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Original article

The Implications of the Growth of Port Throughput on the Port Capacity: the Case of Malaysian Major Container Seaports

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Abstract

Malaysia, situated between East and West, is an interface in world maritime trade, playing a crucial role in the business of moving container boxes in South-eastern parts of Asia. The prominent container terminals in Malaysia such as Port Klang and Port of Tanjung Pelepas are positioned among the top twenty ports in terms of volume handled. The annual average growth of throughputs in Malaysian container ports increased more than three-fold from the year 2000 to 2010. Within this context, the development of Malaysian seaports has been significantly influenced by three forces: increased use of containerisation, significant growth in domestic economic activities and ever-changing patterns in both supply and demand chains, all of which have led to increased transshipment activities and altered shipping routes. This phenomenon has brought dynamic change to Malaysian container ports, resulting in the establishment of new terminals and adapting emerging technology to enhance the ports' ability to accommodate larger vessels and an increased number of containers. This paper aims to present the development of Malaysian container seaports by addressing changes to acreage size and handling volumes during the last three decades. The results of the analysis suggest that major Malaysian ports are experiencing an exponential growth in container trade with the expansion of port capacity following trade growth and need effective strategies to reduce the operational pressures of Malaysian seaports. The results of this research offer directions for development strategies of seaports by utilising the existing inland freight facilities as an effective strategy for capacity enhancement and develop efficient distribution network to meet future demands.

Keywords: Trade Growth, Malaysia, Seaport, Container Terminal, Seaport Capacity, Dry Port

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I. Introduction

More than three quarters of the Malaysian total land mass is exposed to maritime water and justifies the importance of the maritime industry to the nation. The Malaysian maritime industry has developed drastically since the 1970s after the first official government announcement in the Third Malaysia Plan to transform Malaysia towards becoming a well-known maritime nation (Third Malaysia Plan, 1976). During the Fourth Malaysia Plan period, which was introduced following the Third Malaysian Plan, the development and expansion of port facilities and interrelated maritime services, including the establishment of new shipping lines, were undertaken to cope with the growth in freight traffic and trade development. The development of seaports is the ultimate backbone of international trade and reveals the potential competitive advantages of their hinterlands (Lam, 2006). The combined factors of economic liberalisation and globalisation have led to Malaysia's increased participation in international trade. In many countries, especially in South East Asia (SEA) regions, the developments in international trade have triggered high investment and development in ports and logistics infrastructure. In Malaysia, the phenomenal growth of port throughput has been significantly contributing to government decisions on seaport capacity expansion. Seaport storage capacity is defined as the amount of cargo that can be handled by a seaport per time period, usually a year and for containers it is the number of handling containers per year (Bassan 2007, p. 3). Seaport capacity and the volume of trade must be in balanced proportions to preserve seaport performance as well as ensuring domestic and international competitiveness.

Thus, this paper aims at identifying the development of Malaysian container seaports by analysing the growth of container volumes during the last three decades and the capacity constraints encountered by major Malaysian seaports. This study also reveals the ability of Malaysian container seaports' capacity to accommodate the increasing trend in container volume in this region. Moreover, suggestions to utilise existing inland facilities have also been provided as substantial substitutes for Malaysian seaports to cater additional volume of containers in this region. This study provides relevant strategies for seaports to improve their capacity constraint by improving infrastructure and facilities as well as diverting their focus towards inland components for effective dyadic integration with hinterland's components (Jeevan and Saharuddin, 2011). The migration of containers beyond seaport regions has become a major trend in the globalized world. Therefore, the ability of seaports to adapt with the current trend and extend their functions inland by utilising existing inland facilities provides an additional advantage to the seaports (Jeevan et al., 2015a). Despite playing a significant role in the trade predicated on globalisation, seaports also have to be focus on globalisation trade patterns in order to enhance their performance, capacity and extending its role beyond the region (Jeevan et al., 2015b). The results of this research offer directions for the future capacity development strategies of seaports to move simultaneously with trade growth and providing significant strategies for capacity utilisation for effective collaboration from the inland component. Therefore, the prediction of the container volume in Malaysian container seaports is important to address the requirement for the seaport capacity extension and to reveal the role of