: Author's own elaboration based on China Association of the National Shipbuilding Industry

Graph 3: Proportions of handing orders in world market (%)



Source: Author's own elaboration based on China Association of the National Shipbuilding Industry

1.2 Overall China-Asean Shipping Import and Export Situations

According to the statistical data of Chinese Maritime Customs and UN Comtrade Database, this research summarizes the general shipping trade situations from January to December 2019 that based on the 9 maritime

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nations① of ASEAN. The total shipping export sale reaches 7.8 billion dollars and the shipping import sale achieves 497.8 million dollars in 2019. To be specific, the shipping trade mainly includes two aspects: whole ships and ship equipment. In 2019, the total import sale of ship equipment is 240.3 million dollars and total export sale of ship equipment is 2.73 billion dollars; the import sale of whole ships is 257.5million dollars and export sale of whole ships is 5.07 billion dollars. In general, the shipping export scale grows dramatically and increases four times that compared with 2002, the total export sale was just 1.67 billion dollars in 2002; the growth scale of shipping import is much larger, the shipping import sale is 497.8 million dollars in 2019 and that amount was only 4 million dollars in 2002. It is obviously that the top three shipping trade partners of ASEAN with China in 2019 are: Singapore, Thailand and Malaysia. Singapore processes the largest export volume of whole ships and Vietnam keeps the greatest export volume of ship equipment. Furthermore, Thailand as the top one importer in 2019, ship equipment become its major import products.

1.3 China-Asean Shipping Trade Structure

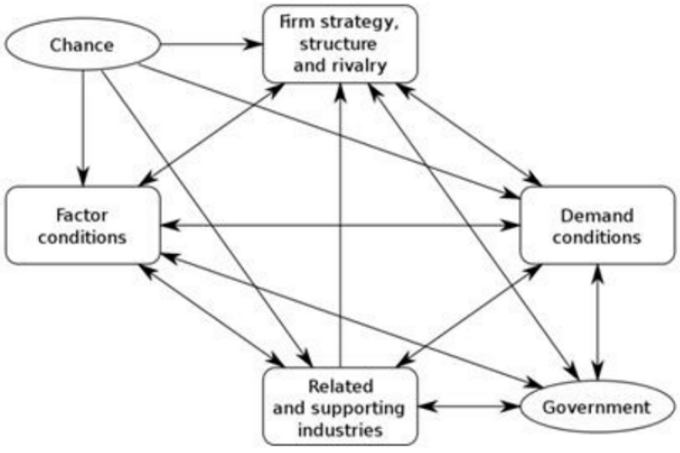
From the perspective of shipping export trade structure, the export of ship equipment occupies larger proportion than whole ships export. It is analyzed that cranes, steam turbine parts, marine diesel engine parts are the major exported ship products. For the whole ship export trade, motor cruise ships, rowboats, oil product tankers and bulk carriers take up significant percentages in export of whole ship.

In terms of import structure, import of ship equipment accounts for larger amount; ship engines and diesel engines parts become main imported ship products. For the imported ship equipment, the engine parts (SITC Code②: 713:11, 713.21-713.22, 713.31-713.32, 713.81, 713.23, 73.33, 713.82, 713.19, 713.91, 713.92) take up the maximum percentage in total imported products. Followed by engine parts, the number of imported cranes (SITC Code: 744.31-744.35, 744.37, 744.39) increase rapidly in 2019, which sets new record.

2. Analysis of Influencing Factors on Shipping Trade Development

This paper may demonstrate the influencing factors from six aspects that based on the “Porter Diamond Model”, which was proposed by Michael Porter in 1990 and is also called “National Competitive Advantage Theory”.

Graph 4: Porter Diamond Model



Source: Porter, 1990.

2.1 Production Factors

Production factors include labor factor, capital factor, natural resources, and so on. Firstly, China’s shipping trade is mainly contributed by processing trade, and the domestic technical research and innovation will be the main constraint on shipping development. Owing to the advantage of labor supply and transferring to China, it builds the strong shipping trade relationship between China and ASEAN. In this way, the cost of labor force may affect domestic shipping trade development.

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On the other hand, capital commitment is another influencing factor that becomes a comparative advantage in shipping trade. Capital investment that went into shipbuilding trade and production may directly affect international competitiveness.

2.2 Relevant industries' Influences That on Shipping Export Trade

It is commonly known that shipbuilding industry belongs to assembling industry, shipbuilding requires large amount of installation kits. China's marine vessel exports include main vessel as well as the corollary equipment export. Thus, relevant industries' effects could make contribution to the bilateral shipping trade devolvement. However, variety of Chinese marine equipment enterprises contain small production scales; and the ship supporting kits account for low domestic production rates, these influences may restrict shipping trade between China and ASEAN countries.

2.3 Government and Macroeconomic Policies Factors

According to Porter's theory, it is insisted that the government function is an external variable for industry advantage. With the propose of 'Vision and proposed actions outlined on jointly building Silk Road Economic Belt and 21st-Century Maritime Silk Road', Chinese shipbuilding industry has built close cooperation with countries that along the Belt and Road in range of fields. Things like that come along only once in a blue moon for Chinese marine enterprises. As shipping is a large industrial product and processes strong ability to earn exchange rate, so it becomes a pillar industry among electrical products exports. It can be summarized that Chinese government Initiatives create beneficial external opportunities for bilateral shipping trade.

2.4 International Currency and Exchange Rate Fluctuation Factors

Due to the high cost and payment of shipbuilding, shipping export trade is mainly influenced by international currency and exchange rate influences. As the international ship order transactions are settled in US dollars, the exchange rate of RMB against US dollar affects the shipbuilding enterprises' profits ultimately. Besides, as the ship production period is long, international exchange rate will fluctuate within this period and the final settlement price may not be fixed. With the condition of appreciation of the RMB, the relative price of domestic shipping export would be higher so that may go against marine vessel export; shipbuilding enterprises may encounter profits decline because of the US dollar fall during that years after receiving the orders.

2.5 Demand Conditions

With the Belt and Road initiative, it is crucial to commit to enhancing the ASEAN-China Strategic Partnership for mutual benefit, including maritime trade. To illustrate, Indonesia and the Philippines are two island countries among ASEAN members. Rapid development of maritime transportation industry in these two countries stimulate large order demands for Chinese ship making and repair enterprises.

Classifying the export orders by ship type in 2018, bulk carriers, oil tankers, container ships became the top three ship types in China's export to ASEAN members. For ASEAN ship market, the maritime engineering market processes huge potential power. This will increase and stimulate the export and import orders by ships or installation kits.

2.6 Trade Barrier Factors

Tariff barrier is the most common barrier in international trade, it is also an external factor that presented in Porter's Dimond Theory. Since 2010, China has provided zero tariff treatment to 6 ASEAN countries which have established diplomatic relations with China covering 90% tariff lines of products imported or exported from these countries.

China-ASEAN FTA (Free Trade Area) makes significant contribution to China's shipping trade. In addition, Singapore, Thailand, Vietnam are the major export markets of the ASEAN members in recent years. With the establishment of China-ASEAN FTA and China-Singapore FTA, it would have potential effects on China's shipping trade. More imported ships will be entitled to zero-tariff treatment.

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3. Existing Problems of China-Asean Shipping Trade

3.1 Bilateral Maritime Trade Relationship is Not Closely Related

It can be concluded that the maritime trade intensity between China and ASEAN countries is not highly strong. The southern coastal area of China is the core region that develops marine cooperation with ASEAN countries, this region is the main area of Pan-South China Sea Economic Circle as well. Frankly, Provinces in the South China Sea occupy small trade intensity with ASEAN except Hainan Province, bilateral and multilateral maritime trade relationships are not strongly closed. Otherwise, Hainan Province processes close relationship and high intensity of marine cooperation with ASEAN members.

3.2 Shipping Trade Structure is Not Reasonable

Firstly, the shipping export sale accounts for more than half in total trade; the total shipping export sale reaches 7.8 billion dollars in 2019 and that was 1.67 billion dollars in 2002. the shipping export structure realizes a transition from primarily products to manufactured goods, and a transformation from resource intensive to technology intensive products. Although, the export structure realizes an overall optimization, the trade structure of specific commodity is still lower. It seems that natural resources and higher-tech exports seen as region's future niche in global economy. However, technological content of shipping export is lower, ships are mainly manufactured by means of processing trade. Furthermore, backward shipping mode and low production efficiency may lead to poor risk resistance.

Secondly, compared with ocean powers, those countries process large proportion in high-end and high value-added ship products. Concerning about Chinese shipbuilding industrial structure, the adjustment of shipbuilding industrial structure has been improved, but the medium and high-end ship products take up a small proportion. China ranks the number one in ship receiving order in the world, but the shipbuilding enterprises have low profits with these orders. According the statistics of 2017, 1407 Chinese registered shipbuilding enterprises' operating revenues achieved at 590 billion RMB, and this would be year-on-year fall by 8.2%. It can be argued that China is now at the low and medium level in shipbuilding industry chain.

Thirdly, there exists weak domestic construction of ship technology and brand. According to relevant statistics, China's shipping trade is mainly embodied in processing trade of supplied materials. The proportion of processing trade contains 90% in total structure. It reveals that there lacks of effective innovation in ship technology, Chinese shipbuilding enterprises relay on cheaper labor and OEM(Oriental-Equipment-Manufacture), and China's ship processing heavily relay on foreign drawings and technology. In addition, the exporting countries of China's ship processing trade mainly come from western developed countries, labor and resource intensive are the main core competitive advantages of maritime industry.

3.3 Ship Technology and r&d Development Lag, Lacking of Independent Innovation Ability

According to statistical data in table 2, there is a decline trend in R&D cost investment in recent years, which drops from 5.6% in 2016 to 3.2% of China's total R&D costs in 2018. The low R&D investment and ship technology may impede the shipping trade development. It is inevitable to reinforce the independent innovation ability. On the other hand, people configured in domestic shipbuilding industry process low professional knowledges and technical skills, which can not supply efficient talent support for R&D of shipping trade.

Table 2 R & D Capital Expenditure and the Proportion of China's Ship Technology between 2013 and 2018

Year	2013	2014	2015	2016	2017	2018
Investment in R&D of shipbuilding industry(million)	115.7	121.4	135.9	153.6	128.8	119.5
Proportion of R & D capital expenditure of ship technology in total China's R & D expenditure (%)	3.5	4.7	5.4	5.9	3.6	3.2

Source: China Association of the National Shipbuilding Industry

3.4 Low Market Concertation of Shipping Trade, Hardly to Achieve Economies of Scale

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Generally, Chinese shipbuilding industry's main problem is small scale, low industry concentration. On one side, the shipbuilding enterprises' scales are small and process low risk resistances; variety of shipyards manufacture similar low-end ship types and share small produce differences. Frankly, the connotation of the core competence based on product differentiation is that the enterprise induces customers to prefer its products and chronically maintain their preference from forming horizontal product differentiation and vertical product differentiation. Consequently, this may cause structural overcapacity and vicious competition in the same industry.

On another hand, China lacks of international competitive and large-scale shipbuilding enterprises. Even CSSC (China State Shipbuilding Corporation) and CSIC (China Shipbuilding Industry Corporation) these large groups can hardly to form a strategic alliance and form scale economy so that they can reduce manufacture costs.

3.5 Financial Difficulty in Shipbuilding Industry

International shipping and shipbuilding market encounter low risk shake in 2018, The market is surely huge, but the competition is also fierce. Currently, there is a large gap in shipyards' cash flows, in order to save the company cost and perk up its cash flow, shipbuilding enterprises keep strong finaning dependence. There is less support that from some Chinese financial institutions for leading shipbuilding enterprises. In particular, except for Export-Import Bank of China, some financial institutions refuse to open advance payment guarantee or other credit guarantees so that may bring about difficulties for shipyard's operation and orders.

3.6 Lacking of Awareness of Risk Prevention in Shipping Trade

It is essential to concentrate about the international exchange rate risk in shipping trade between China and ASEAN countries. As ship project is medium and long-term project, and the order volume is usually large, the exchange rate fluctuations may swallow the original profits and lead to the loss of enterprises. To illustrate, shipbuilding enterprises' power instruments and facilities mainly rely on import; thus, the exchange rate fluctuations could raise the supply costs of shipbuilding enterprises.

4. Recommendations for Promoting China-Asean Shipping Trade Development

4.1 Strengthening Shipping &Maritime Trade with Asean Members under the Belt and Road

President Xi Jinping proposed jointly building a 21st Century Maritime Silk Road in his speech to the Indonesian parliament on October 3, 2013. The initiative aims to boost China-ASEAN maritime cooperation and forge closer ties in a community with a shared future. In view of this, establishing the idea of strengthening the maritime trade relationship between the two sides could be vital. The 21st century Maritime Silk Road highlights the development of blue marine economy, China could promote shipping export trade with ASEAN member countries.

Indonesia has established specific funds for ship procurement financing and imported goods are exempt from customs duties in Batam free trade zone, these measures are great magnets for Chinese shipping investors. Singapore and Malaysia are maritime nations and they are the key nodes of the Maritime Silk Road. Taking geographical advantage, Singapore will become core export nation and be significant for Chinese shipbuilding enterprises' radiation products to south east Asia.

4.2 Adjusting Shipping Trade Structure

Primarily, it is recommended to improve China-ASEAN cooperation in marine engineering equipment projects. Marine engineering equipment refers to oil and gas equipment, these include: exploration, oil drilling, production and manufacturing equipment such as FLNG and LNG. Secondly, cooperating with ASEAN members like Indonesia in whole ship and ship fittings, as Indonesia could not afford to build large-sized vessels and meet logistics requirement.

4.3 Promoting Technological Innovation of Shipbuilding Industry

With the rapid development of international trade and shipping trade environment, it is essential for China's

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shipbuilding industry to enhance technological innovation and increase R&D investment funding so that could improve the development efficiency of shipping trade. For ship trading enterprises, not only advancing the innovation ability of core technology but also improving the research and development of high value ships will be indispensable. Furthermore, shipbuilding enterprises should import related ship equipment from maritime power, strengthening the construction of ship supporting system. Ultimately, creating domestic ship trading brands may form China's competitive advantages in international shipping trade.

4.4 Improving Industry Concentration of Shipbuilding Industry

It should be critical for Chinese shipbuilding industry to train enterprises with international competitiveness and increase industry concentration. Initially, the representative enterprises like CSCC and CSIC should enhance upstream and downstream industry cooperation, playing to the industrial park of economies of scale, industry agglomeration effects and radiation effects. Secondly, domestic governments could encourage shipbuilding enterprises to form industrial chain integration through overseas M&A. Thirdly, it is also essential to reinforce the ASEAN market research, which could implement production differentiation and accelerate the establishment of international marketing system.

4.5 Increasing Financing Support for Shipping Trade

It is proposed that there are two main measures for financing improvement. Firstly, adopting tax refund or duty-free policy; secondly, taking bank credit supports for shipbuilding business; in other words, Chinese government could encourage financial institutions to provide financing supports for shipbuilding enterprises. It can be voted that the top three influential financing institutions include: EXIMBC (Import-Export Bank of China); BCM (Bank of Communications) Financial Leasing and ICBC (Industrial and Commercial Bank of China) Leasing. As shipping export takes up a lot of liquidity and shipyards should pay money in early-stage for manufacturing in advance. Thus, lots of money will be collected after delivering of vessels. It can be inferred that shipbuilding enterprises may encounter internal risk of withdrawal of distribution funds. In case of that, it is recommended that financing institutions may supply ship guarantee services or cross-border RMB settlement.

Moreover, it could be meaningful to establish special development funds and provide good technical and capital conditions for shipyards. The ICBC Leasing, BCM Leasing and EXIMBC which mentioned above are all shareholders and members of Silk Road Fund in China, which provide credit funds for ship and port projects. Taking foreign maritime fund as an example for considering, investors' funds can be raised to invest in innovating financing tools and supporting shipbuilding industry. The super large sand ship construction project of China's Qingdao Beihai shipyard could be another successful experience; this newly-built vessel is developed under the cooperation of ICBC (Industrial and Commercial Bank of China) leasing and China Merchants shipping company, ICBC supports full play and comprehensive financial services for this project.

4.6 Improving Risk Prevention Mechanism of Shipping Trade

It can be analyzed that exchange rate risk aversion plays vital role in risk prevention system, especially for manufacturing industry. Shipbuilding enterprises need to analyze foreign currency assets and liabilities conditions so that can balance foreign currency asset structure. Concerning about operating risks, it is inevitable for shipbuilding enterprises to consider colleagues and competitors' economic situations promptly.

5. Conclusion

To sum up, apart from internal and external opportunities for China shipbuilding industry, China-ASEAN shipping trade still faces different challenges and difficulties in the internationalization process. Especially, Chinese shipbuilding enterprises' core competences are still weaker than those of maritime powers. It is recommended that Chinese shipbuilding enterprises improve their risk management capability in order to reduce market uncertainty and country risk. It is necessary to enhance knowledge and experience accumulation so that this can improve the competences and advantages of shipyards under the Belt and Road initiative.

1) As the research mainly analyzes the shipping trade, this paper selects 9 maritime countries of ASEAN (include: Brunei, Cambodia, Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam) as research targets except for the landlocked country-Laos.

2) "SITC" is short for "Standard International Trade Classification", SITC Code is published by UN

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Comtrade Database; SITC Code can be recognized as standard catalogue of commodity classification of World Customs Organization in international trade.

References

[1] Claudio F, Malvina M and Alessio T (2018). Shipbuilding and economic cycles: a non-linear econometric approach. Maritime Business Review, vol.3, no.2, pp.78-79.
[2] David, R and Christopher, C. (2008) “Maritime security in the south China sea: coordinating coastal and user state priorities.” Ocean Development & International Law, vol. 39, no. 1, pp.102-103
[3] Evelyn, S. D (2010). ASEAN- China trade flows: moving forward with ACFTA. Taylor & Francis, pp.653-674.
[4] Fred, H (2019). The world of the newport medieval ship: trade, politics and shipping in the mid-fifteenth century. Taylor & Francis, vol.105, no.1, pp. 93-94.
[5] Jing, W (2017). Existing problems and solutions of China’s maritime trade. Modern SOE Research, vol. 9, pp.34-35.
[6] Prashanth, P (2015) China's plan for ASEAN- China maritime cooperation. The Diplomat.