Academic Journal of Humanities & Social Sciences

ISSN 2616-5783 Vol. 2, Issue 3: 24-30, DOI: 10.25236/AJHSS.040067

Regional competitiveness of ports in Southeast Asia under the background of "one belt and one road

Lian Zheng

School of Management, Shanghai University, Shanghai, 200444, China

ABSTRACT. *In recent years, under the circumstance of weak global economic growth, Southeast Asia, as an emerging market, has been attracting more and more attention from international investors because of its active regional economy and remarkable GDP growth performance. At present, the development of export-oriented economy through international trade has become one of the important strategies to promote economic growth in Southeast Asian countries. As an important window for regional development of import and export trade, container ports'operational capacity and modernization level can meet the needs of regional international trade and freight transport business, which has become an impact on international trade business development in Southeast Asia. The key to the exhibition. As an important gorge and key point for China to go out of the South China Sea and develop the "Silk Road on the Sea in the 21st Century", port investment and construction has attracted great attention.*

KEYWORDS: *Regional competitiveness, Port*

1. Analysis of Port Competitiveness Factor Based on SPS Software

Starting from the three dimensions of hinterland economic situation, port conditions and operation capacity, port concentration and evacuation capacity that affect the development of container ports, and considering the macro-competitiveness evaluation of regional ports in Southeast Asia rather than the detailed competitiveness analysis of individual ports, this paper screens out population, GDP, FDI data, port throughput, port water depth, liner transportation. Seven key indicators, transport connection index and railway length, are used to analyze the competitiveness of regional ports in Southeast Asia by factor analysis (Factor Analysis) using SSPS software.

Table 1 shows that eigenvalues of the first two components account for 80.152%, and the latter contributes less and less. Table 2 shows that the first factor has a strong positive correlation with port throughput, FDI data, liner connection transport index and port water depth, named as port factor; the second factor has a strong positive correlation with population, GDP and railway length, named hinterland

ISSN 2616-5783 Vol. 2, Issue 3: 24-30, DOI: 10.25236/AJHSS.040067

factor.

Table 1: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.469	49.561	49.561	3.469	49.561	49.561	3.197	45.666	45.666
2	2.141	30.591	80.152	2.141	30.591	80.152	2.414	34.486	80.152
3	.585	8.350	88.503						
4	.437	6.249	94.751						
5	.255	3.644	98.395						
6	.079	1.128	99.523						
7	.033	.477	100.000						

Table 2: Rotated Component Matrix

	Component	
	1	2
Container port throughput	**.916**	-.109
FDI	**.866**	-.218
Depth of Water in Ports	**.844**	.138
Liner shipping connectivity Index	**.836**	-.144
GDP	.167	**.947**
Population	-.124	**.944**
Rail Length	-.393	**.726**

Factor analysis can finally get the port factor score and hinterland factor score of each port, and then use the variance contribution rate of each factor as the weight (port factor: 45.666%, hinterland factor: 34.486%). The comprehensive score of each port factor is calculated by software.

ISSN 2616-5783 Vol. 2, Issue 3: 24-30, DOI: 10.25236/AJHSS.040067

Table 3: Score and Ranking of Ports in Comparative Analysis

Port	Port Factor	Port Factor Ranking	Hinterland Factor	Hinterland Factor Ranking	Total Score	Total Ranking
Singapore	2.731	1	-0.67	12	1.016	1
Jakarta	0.189	5	2.295	1	0.877	2
Surabaya	-0.316	9	2.11	2	0.584	3
Tanjung Pallapas	0.94	2	-0.266	8	0.338	4
Port of Kelang	0.818	3	-0.384	10	0.241	5
Vung Tau	0.337	4	-0.044	5	0.139	6
Leam Chabang	0.009	8	0.332	3	0.118	7
Hai Phong	0.05	7	-0.139	6	-0.025	8
Pasir Gudang	0.162	6	-0.504	11	-0.1	9
Manila	-0.319	10	-0.302	9	-0.25	10
Bangkok	-0.745	11	0.09	4	-0.309	11
Yangon	-1.335	14	-0.253	7	-0.697	12
Sihanoukville	-0.979	12	-1.222	13	-0.868	13
Phnom Penh	-1.024	13	-1.238	14	-0.895	14

2. Discussion on the Results of Factor Analysis of Regional Port Competitiveness in Southeast Asia

Singapore Port is ranked No. 1 in terms of comprehensive score due to the high score of port factor. This coincides with the fact that Singapore Port has been an important international container hub port in the Far East for many years. Singapore Port has 67 berths in Tanjong Pagar, Keppel, Brani and Pasir Panjang, of which Pasir Panjang has a water depth of 18 metres and terminal cranes can operate over 24 lines of containers. It can provide loading and unloading services for the largest container ships in the world [1].

Indonesia's Jakarta and Sishui ports rank second and third. In terms of population, GDP and railway length, which are positively related to hinterland factors, Indonesia's population exceeded 265 million in 2016, its GDP exceeded 932.2 billion US dollars, and its railway length was 5204 km. These data widened the gap between Indonesia and other countries in Southeast Asia. The goods transported by sea are mainly produced by labor-intensive industries. Indonesia's huge population

ISSN 2616-5783 Vol. 2, Issue 3: 24-30, DOI: 10.25236/AJHSS.040067

base provides basic labor resources for commodity production and import and export trade. At the same time, the extensive railway transportation system creates conditions for Indonesia's land cargo transportation and distribution. Therefore, the two ports rely on superior hinterland conditions, and the port's future development contains huge potential.

Malaysia's Danjong Parapas Port ranks fourth overall. From 2012 to 2015, the throughput of Danjong Palapas Port increased by 18.18%, ranking 17% in the world, and the growth rate of cargo volume was obvious. The water depth of the port is 19 meters, which is suitable for the docking of the largest container ship in the world. At the same time, the port has 14 berths with a total length of 27320 meters, 58 cranes, 12 channels of import and export, and an automated computer management system, which is conducive to efficient loading and unloading of container goods and shorten the operation time of container trucks. Danjong Palapas Port is located at the main crossing of the Strait of Malacca and is a new hub port for Malaysia's development.

Basheng Port ranks fifth, with 33 berths, 15 meters of water depth and 99 cranes. Its throughput reached 13.2 million benchmarks in 2016, ranking 11th in the world. The port is Malaysia's largest port, located in the northeast of the Strait of Malacca, central Malaysia, about 40 kilometers from the capital Kuala Lumpur, is an important hub port in Southeast Asia. The port operation rate is cheaper than Singapore, which attracts many regional feeder lines in Southeast Asia. At the same time, good port water depth conditions provide conditions for large container ships of shipping companies to dock.

Touton Port ranks No. 6. The port is located in the southern part of Vietnam. It is mainly operated by TCIT (Tan Cang-Cai Mep International Terminal). It is the largest container port in Vietnam, about 110 kilometers away from Ho Chi Minh City. The port was originally a fishing village. With the consent of the Vietnamese government in 2009, it was co-financed by Saigon New Port Company, Wanhai, Hanjin and MOL. It began to operate formally in January 2011. The port is committed to providing high quality service to container customers in accordance with international standards. The port has 18 nautical miles of coastline, 16.8 meters of water depth, 9 STS cranes, 22 E-RTG cranes and other shore-based equipment, suitable for 14,000 TEU container ships, and provides real-time business solutions through TOPS (Terminal Operations Package-System). As a new port built in ten years, the port relies on superior natural conditions, advanced management technology and shore-based equipment to provide high-level port operation services for cargo entering and leaving the port, which has a competitive advantage.

Linchaban Port ranks seventh and is the largest container port in Thailand. The Port Authority of Thailand attaches great importance to the development of Linchaban Port. Through port dredging, purchase of new cranes and other shore-based equipment, and expansion of yards, the comprehensive conditions of Linchaban Port are constantly improved. After dredging and other projects, the water depth of Linchaban Port can reach 16 meters, but the liner connection transport index is lower than that of the top ports, which represents the relatively

ISSN 2616-5783 Vol. 2, Issue 3: 24-30, DOI: 10.25236/AJHSS.040067

inadequate integration of Linchaban Port into the global liner transport network, and the competitiveness of port factors is slightly inadequate.

Haiphong Port ranks eighth and is the largest port in northern Vietnam. As an inland port, the siltation of the riverway in Haifang Port is serious, and the water depth of the port is mostly below 10 meters. In recent years, with the development of Vietnam's economy, dredging works of coastal defense ports in northern ports have been carried out. At present, the water depth of the port can reach 14 meters, which is suitable for 4500-8500 TEU ship type docking. It is expected that with the further improvement of the water depth conditions of coastal defense ports, the competitiveness level of the factors of coastal defense ports will be effectively enhanced.

The comprehensive scores of Gudang Port, Manila Port, Bangkok Port, Yangon Port, Sihanouk Port and Phnom Penh Port in Brazil rank low, and are positively correlated with the lower scores of port factor and hinterland factor in these ports.

3. Challenges to Regional Port Development in Southeast Asia

3.1 Large-scale container ships

Ocean Container Ship Operating Company is trying to reduce the cost of single container operation by continuously investing funds to build large container ships in order to quickly seize market share and gain a place in the shipping market.

Port investment and construction need to invest a lot of funds, land and other resources, and also need the support of national policies. Therefore, whether the ports in Southeast Asia can fully mobilize resources, upgrade and transform ports to meet the needs of large container ships will be the key to win in the future port competition.

3.2 Centralization of container shipping operations

Hirata [7] pointed out that the centralization of container shipping operation enabled the members of the alliance to more effectively realize the allocation of transportation resources, enrich the route network, gain the advantages of negotiation of port and railway rates, and make good use of the scale effect to reduce the overall operating costs and gain operational advantages. The alliance management mode has been recognized by the industry. The acquisition and merger between container shipping companies are constantly taking place. The shipping market is being controlled by several large shipping alliances. For port enterprises, the huge amount of cargo brought by shipping alliance ships is the most basic element of port business development. Under the background of "one belt and one road" construction, the route network between the countries along the route is constantly enriched, and the economic and trade exchanges are increasing. Therefore, whether the comprehensive conditions of the ports in Southeast Asia can be favored

ISSN 2616-5783 Vol. 2, Issue 3: 24-30, DOI: 10.25236/AJHSS.040067

in the network planning of the shipping companies, and become the important ports that the shipping companies choose to rely on in the regional port group, will directly relate to the future development prospects of the port, and also face the port development. Important challenges.

3.3 Unbalanced economic development in Southeast Asian countries

There are many countries in Southeast Asia, and the conditions, radiation areas and cargo sources of ports are different. How to make a good job of the division and positioning of ports in different countries and make clear the direction of future development under the condition of meeting the needs of national development? Through the clear division of labor and coordination and cooperation between ports, the route network planning of regional ports group can be strengthened, and through the ports each other. It will be a great challenge for the future development of ports in Southeast Asia to perform their duties, promote each other and coordinate development so as to promote the common development of regional economy covered by ports in Southeast Asia.

3.4 The backward condition of hinterland infrastructure in Southeast Asia

The construction of hinterland infrastructure is the basic condition for the development of transportation industry. As the land transportation facilities for port cargo distribution, railways, highways, ports and airports play a decisive role in the radiation range of port functions. At the same time, the collection and evacuation efficiency of facilities has a direct impact on port ships berthing and dock storage. Railways in most Southeast Asian countries are still the product of the 1950s and 1960s. Some of the Philippine railways can even be traced back to the Spanish colonial period. Vietnam's highway and asphalt road accounted for about 50%, and the first national highway was opened only in 2010, with a total length of 39.8 km [8]. The outdated transportation infrastructure of Southeast Asian countries can not meet the requirements of land transportation network for container standardization. Slow railway transportation and insufficient road network coverage are major problems in container port collection and distribution system in Southeast Asia. Infrastructure construction is not an overnight project. Whether the infrastructure condition of the hinterland in Southeast Asia can be effectively improved will be an important challenge in the future port development in Southeast Asia.

4. Research Prospects

This paper clarifies the competitiveness level of the main container ports in Southeast Asia, and provides reference for shipping company's route network planning, port investment and construction, enterprise location, etc. The port development in Southeast Asia is also in dynamic change with the economic development of the countries in the region. Therefore, it is necessary to look at the future changes of port competitiveness in Southeast Asia from the perspective of

ISSN 2616-5783 Vol. 2, Issue 3: 24-30, DOI: 10.25236/AJHSS.040067

development. This study is only a starting point of port research in Southeast Asia. With the development of regional economy in Southeast Asia, it is believed that port business in Southeast Asia will flourish and develop.

References

[1] PSA Singapore. Our Business [EB/ON]. PSA Singapore https://www.singaporepsa.com/our-business, Accessed in 2018.10.6.

[2] Pelabuhan Tanjung Pelepas Sdn Bhd. About Us Introduction [EB/OL]. Pelabuhan Tanjung Pelepas Sdn Bhd, http://www.ptp.com.my/about-us/introduction, accessed in 2018.12.10.

[3] Port Klang Authority. Facilities Container [EB/OL]. Pelabuhan Tanjung Pelepas Sdn Bhd http://www.pka.gov.my/index.php/en/facilities/container#, accessed in 2018.1.1.

[4] TCIT. About Us [EB/OL]. TCIT https://tcit.com.vn/information/about-us.html, accessed in 2019.3.4.

[5] Hutchison Ports Thailand. About HPT[EB/OL]. Hutchison Port Thailand http://hutchisonports.co.th/laem-chabang-port/ accessed in 2019.4.5.

[6] Port of Haiphong. System of Berth [EB/OL]. Port of Haiphong Join Stock Company,http://haiphongport.com.vn/en/system-of-berths.nd/system-of-berths.html, accessed in 2019.4.5.

[7] Hirata E. Contestability of Container Liner Shipping Market In Alliance Era[J]. The Asian Journal of Shipping and Logistics, 2017, 33(1):27-32.

[8] Tan Lifang. Vietnam Marine Transportation Development Research [J]. Southeast Asia Vertical and Transverse, 2014 (5): 30-34.