

SUMMARY OF THE DISSERTATION

1. Summary of the Study

This study explores the rise of maritime transportation in East Asia from the early 1980s, including the increase of container tonnages, the development of shipping lines and formation of ocean transportation network, development of Port of Dalian and realization of direct shipping across the Taiwan Straits. Based on the existing data and literature, the maritime transportation in the region was examined by applying the descriptive analysis.

2. Findings of the Study

2.1 Findings of the Study on Container Transportation in East Asia

The research indicated that the economic development and increase of international trade in East Asia was benefited from the support of FDI from the 1980s. Consequently, the container transportation in the region has risen steeply since then.

The simple regression analysis on the correlation between OOF and the real GDP of China indicates that the inward OOF of China was playing a crucial role for the economic development before from 1980 to 1999. The economic development of China has been seeing a new era since 2000.

The simple regression analysis on the correlation between FDI and real GDP of China from 1991 to 2012 indicated that the two variables are high correlative, which means that the FDI was playing one of the most important role for economic growth of China.

The simple regression analysis of the correlation between FDI and container throughput of the countries/regions in East Asia from 1990 to 2012 indicate that the two variables of China are high correlative. It means that FDI was playing a crucial role in the increase of container throughput in China.

Though the amount of ODA was much less than that of FDI, it supported the new and

upgraded constructions of transportation in China from the early 1980s to the early 2000s. These projects laid a solid foundation for the future development of logistics in China. FDI also has been promoting the manufacture industries in China since the beginning of the 1990s, which drove China to become the “world factory”.

In 2013, the trade amount of East Asia accounted for over one-fifth out of the world, half of which was generated by China. Meanwhile, the container tonnage of East Asia accounted for 39.02% out of the world, 68.52% of which was transported via China. Consequently, the global container transportation center was moved from the United States to East Asia since the late 1990s, and China has become the prime beneficiary since then.

2.2 Findings of the Study on Shipping Lines in East Asia

The surge of container tonnage in East Asia brought more opportunities for securing the cargoes to the shipping lines from the mid-1990s. Meanwhile, the shipping lines of East Asia were developing rapidly and expanding their business to all over the world by joining the alliances.

East Asian shipping lines have become the vital power in global shipping market twenty years later since their emergence in the maritime market. By the end of 2014, the container transported by top ten East Asian shipping lines accounted for 32.13% out of the worlds' tonnage. However, the shipping lines of Europe, such as Maersk Line, MSC Line, and CMA-CGM Line, have become the fierce competitors in maritime transportation.

The other findings indicate that with the need for cost saving and efficiency enhancement, feeder service has become one of the important transportation vehicles for the main ports in the region.

2.3 Findings of the Study on Development of Port of Dalian

With the execution of *Plan of Revitalizing Northeast China*, a national development plan, Port of Dalian was developing rapidly since 2003. The development of the seaport

was benefited from the advantages of policies of tax and foreign investment. In addition, the backing forces from DETDZ, DFTZ and DFTDZ, three free trade areas and export processing zones in Dalian, are the other crucial support for the rise of container transportation. In 2014, the container throughput of Port of Dalian exceeded historical one million TEUs.

2.4 Findings of the Study on Forecasting Container Throughput

The research on the forecast of main container seaports in East Asia firstly examined the accuracy of the Developed TES Model then added the regulation factor (δ) which is the absolute value of maximum error. The simulation results indicated that the model is suitable for forecasting the container throughput of the selected seaports because most the actual values are within the forecasted range.

The simulation proved that the assumption of introducing a regulation factor to TES and the definition of the regulation factor are correct. Thus, the method can be applied to the study of forecasting the container throughput and provides a new way to the growth tendency of container throughput being interfered by some negative factors, such as Lehman Shock in 2008.

The reason why the forecast being conducted for a short term is to ensure the accuracy of the analysis. The forecast bases on the assumption that all the conditions are stable from 2015 to 2017. The forecast shows that the container throughput of the selected seaports will increase steadily in the coming three years except Port of Hong Kong and Port of Yokohama. The average growth rate of Port of Dalian during the period will be over 10%, followed by Port of Qingdao (6.63%) and Port of Busan (5.36%).

2.5 Findings of the Study on Expansion of Sino-Taiwan Trade and Realization of Cross-Straits Direct Shipping

The appreciation of NTD from the late 1980s forced the export-oriented enterprises of Taiwan to change the international business. Under the background, the investment from Taiwan to mainland China increased from the early 1990s. The indirect trade by passing the third country/region like Ishigakijima, Japan increased upwardly since 2000.

The governments of Taiwan and mainland China had made efforts on legislation since the early 1990s to realize the Three Links.

Meantime, both sides set up the associations for promoting the contacts across the Taiwan Straits. With these efforts, the realization of Three Links was resumed in December 2008. As a result, the Cross-Straits container tonnage has been increasing rapidly from 2009. Port of Kaohsiung, Keelung and Taichung have become the major seaports for across the Taiwan Straits shipping.

The realization of direct shipping has promoted the cooperation across the Taiwan Straits. Moreover, the direct shipping reduces the cost of maritime transportation in terms of bilateral trade.

The forecast indicates that Logistic Function is a suitable method of realizing the trade amount ratio of Taiwan against China. The results of the simulation indicate that the values of MSE are close to zero. Thus, the Logistic Function can be applied to the forecast.

The forecast indicates that the trade amount ratio of Taiwan against China will increase steadily from 2015 to 2020. The average ratio of the Taiwan's export to China will account for 26.76% of the total export of Taiwan; for Taiwan's import, the average ratio will account for 17.50% during the same period. The steady growth of bilateral trade will provide more business for the direct shipping across the Taiwan Straits.

3. Conclusion

The tremendous change in maritime transportation in East Asia has taken place since the 1980s and become the new maritime transportation center in the world. Blessed by FDI, the economic and international trade has been increasing steeply. The container transportation was benefited from the "world factory" and ever increasing demand in East Asia. As having become an emerging economy, China has been handling the major share of global container transportation in the recent years.

The rise of container tonnage provides more business to the shipping lines in East Asia

than ever before. The development of East Asian shipping lines promotes the formation of the new global ocean transportation network and the prosperity of global shipping market.

With the booming of container transportation, China has started to establish new regional shipping centers since the 2000s. Port of Dalian, the first major container port in Northeast China, has been developed comprehensively from 2003. Ten years after of the operation, the port has become a pivotal node for maritime transportation in East Asia and the container throughput of the port recorded over one million TEUs in 2013. Based on the forecast results, the container throughput of Port of Dalian will increase 10% annually from 2015 to 2017, which is the highest among the selected twelve container ports in East Asia.

The rise of labor cost and the change of political situation between China and Taiwan in the late 1980s drove more FDI from Taiwan to mainland China. As a result, the economy and trade contact between both sides has become more frequent since the beginning the 1990s. Thus, the rise of trade amount brought the need for resuming direct shipping between both sides. By the efforts of the governments of both sides. The realization of direct shipping was resumed at the end of 2008. The forecast results indicate that Sino-Taiwan trade will steadily increase from 2015 to 2020, which might provide more opportunities for the shipping lines in cargoes collection.

4. Pending Issues and Suggestions for the Further Research

The study does not cover all the aspects of international logistics in East Asia due to the constraint of time and insufficient information. However, there are some suggestions for the pending issues for the further research on the field.

In recent years, the GDP in China has been increasing upwardly, which means the comparative advantage of labor cost in China will fade away in the future. The phenomenon indicates that the industrial bases will move from China to other regions such as Southeast Asia like Vietnam, Myanmar, and Cambodia, which provide low labor cost. In fact, Southeast Asia has become the new investment target of overseas

enterprises already. The cargoes shifted from East Asia to Southeast Asia could be regarded as a topic for further study.

As the industrial bases are being moved to Southeast Asia, the seaports in the region have become new emerging force for container transportation already. However, the capital for developing the ports in some countries such as Vietnam is insufficient. Thus, the development of these seaports are benefited from ODA or “Build, Operation and Transfer (BOT)”. The new seaports in Southeast Asia will become the nodes for intra-Asia trade lane. The further study could focus on this field.

The competition among shipping alliances has been getting intense since the 2000s. Avoiding cutthroat competition and promoting shipping safety management are the issues that shipping alliances have faced since then. The further study on the field could provide more valuable findings.

The proposal for establishing the free trade zone in East Asia was presented at the China-Japan-Korea trilateral summit in 2002. The goals of the free trade zone are to eliminate the tariff barrier and promote the international trade, FDI and circulation of foreign exchange.

Tiezzi (2014) state that “...It seems China, Japan, and South Korea are willing to put aside political differences for shared economic benefits...The three countries are well aware of the fact that the Korea-China-Japan FTA will stimulate the countries’ economic growth while also contributing to regional integration. The planned FTA could have an enormous impact, as the combined GDPs of China, Japan, and South Korea represent 20 percent of the world total. Similarly, their combined imports and exports account for 17.5 percent of global trade”.

The negotiation between China and Korea was completed in November 2014. The FTA will benefit to the international trade in East Asia. Thus, the future studies should focus on the impact of the new free trade zone on the shipping in East Asia.